

National Incident Radio Support Cache User's Guide



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National Incident Radio Support Cache (NIRSC) Users Guide:

During the 2014 all-risk season the National Incident Radio Support Cache (NIRSC) supported fires, law enforcement, forest pest management, and the National Communication System (ESF2) of the National Response Plan.

While it wasn't the largest season for incident communications resource orders, there were some challenges

334 incidents were supported with 1,910 frequency assignments.

- * 132 Starter Systems were deployed from the National Cache
- 2,241 kits were issued
- * 16,891 handheld radios were issued
- * 923 hours and 1274 missions of infrared detection and mapping flights

It is important that all personnel involved in incident communications keep themselves updated regarding changes in equipment and technology. Several courses are scheduled for this year. I recommend that any communications unit leaders (COML) who have not been out for a few years, or communications unit leaders (COML) and communications technicians (COMT) who would like some first hand experience with the equipment, give Susan Bleeg, Technical Training, a call at 208-387-5857 and reserve a slot in one of our communications refresher courses.

I thank all of you for the work that you do in incident communications. Your role is vital and brings together all the functions under the Incident Command System. Thanks for your dedication and hard work.

If you have any questions for the National Interagency Incident Communications Division, please feel free to call me at 208-387-5947, or the Communications Duty Officer at (208) 387-5644, or the toll free number at 1-877-775-3451.

E-mail: mtuominen@fs.fed.us.

Sincerely,

/s/ Mike Tuominen

Mike Tuominen
Chief (acting), National Interagency Incident Communications Division

This publication is revised annually by the National Interagency Incident Communications Division, National Interagency Fire Center at Boise, Idaho.

Additional copies of this publication may be ordered from:

National Interagency Fire Center
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3833 S. Development Ave.
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Order NFES #0968

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NIICD Hotsheet

For up-to-date information on multi-mode (P25) radios, training, infrared operations, incident operations, COMC, new equipment in the NIRSC and more, visit the National Interagency Incident Communications Division web site.

[Http://www.nifc.gov/NIICD/hotsheet/hotsheet.html](http://www.nifc.gov/NIICD/hotsheet/hotsheet.html)

NIICD Documents

Visit NIICD's documents page for instructions, forms, and helpful information.

[Http://www.nifc.gov/NIICD/documents.html](http://www.nifc.gov/NIICD/documents.html)

INTRODUCTION

This booklet is designed to aid in the evaluation of incident communications needs for users of the National Incident Radio Support Cache (NIRSC).

To use this guide:

1. Read the descriptions of incident communications conditions starting on Pg. 24. Find those most closely reflecting your needs.
2. Each description corresponds to one or more drawings showing general and special purpose equipment applications. Match the condition to the drawing and verify the equipment specified will meet your needs.
3. When ordering equipment from the NIRSC, use the NFES catalog numbers indicated on the drawings or in the descriptions section of this booklet. The NFES numbers must appear on your resource order. One request number per kit.
4. The National Interagency Incident Communications Division Communications Duty Officer (NIICD-CDO) is available 24 hours per day year-round. NIICD-CDO personnel provide ordering and planning assistance and are an information resource for field communications personnel. At a minimum, communications personnel should check in with the NIICD-CDO upon arrival at incident to provide assignment location and phone number. All provided information is logged and updated daily.

NOTE: Those communications personnel not familiar with NIRSC equipment or who are not experienced are required to contact the NIICD-CDO for assistance. See NIRSC and NIICD ASSISTANCE NUMBERS (p. 4) for phone listings.

NEW FOR 2014

All NIRSC VHF-FM and UHF-FM frequencies will continue to be in narrowband configuration.

All NIRSC radio passwords will continue to be all zeros for programming.

Incidents will be assigned a tone by the NIICD-CDO. Incidents will be advised to tone the following:

- All VHF Repeaters (RX & TX)
- All Tactical Channels/Frequencies (RX & TX)

NFES# 4090 Conventional Solar Panel Kit:

This kit has been removed from the NIRSC inventory. NFES# 4080 Flexible Solar Panel Kit will continue to be issued.

NFES# 4244KV Logistics Radio Kit (King EPV UHF Radios)

This kit has been removed from the NIRSC inventory. We no longer operate or maintain King EPV radios.

NFES# 04330K Remote Kit (King Radios)

This kit has been removed from the NIRSC inventory. We no longer operate or maintain King EPV radios.

NFES# 04330M Remote Kit (Motorola Radios)

The NFES# for this kit has changed to 4330X2.

NFES# 4330MD Remote Kit (Midland Radios)

The new 4330MD Remote Kit will use Midland VHF radio (STP-105B-GF-L) and the Midland UHF radio (STP-404A-GF-L). Programming instructions for these radios are available in the back of the User's Guide. The existing remote version which utilizes Motorola radios will continue to be issued along with this new version.

NIICD and NIRSC ASSISTANCE NUMBERS

For assistance, the staff of the National Interagency Incident Communications Division (NIICD) and the National Incident Radio Support cache (NIRSC) may be reached at the numbers listed below.

CDO: Phone: (208) 387-5644 for incident related business only. All other calls to the NIICD should be directed to individual division numbers.

Toll Free: (877) 775-3451

FAX: (208) 387-5892

DIVISION NUMBERS:

Branch of Communications Maintenance: (208) 387-5856

Branch of Communications Operations: (208) 387-5947
(208) 387-5858
(208) 387-5826

Branch of Engineering and Development: (208) 387-5720

Branch of Infrared: (208) 387-5647

Branch of Avionics: (208) 387-5648

Branch of Technical Training: (208) 387-5857

NATIONAL AIR FREQUENCY GUIDELINES

These guidelines are intended to clarify the use of the National VHF-FM air frequencies and the VHF-AM (Victor) frequencies. Each is authorized for specific uses, even though they are listed as “national”.

AIR GUARD FREQUENCY - 168.6250

There is one common VHF-FM air guard frequency, **168.6250**, with a transmitter tone of **110.9 Hz**. It is found on the last channel of all NIRSC radios. This frequency is authorized for:

1. Emergency air-to-air initial communications.
2. Emergency ground-to-air communications.
3. Initial call, recall, and redirection when no other frequency is available.

NATIONAL FLIGHT FOLLOWING FREQUENCY - 168.6500

The National Flight Following Frequency is used to monitor interagency and contract aircraft. This frequency is used for flight following official aircraft flying point-to-point. It is not intended to be used during mission flights or incident operations. All dispatch centers/offices will monitor this frequency at all times. Transmitters and receivers on this frequency must be equipped with an encoder/decoder on **110.9 Hz**. This frequency is restricted to the following uses:

1. Flight following, dispatch, and/or re-direction of aircraft.
2. Air-to-ground and ground-to-air administrative traffic.
3. This frequency is NOT authorized for ground-to-ground traffic.

VHF-FM

In NIRSC radios, National VHF-FM air frequencies are located in GROUP 3. These frequencies have specific uses. Prior to use, you **MUST** contact the NIICD-CDO.

VHF-AM (Victor)

The use of VHF-AM frequencies is restricted to Air Operations only. **There are no exceptions.** All VHF-AM frequency assignments will only be authorized and assigned by the NIICD-CDO or COMC, if assigned. It is the responsibility of the Incident COML to verify, place requests, and ensure immediate release of frequency assignments upon completion of incident. All frequency assignments must go through the assigned COMC, and are ordered by the NIICD-CDO office from the FAA on an incident specific basis. It

is imperative to place requests early in order to have frequency assignments available for operational use in a timely manner.

NOTE: All aviation frequency orders will be placed through the dispatch ordering system to the NIICD-CDO.

Any frequency coordinated by the FAA for firefighting should only be used temporarily as the need arises and within the designated operational airspace. If the operational airspace changes due to fire expansion, the new requirement must be communicated to the NIFC Communications Duty Officer (CDO) and be properly coordinated with the FAA. As a result, the original frequency provided by the FAA may have to change to eliminate the possibility of interference to ATC or other firefighting efforts.

The typical service volume for a firefighting frequency is 20 NM and 5000 ft AGL.

FOREST HEALTH PROTECTION PROJECTS

The NIRSC supports the Forest Health Protection (FHP) projects with basic communications equipment. The NIRSC can be contacted with requirements or needs to customize an order to ensure it will be properly placed with the NIFC National Interagency Coordination Center (NICC).

All requests for equipment must be submitted through the local dispatch office and the Geographic Coordination Center, then to NIFC-NICC. Preliminary letters will be accepted by the NIRSC for informational purposes only, as will e-mail messages to **nifccdo@fs.fed.us**. **Equipment will not be issued against the letter or e-mail.** A re-source order, placed through the formal ordering process, is necessary.

The NIICD-CDO will assist FHP users with system design information, layout, and ordering, to meet the specific requirements of each particular project. Users are requested to contact the NIRSC at least 1-2 months in advance of a project(s) to allow for sufficient design, implementation, and ground shipping of equipment.

The following equipment is available from the NIRSC:

- 4381 VHF Radios (16/kit)
- 4312 Command Repeater/Link

4300 Ground Aircraft Base Kit

4330 Remote Kit

The above NFES items are the standard kits to support FHP projects. Other types of equipment are available if the project has unusual requirements. These other kits are described under the section **EQUIPMENT DESCRIPTIONS** in this catalog.

Radios are issued in kits of 16 each, but can be supplemented with individual radios if needed. It is preferred that radios be ordered in kit lots of 16. The radios will come with full, reusable clamshells which use AA batteries, plus one change of AA batteries for each radio. Please return the reusable clamshells with the kit. If you require additional batteries, above what is provided in the kit, place a resource order for NFES# 000030, AA batteries, or purchase the batteries locally.

The radios will be pre-programmed with NIRSC command/tactical frequencies. However, given sufficient time, the NIRSC will custom program frequencies in each channel.

The FHP equipment in the NIRSC must be shared with many FHP users. It is requested that required time frames for project use be kept to a minimum. When the project is completed, please expedite shipment of the equipment back to the NIRSC. The requesting user will pay for shipping to and from the NIRSC. There is a charge for equipment repair and parts. Costs for use of the equipment include replacement of batteries and lost kit accessories or capitalized equipment.

GENERAL INFORMATION ABOUT RADIO BATTERIES

When ordering batteries, round the order to the next full STD PK. (See Standard Pack --STD PK--entry in the Radio/Kit Battery Matrix or see listing in the GENERAL SECTION of the NFES Catalog under Battery, Radio.)

Alkaline batteries are not considered hazardous waste, except in California. These batteries should be disposed of at the incident.

All of the radio batteries utilized in the NIRSC are of alkaline technology. Alkaline batteries should have a shelf life of two years with only about 10% degradation in power. The batteries, utilized in NIICD equipment, can probably be stored, in our application, for four years, however the life will be noticeably shorter.

Repeater batteries should last 5-7 days under heavy usage. Radio batteries should easily last a shift (usually 12 hours).

Battery life with the clamshell-type battery holder will depend entirely upon the AA cells installed, type of radio used, whether the radio is in “scan” mode, and the power output setting on the radio. The new P25 radios drain batteries more quickly than the analog radios.

Using a voltmeter to determine the state of an alkaline battery can yield very inconsistent results. A battery that no longer works on a repeater and has not had a load placed on it for a few days may read “good” on a voltmeter (a voltmeter does not apply the proper current load). To correctly test the batteries in a repeater with a voltmeter, put the repeater in transmit condition to apply a load to the batteries.

UHF/VHF Repeaters -- Replace batteries if the voltage is at 10.5 volts with the transmitter in operation. Starting voltage is about 15 volts with the transmitter operating.

RADIOS -- The transmit LED is the best indicator of battery life. If the light holds bright for 3 seconds while transmitting on high power, the battery should be in good shape. Don't rely on the battery gauge on any radio since they are designed for use with rechargeable batteries.

RADIO/KIT BATTERY MATRIX

BATTERIES

NFES#	000030	000033	001023	001241
VOLTAGES	1.5V (AA)	1.5V (D)	7.5V	9V (Transistor)
STD PK	24/PG	12/PG	4/BX	24/BX

RADIO BATTERY REQUIREMENTS

NOTE: Numbers reflect batteries required per clamshell.

ICOM (clam) IC-A3	10			
KING (DPHX) 9 Cell	9			
THALES RACAL	10			
XTS-2500/5000, DATRON GUARDIAN 25	12			
MIDLAND, ICOM IC-A6	6			

KIT BATTERY REQUIREMENTS

NOTE: Numbers reflect batteries required per equipment unit.

REPEATERS & LINKS 004248, 004281, 004312			4	
GRND A/C 004300, 004370	40		4	
REMOTE 004330			4	
P.A. 004410	4	48		4

ALL RADIO BATTERY HOLDERS (CLAMSHELLS) MUST BE RETURNED TO NIRSC.

WHERE LEGAL, DISPOSE OF USED BATTERIES AT THE INCIDENT TO SAVE SHIPPING COSTS.

REMOVE BATTERY STRAPS FROM BATTERIES PRIOR TO DISPOSAL AND RETURN WITH KIT.

COMMUNICATIONS COORDINATOR (COMC)

Duties and Responsibilities

1. Manage the allocation of communication resources at the Geographic Area level. This includes communications equipment, communications personnel, and associated supplies. The COMC reports to the NIICD-CDO and directly supports the assigned geographic area. The COMC will not be assigned to specific incidents or to an Area Command Team. Situations may occur when communications coordination is required between multiple Geographic Areas. Under these circumstances, a COMC may be assigned to a NICC Resource Order to provide overall coordination and support to COMCs assigned to the affected Geographic Areas.

2. Manages the frequency resources for all incidents under assigned jurisdiction. This includes all frequencies for ground, tactical, command, logistics, and air operations.

NOTE: During complex situations, the COMC will request additional qualified personnel to be assigned as field COMCs and roving COMTs. Any situation involving complex air operations will require that the COMC request an Aviation Frequency Coordinator (COMC or THSP) specifically for air operations.

3. Maintain an accurate inventory of all communications equipment assigned to incidents under their control.

4. Keep current on the availability of communications resources for future Geographic Area and National requirements. The COMC should be current on procedures needed to obtain such resources.

5. Provide problem-solving recommendations and advice on communications issues to the respective Geographic Area Coordinators, the Area Command Teams, and/or to Incident Management Teams within a complex or single incident. National, as well as Geographic Area priorities, will be considered when making recommendations and/or providing advice.

6. Assist incidents with communication system design and in obtaining specialized communications equipment.

NATIONAL INCIDENT RADIO SUPPORT CACHE

The information outlined below must be considered when ordering and using NIRSC equipment. All NIRSC frequencies, both UHF and VHF, must be cleared for use BEFORE shipment is made. Frequencies are cleared by the NIICD-CDO.

NIRSC STARTER SYSTEMS (NFES #4390):

A Starter System consists of 10 boxes of assorted equipment, and is ordered as a system. A Starter System contains 1 VHF Repeater/Link and 1 UHF Repeater. Generally the frequency assignments for these repeaters will be one of the standard VHF Command assignments (C1 through C6) and one of the standard UHF assignments (L1 through L7).

When ordering a Starter System, appropriate frequency assignments must be obtained by contacting the NIICD-CDO or, when assigned, the appropriate COMC. The Resource Order will indicate which frequency pair has been assigned as in the following example: C4/L4. When possible, please provide a latitude and longitude for each repeater set up in the field. Starter Systems may not always contain 10 kits and 7 sets of masts (due to equipment availability).

NOTE: In areas with extreme frequency congestion, the NIICD-CDO or COMC will advise incidents/COMLs of available frequencies.

LOGISTICS SYSTEM:

A Logistics System is a part of every Starter System. It consists of one (1) UHF Logistics Repeater and one (1) kit of 16 UHF Logistics Radios. If you do not need logistics equipment, you MUST order command equipment by individual catalog numbers.

ADDITIONAL REPEATER:

When needed for an incident, the request will be evaluated and supported with additional repeaters, once the COML has provided the CDO or COMC, if assigned, with a system design and verified the need. Order as a single resource item:

Command Repeater/Link - NFES #4312; Logistics Repeater - NFES #4248.

ANTENNA MAST (NFES# 4305)

The following kits come with at least one (1) set of three (3) masts:

- 4248 Logistics Repeater
- 4281 Crossband Link Kit (2 sets)
- 4300 Ground VHF-AM Base Station
- 4312 CMD Repeater/Link (2 sets)
- 4330 Remote
- 4370 Aircraft Link (2 sets)
- 4390 Starter System (7 sets)
- 4660 Airbase Kit (2 sets)

The NIRSC tries to keep a good supply of these masts on hand to support our kits. However, many are not returned from incidents and they must be replaced. Shipping them individually is not recommended. It is highly recommended that masts be returned at the same time as their associated kits.

Do not return masts that are bent, squashed, badly out-of-round, or otherwise not readily reusable.

USER’S GUIDE (NFES #0968):

The User’s Guide is located in all Command Repeater/Link Kits (NFES #4312) and can also be ordered through the Great Basin Warehouse (GBK).

COMMUNICATIONS DUTY OFFICER:

The NIICD-CDO, as much as possible, will maintain compatibility of new equipment orders with equipment already on an incident.

DEMOB:

All cache equipment must be returned to the NIRSC after each incident for rework.

FIELD ASSISTANCE:

The NIICD-CDO will coordinate field assistance for incidents. The NIICD-CDO can be contacted at **(208) 387-5644** or through our Toll-Free number **(877) 775-3451**.

NIRSC EQUIPMENT DESCRIPTIONS

004080 Flexible Solar Panel Kit

The kit contains a 60 Watt flexible solar panel, and a 12 Volt 35 Amp-Hr sealed lead acid battery. The system should be able to power a repeater indefinitely provided the solar panel is illuminated with full sun most of the day. In the event there is no sun, the battery will give approximately two days backup power (for a repeater under moderate use). For greater energy reserves, an additional battery can be purchased at the incident and connected to the system (a cable is included in the kit for doing this). The backup battery must be a deep cycle 12V sealed lead acid (preferably gel cell or AGM) of the largest capacity that can be safely maneuvered (batteries are heavy!!). A fully charged 12 Volt 75 Amp-Hr battery should last at least four days and weighs 50lbs. Do not transport a sealed lead acid battery unless it is strapped down and unable to move and the terminals are covered to prevent a short circuit.

004240 Airbase Accessories Kit

The NFES 4240 Airbase Accessories kit is for aircraft communications by ground personnel at airports and helibases. This kit provides a means to communicate with aircraft in noisy environments. The kit comes with five (5) sets of handheld Icom VHF-AM radios, headsets, and helmet adapters to connect a headset/helmet to the Icom radio.

004244 Logistics Radio Kit

Contains 16 UHF radios for use by incident support personnel, i.e. Plans, Logistics, and Finance. The radios can operate independently or in conjunction with UHF Repeater Kit NFES# 4248.

The radios are programmed with NIRSC UHF Frequencies, including all simplex and repeater pair frequencies. Frequency charts are provided in the kit, as well as T-Cards for radio checkout. Boxes are labeled on the outside to indicate the type of radios contained within, according to the following convention:

4244MD - Midland

4244X2 - Motorola XTS2500

ALL frequencies must be cleared for use BEFORE shipment. Call NIICD-CDO for clearance.

When placing the order, do not specify the manufacture using the subkit numbers. Check with the CDO or COMC.

The following frequency scheme indicates the channel on which the repeater frequencies will be found:

REPEATER	RADIO CHANNEL
L1 Logistics Repeater	Group 1 Ch 2
L2 Logistics Repeater	Group 1 Ch 4
L3 Logistics Repeater	Group 1 Ch 6
L4 Logistics Repeater	Group 1 Ch 8
L5 Logistics Repeater	Group 1 Ch 10
L6 Logistics Repeater	Group 1 Ch 12
L7 Logistics Repeater	Group 1 Ch 14

4244X2 Motorola XTS2500

These radios have 15 groups of 16 channels. Groups are accessed by turning the radio on and pressing the ZONE button. To select the desired group, either scroll through using the right or left arrow, or type the Group Number on the numerical keypad and press Home.

Refer to the kit frequency charts and diagrams for additional information.

4244MD Midland STP404A-G

These radios have 15 groups of 16 channels. Groups are accessed by turning the radio on and pressing MENU. Scroll to CHANNEL PARAMETERS and press SELECT, scroll to ZONES press SELECT, enter the zone number and press OK.

Refer to frequency charts and diagrams for additional information.

004248 Logistics Repeater

The Logistics Repeater must be used in conjunction with a Logistics Radio Kit, NFES# 4244, or the Remote Kit., NFES #4330 with an appropriate UHF Radio installed in the remote. Additionally, the Logistics Repeater Kit, NFES #4248 is to be used to link two or more Command Repeater/Links, NFES #4312 together. It is a battery operated portable repeater kit. (See Drawings #6 and #7.)

Uses include:

- ICP to Expanded Dispatch Center
- Staging Area to ICP

- Helibase to ICP
- Ground Support Unit
- Outlying service functions to the Incident Communications center (ICC)
- Non-fire related incidents can utilize these kits in command/tactical situations.

•Helispots to ICP

Resource Orders should indicate which frequency is needed, (L1, L2, etc)

NIRSC frequencies must be cleared for use by the NIICD-CDO.

Logistics Repeaters have the following frequency designators:

REPEATER	RADIO CHANNEL
L1 Logistics Repeater	Group 1 Ch 2
L2 Logistics Repeater	Group 1 Ch 4
L3 Logistics Repeater	Group 1 Ch 6
L4 Logistics Repeater	Group 1 Ch 8
L5 Logistics Repeater	Group 1 Ch 10
L6 Logistics Repeater	Group 1 Ch 12
L7 Logistics Repeater	Group 1 Ch 14

004250 MAFFS Tactical Radio Kit

The NFES# 4250 MAFFS Tactical Radio Kit is a mini version of the NFES# 4381KD Command Radio Kit. The MAFFS Tactical Radio Kit contains six (6) handheld King VHF-FM DPHX radios.

004281 Crossband Link Kit

The Crossband Link Kit is designed to provide support for special operations on an incident that requires UHF frequency to VHF frequency conversion. This unit is in a Daniels rack with both a UHF transmitter and receiver and a VHF transmitter and receiver and can be programmed with special frequencies. Please contact the NIICD-CDO for ordering, design, and frequency coordination. This unit is NOT a repeater.

004300 Ground VHF-AM Base Station Kit

The Ground VHF-AM Base Station Kit is a portable 760-channel VHF-AM base station. This kit cannot be linked. Kits are used primarily as a base station to contact aircraft on Forest health Protection projects and on incidents. Base stations will transmit 7 watts, are capable of 10 pre-set channels, will scan, and operate using 115 VAC or 12 VDC through an automobile accessory plug-in. Four (4) handheld ICOM VHF-AM radios are included, as well as T-cards for radio check-out. If this kit is to be

used as an FAA control tower, the NFES #4300 order **MUST** be placed by an incident COML.

004312 Command Repeater/Link

Stand-Alone Repeater Configuration

The Command Repeater/Link must be used in conjunction with a Command/Tactical Radio Kit, NFES #4381. The kit is a battery-operated portable VHF repeater/UHF link designed for mountainous terrain and/or extended area coverage applicable to incident operational requirements. NIRSC Command Repeater/Links will link to other VHF/UHF Repeaters using the UHF Link Modules included in the NFES #4312 kit. Repeater/links should be ordered by NFES #. NIRSC frequencies must be cleared for use **BEFORE** shipment is made. Call the NIICD-CDO at **(208) 387-5644** or our Toll Free number **(877) 775-3451** for clearance.

All Command Repeater/Links are single channel. If an additional repeater frequency is necessary, a separate Command Repeater/Link must be ordered. Orders will be filled based on priority need. Frequencies must be coordinated to reduce interference problems. All repeater/links are capable of being tone-controlled (RX & TX). A tone-controlled repeater/link will operate as a normal repeater/link (carrier squelch) when not in tone mode. Call the NIICD-CDO for more information on tone-control applications. The unit can be operated from the supplied alkaline batteries at 15 VDC or from an external 12 VDC power source (i.e. heavy duty car battery, DC power supply, or solar panels). If a 12 VDC power supply is used, it should have a minimum 5 Amp continuous duty capability.

NIRSC VHF Channel Plan:

RADIO	RADIO
ALL	ALL
Cmd Repeater C1 Group 1 Ch 6	Cmd Repeater C5 Group 2 Ch 6
Cmd Repeater C2 Group 1 Ch 8	Cmd Repeater C6 Group 2 Ch 8
Cmd Repeater C3 Group 1 Ch 10	
Cmd Repeater C4 Group 1 Ch 12	

- 1. If a special repeater/link is being sent to your incident the COML will need to program the radios with the frequencies.**
- 2. Verify that the UHF Modules are in the “OFF” position when used as a stand-alone Command Repeater.**

Repeater and Link Configuration:

The UHF Link is used to link UHF-FM and VHF-FM together to extend area coverage for large incidents.

Uses include:

Linking two (2) or more VHF-FM Command Repeater/Links (NFES #4312), using NIRSC frequencies.

Linking one (1) or more VHF-FM Command Repeater/Links in conjunction with a UHF Repeater (NFES #4248), to establish communications with the Incident Operations Area back to an ICP located in difficult terrain.

The Command Repeater/Link (NFES #4312) contains two (2) UHF Modules (1-RX & 1-TX) that are permanently installed into the Daniels Repeater Backplane along with two (2) RF cables that connect the modules to the antenna relay. A UHF Whip Antenna and a UHF Yagi (directional) Antenna with 20 foot RF cables are included in the Command Repeater/Link (NFES #4312) shipping container to accommodate all installation options.

004320 COML Kit

This kit assists the COML with cloning of handheld radios. It consists of one radio, clamshell and cloning cable for every type of handheld available in the cache. This kit does not come with antennas, holsters or any other accessories. These radios are not to be swapped out for broken kit radios. The contents of this kit is the responsibility of the COML.

04330K, 04330X2, & 04330MD Remote Kit

The Remote Kit can be used with VHF-FM (tactical) and UHF-FM (logistics) radios. Use of this kit, in conjunction with NIRSC radios, allows a remote base station to be installed up to one-half of a mile away from the ICP, camp, helibase, etc.

The radio, chassis, and battery are enclosed in a steel box which is removable from the shipping container. This allows for placement of the box at the base of the antenna while running only a wire pair to the desk set location. VHF and UHF Radios are included in the chassis box, eliminating the need for multiple interface cables. This kit will contain either Midland or Motorola XTS 2500/5000 radios.

004370 Ground Aircraft Radio/Link Kit

This Daniels kit is a portable, battery operated, all-in-one, VHF-AM aircraft base station and UHF-FM Link. All aircraft kits operate as a base station or as a cross-band link. There are two (2) sets of antennas (VHF-FM and UHF-FM) for use in the link configuration. All kits include four (4) handheld ICOM VHF-AM radios.

Due to airline weight restrictions for shipping, this kit will be shipped in two (2) boxes. Box one will contain the radio equipment and antennas. Box two will contain the remaining accessories and will be listed on a separate inventory sheet.

The Ground Aircraft Radio/Link uses a 12 VDC power source. The unit can be operated from the supplied alkaline batteries at 15 VDC, or from an external 12 VDC power source (i.e. heavy duty car battery, DC power supply, or solar panels). If a 12 VDC power supply is used, it should have a minimum 5 Amp continuous duty capability. Additional ICOM Radios can be ordered to supplement a full kit. Call the NIICD-CDO for ordering assistance. Supplies are limited, therefore, orders will be filled on a priority basis.

4381XX Command Radio Kit

This VHF-FM Radio Kit is designed for use in command and tactical operations of an incident. Each kit contains sixteen (16) handheld radios. All radios are configured with all tactical, command, and National Air Frequencies. The radios in each kit are of the same manufacturer and model.

Frequency charts are included in the kit, as well as T-cards for radio checkout. Boxes are labeled on the outside to indicate the type of radios contained within, according to the following convention:

4381DA - Datron Guardian 25

4381KD - King DPH

4381RL - Racal

NIRSC frequencies must be cleared for use **BEFORE** shipment is made. Call the NIICD-CDO for clearance.

The following table lists the repeater frequency designations with the corresponding radio channel assignments.

VHF-FM RADIO	VHF-FM RADIO
All Makes	All Makes
Cmd Repeater C1 Group 1 Ch 6	Cmd Repeater C5 Group 2 Ch 6
Cmd Repeater C2 Group 1 Ch 8	Cmd Repeater C6 Group 2 Ch 8
Cmd Repeater C3 Group 1 Ch 10	
Cmd Repeater C4 Group 1 Ch 12	

Command/Tac radios are programmed by the NIRSC to be compatible with each system in which they are included. The Racal and Datron have 256 channels. The King DPH has 400 channels. The Racal, Datron, and King DPH can also be operated in digital mode.

The King DPH Radios have 25 groups of 16 channels. The Racal and Datron Guardian 25 have 16 groups of 16 channels.

The NIRSC recommends that users limit the number of scanned channels to three (3) and to use the HIGH POWER TX mode sparingly. These options increase the load on the batteries which will rapidly reduce battery life.

1. All clamshells included in the radio kits must be returned.

2. The NIRSC King Radio Kits use 9-cell clamshells only! Do NOT use more than 9 cells!

004390 Starter System - Command/Logistics Radio System

The Starter System is designed to be the initial system to support basic incident communications requirements. The system supplies equipment which will establish immediate communications for command, tactical, logistical, and ground-to-air needs. The Starter System consists of:

- | | |
|---|---|
| 1- CMD RPTR/Link (NFES# 4312) | 1- Logistics Repeater (NFES# 4248) |
| 3- CMD/TAC Radio Kits (NFES# 4381)
(total of 48 radios) | 1- Logistics Radio Kit (NFES# 4244)
(total of 16 radios) |
| 1- Ground Aircraft Radio/Link Kit (NFES# 4370)
(w/ 4 ea ICOM Radios) | 2- Remote Kits (NFES# 4330) |

Logistics capability is sent with all Starter Systems, (Logistics Repeater, Logistics Radio Kit). Use of NIRSC frequencies must be cleared by the NIICD-CDO prior to shipment. The NIICD-CDO will assign frequencies if not indicated on the Resource Order.

A NIRSC User's Guide (NFES #0968) is included in each Command Repeater (NFES #4312).

In the case of a multi-branch or multi-incident complex, if several Starter Systems have been ordered, or if communications personnel are not familiar with NIRSC equipment, the NIICD-CDO must be contacted for ordering, system planning, and frequency coordination assistance.

NIICD-CDO Contact Numbers:

CDO Phone: (208) 387-5644

Toll Free: (877) 775-3451

004410 Public Address Kit

The Public Address Kit is primarily used at the ICP or in staging areas which house large numbers of personnel. It allows for broadcasting information or paging from a central point. The kits can be powered by either AC or batteries.

4420LS & 4420NT MAFFS Printer Network Kit

MAFFS Printer Kits are for MAFFS activations and trainings. This kit may be used on other incidents but they will be the exception and they will not impact possible MAFFS use. The MAFFS Printer Network Kit comes in two boxes: Network and Accessories. Both boxes are required for system operation. Administrative access is required to load the printer's drivers on agency laptops. ALL LAPTOPS THAT WILL UTILIZE THE KIT'S PRINTER MUST ARRIVE AT THE INCIDENT WITH ADMINISTRATIVE ACCESS PRESET. Granting administrative access in the field is very difficult and unlikely to occur.

This kit is designed to provide a common wireless printer and internet access for incidents with personnel from various agencies. Direct connection to the router allows printer use and internet access for those computers lacking wireless capability. The kit comes with a HP printer/scanner/fax, router, bridge, and Verizon MiFi. It also comes with several Ethernet cables, a surge suppressor, spare ink cartridges, two reams of paper and a USB drive.

004499 Air Attack Kit

The Air Attack Kit is built to supplement communications in contracted fixed-wing aircraft for missions ranging from reconnaissance to complex air attack. This kit can fit between the pilot and copilot seats in some aircraft (i.e. Cessna) and slightly behind front seats in other aircraft. This kit creates an interface between the aircraft's exist-

ing audio system/radios and the Air Attack Kit radios. All kits have the capability to operate two (2) Technisonic Industries radios. Each kit will have two (2) TDFM-136 radios.

The NFES #4499 Air Attack Kit has a Dual Audio Control (COM/FM1/FM2/AUX1/AUX2/SC) for the pilot and copilot/ATGS, connectors for two (2) AUX-FM-type portable radio adapters, and two (2) passenger headset adapters. Kit headset jacks are 600-ohm impedance using standard audio and mic-type connectors. The pilot and copilot/ATGS utilize case mounted headsets. Both passengers can operate all radios through the copilot/ATGS's transmitter selector. The "SC" position is simulcast transmissions on both COM (aircraft VHF-AM) and FM1. Each kit includes two (2) passenger headset adapters, two (2) PT-300 PTT adapters, two (2) BNC barrel connectors (for AUX-FM antenna connections), and instructions. Two (2) externally mounted VHF-FM antennas are also required.

This kit will ONLY be installed in aircraft meeting National Air Tactical/Reconnaissance Standards and passing an avionics inspection by a qualified Forest Service/AMD Avionics Inspector.

The NFES #4499 Air Attack Kit AUX-FM portable radio adapter connectors accept the same adapter connections used in all helicopters. Contact the NIICD-CDO for availability of King & Racal AUX-FM adapter cables.

004604 Air Attack Training Kit

The Air Attack Training kit contains the necessary equipment to operate an Air Attack (NFES 4499) in a classroom environment. There is a 12 VDC power supply plus adapters and cables to connect an Icom A3 or A6 portable radio, to simulate an aircraft VHF-AM transceiver, and two headsets. The kit can be connected to two antenna dummy loads (student radio programming training) or two small antennas (student simulations requiring transmissions) depending on classroom needs. The kit also includes a BK/King GPH/DPH headset adapter for sandbox exercises.

004660 Airbase Kit

The NFES 4660 Airbase Kit is for MAFFS activations and temporary tanker bases. This kit provides a means to communicate with aircraft in noisy environments. It comes with a portable VHF-AM/VHF-FM base station radio, 10 handheld Icom VHF-AM radios, and eight (8) sets of headsets, helmet adapters, and adapters to connect a headset/helmet to the Icom radio. The VHF-FM base station can monitor both a main frequency and Air Guard. The base station radio is configured to operate on 115 VAC but, when requested, 12 VDC or 24 VDC power cables can be included for use with a deep cycle automotive/marine battery (Not supplied. Will need to be purchased lo-

cally). When additional handheld VHF-AM radios are needed, order the NFES# 4240 Airbase Accessories Kit.

004670 Satellite Phone Kit

NIRSC has available a limited supply of Motorola Satellite Phones that operate on the Iridium network. These portable handsets run on rechargeable batteries and AC/DC chargers are included.

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GENERAL

COMMUNICATIONS

CONDITIONS & SOLUTIONS

GENERAL COMMUNICATIONS CONDITIONS AND SOLUTIONS

CONDITIONS	EQUIPMENT SOLUTIONS	NFES#	DWG#
All incident area is not line-of-sight	CMD/TAC Radio Kit CMD Repeater/Link Remote Kit Use of a repeater generally allows more flexibility and gives wider coverage. Remote kit will allow ICP/ICC radio to be installed at a location up to one (1) mile away, where line-of-sight exists, but be controlled from the ICP/ICC through a remote deskset.	4381 4312 4330	1
Logistics points are not line-of-sight	Logistics Radio Kit Logistics Repeater Kit Remote Kit To be used to tie logistics points together if not line-of-sight.	4244 4248 4330	2
Need to backbone CMD Repeater to reach ICP/ICC due to obstructing terrain	CMD Repeater/Link Logistics Repeater Remote Kit Logistics UHF and CMD VHF are not normally linked. However, terrain obstructions may dictate linking a CMD Repeater via a UHF Link to a Logistics Repeater for the incident operations area to reach the ICP/ICC.	4312 4248 4330	3
Need to link two ends of an incident which has considerable linear distance or terrain obstructions	Two CMD Repeater/Links Remote Kit UHF Links are hard-linked to CMD Repeaters which are located to cover the far ends of the incident. Repeaters are linked via a designated UHF frequency.	4312 4330	4
Need to link more than two (2) CMD Repeaters to cover large incidents or multiple small incidents	Three or more CMD RPTs/Links Remote Kit UHF Links utilize one (1) simplex frequency which allows linking of all CMD Repeaters. All UHF Links MUST be line-of-sight with each other. Each CMD Repeater is on a different frequency. Call NIICD-CDO for assistance.	4312 4330	5

GENERAL COMMUNICATIONS CONDITIONS AND SOLUTIONS

CONDITIONS	EQUIPMENT SOLUTIONS	NFES#	DWG#
Need to link two ends of an incident over long distance OR neither CMD Repeater can reach ICP/ICC	Two CMD Repeater/Links Logistics Repeater Remote Kit UHF Repeater links both linked CMD Repeaters to the ICP/ICC or UHF Repeater is needed to link both CMD Repeaters due to terrain and distance.	4312 4248 4330	6
Need to link more than two (2) CMD Repeater/Links. All UHF Links are not line-of-sight with each other. Used to link a large incident or multiple small incidents.	Three or more CMD RPTs/Links Logistics Repeater Remote Kit UHF Repeater is hub which links all CMD Repeaters. All UHF Links MUST be line-of-sight with the UHF Repeater. ICP/ICC can be tied in through one of the CMD Repeaters, or the UHF Repeater. Each CMD Repeater is on a different frequency. Call the NIICD-CDO for assistance.	4312 4248 4330	7
New, growing incident needs communications	Starter System Contains sufficient equipment to initially supply a new incident which has potential for increasing in size. System includes: CMD Repeater/Link (1 ea) CMD/TAC Radio Kits (3 ea) Ground A/C Radio/Link Kit (1 ea) Remote Kit (2 ea) (1 ea when NIRSC is low on equipment) Logistics Repeater (1 ea) Logistics Radio Kit (1 ea)	4390	

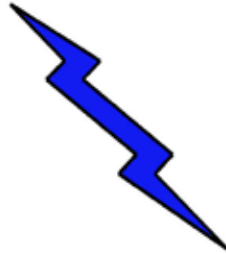
COMMAND/TACTICAL RADIO KIT AND COMMAND REPEATER/LINK w/REMOTE KIT

EQUIPMENT NEEDED:

- 1 EA. 4381 CMD/TAC RADIO KIT
- 1 EA. 4312 COMMAND REPEATER/LINK
- 1 EA. 4330 REMOTE KIT



COMMAND REPEATER/LINK



INCIDENT OPERATIONS AREA

REPEATER REQUIRED BECAUSE LINE-OF-SIGHT
DOES NOT EXIST OVER ENTIRE INCIDENT AREA.

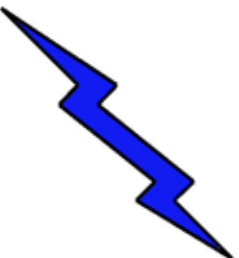


ICP/ICC OR
OTHER INCIDENT
OPERATIONS AREA

DRAWING 1

ONE-HOP LOGISTICS REPEATER WITH LOGISTICS RADIO KIT

NOTE: SHOULD SPECIFY REPEATER FREQUENCIES WHEN ORDERING.



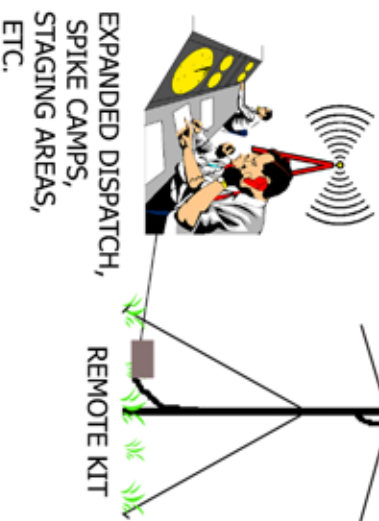
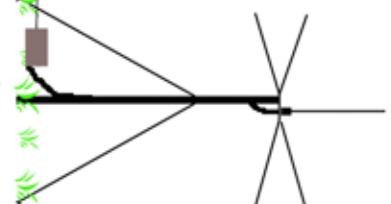
LOGISTICS REPEATER

EQUIPMENT NEEDED:
 1 EA. 4244 LOGISTICS RADIO KIT
 1 EA. 4248 LOGISTICS REPEATER
 2 EA. 4330 REMOTE KIT



ICP/ICC

REMOTE KIT

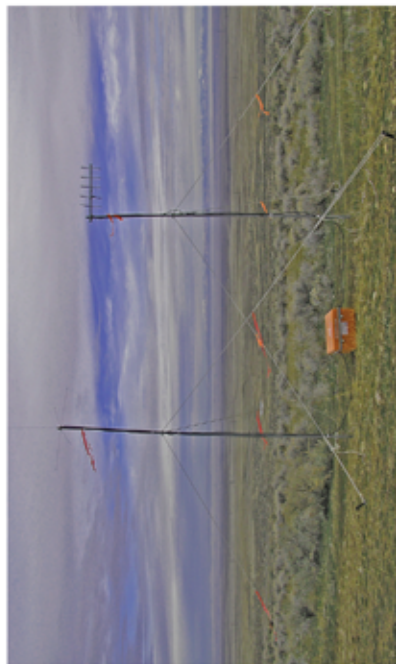


EXPANDED DISPATCH,
 SPIKE CAMPS,
 STAGING AREAS,
 ETC.

REPEATER REQUIRED BECAUSE LINE-OF-SIGHT DOES NOT EXIST BETWEEN LOCATIONS.

DRAWING 2

INCIDENT OPERATIONS AREA TO ICP/ICC BACKBONE



COMMAND REPEATER/LINK



LOGISTICS REPEATER

EQUIPMENT NEEDED:

- 1 EA. 4248 LOGISTICS REPEATER
- 1 EA. 4312 COMMAND REPEATER/LINK
- 1 EA. 4330 REMOTE KIT



INCIDENT OPERATIONS AREA

USE WHEN TERRAIN LIMITS LINE-OF-SIGHT ACCESS TO THE
COMMAND REPEATER FROM THE ICP/ICC, AND INSTALLATION
OF A REMOTE KIT TO GAIN LINE-OF-SIGHT IS NOT POSSIBLE.

NOTE: FREQUENCY COORDINATION WITH THE COMC OR CDO IS
REQUIRED.



REMOTE KIT



ICP/ICC

DRAWING 3

LARGE INCIDENT OPERATIONS AREA LINKING SYSTEM



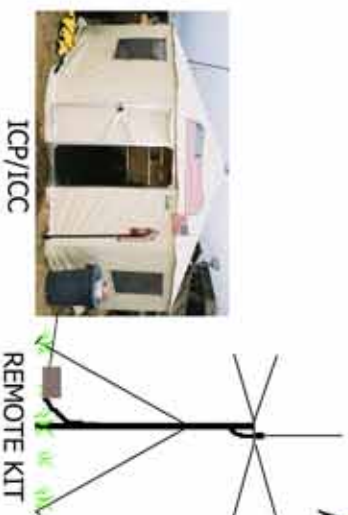
COMMAND REPEATER/LINK



INCIDENT OPERATIONS AREA



COMMAND REPEATER/LINK



ICP/ICC

REMOTE KIT



INCIDENT OPERATIONS AREA

A SYSTEM OF REPEATERS AND LINKS THAT EXTENDS COMMUNICATIONS COVERAGE FOR AN INCIDENT WHICH HAS A LARGE OPERATIONAL AREA. FREQUENCY COORDINATION WITH COMC OR CDO REQUIRED.

NOTE: THIS SYSTEM LINKS TWO (2) DIFFERENT COMMAND FREQUENCIES.

EQUIPMENT NEEDED:

- 2 EA. 4312 COMMAND REPEATER/LINK
- 1 EA. 4330 REMOTE KIT

DRAWING 4

EXTENDED OR MULTIPLE INCIDENT OPERATIONS AREA LINKING SYSTEM



COMMAND REPEATER/LINK



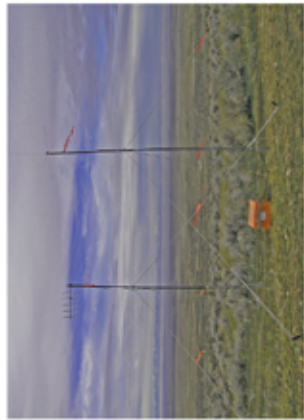
VHF



INCIDENT OPERATIONS AREA



UHF



COMMAND REPEATER/LINK



VHF



UHF



UHF



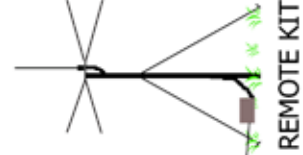
INCIDENT OPERATIONS AREA



VHF



VHF



REMOTE KIT



ICP/ICC

EQUIPMENT NEEDED:

- 2 EA. 4312 COMMAND REPEATER/LINKS
- 1 EA. 4330 REMOTE KIT

INCIDENT OPERATIONS AREA



A SERIES OF REPEATERS AND LINKS THAT EXTENDS COMMUNICATIONS COVERAGE FOR MULTIPLE SMALL INCIDENTS OR FOR AN INCIDENT WHICH HAS AN EXTENDED OPERATIONAL AREA. COMMUNICATIONS WITH THE ICP/ICC IS THROUGH ONE OF THE COMMAND REPEATERS. A SIMPLEX UHF FREQUENCY LINKS THE SYSTEM. ADDITIONAL REPEATERS AND LINKS CAN BE ADDED AS LONG AS THEY ARE LINE-OF-SIGHT WITH ALL OTHER UHF LINKS. FREQUENCY COORDINATION WITH COMC OR CDO IS REQUIRED.

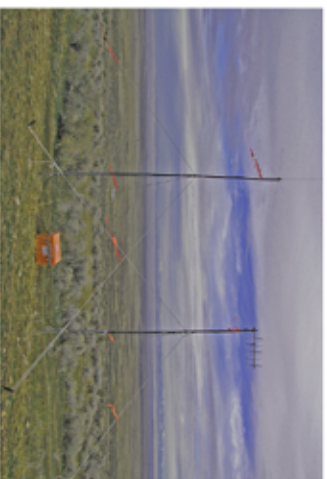
NOTE: EACH COMMAND REPEATER IS A DIFFERENT FREQUENCY.

DRAWING 5

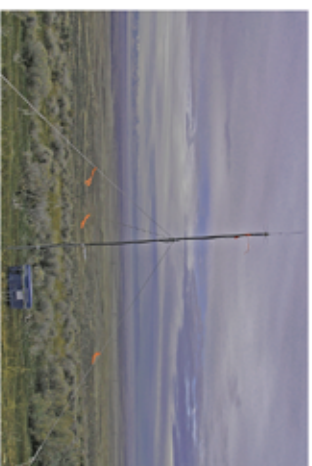
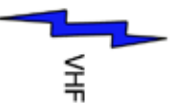
EXTENDED INCIDENT OPERATIONS AREA LINKING SYSTEM

EQUIPMENT NEEDED:

- 2 EA. 4312 COMMAND REPEATER/LINK
- 1 EA. 4330 REMOTE KIT
- 1 EA. 4248 LOGISTICS REPEATER



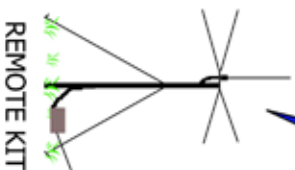
COMMAND REPEATER/LINK



LOGISTICS REPEATER



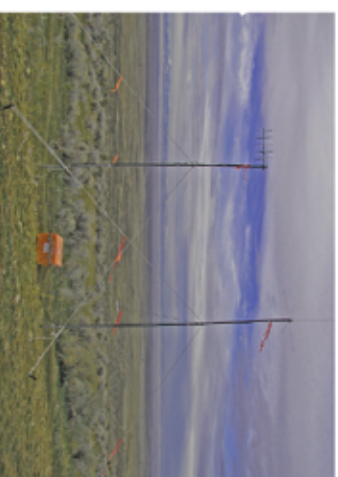
OR



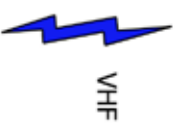
REMOTE KIT



ICP/ICC



COMMAND REPEATER/LINK



A SERIES OF REPEATERS AND LINKS THAT EXTENDS COMMUNICATIONS COVERAGE FOR AN INCIDENT WHICH HAS AN EXTENDED OPERATIONAL AREA, OR WHERE NEITHER COMMAND REPEATER IS LINE-OF-SIGHT TO THE ICP/ICC, BUT CAN BE LINKED USING A LOGISTICS REPEATER AT AN INTERMEDIATE SITE. FREQUENCY COORDINATION WITH COMC OR CDO IS REQUIRED.

NOTE: THIS SYSTEM LINKS TWO (2) DIFFERENT COMMAND FREQUENCIES AND ONE (1) LOGISTICS FREQUENCY.



INCIDENT OPERATIONS AREA



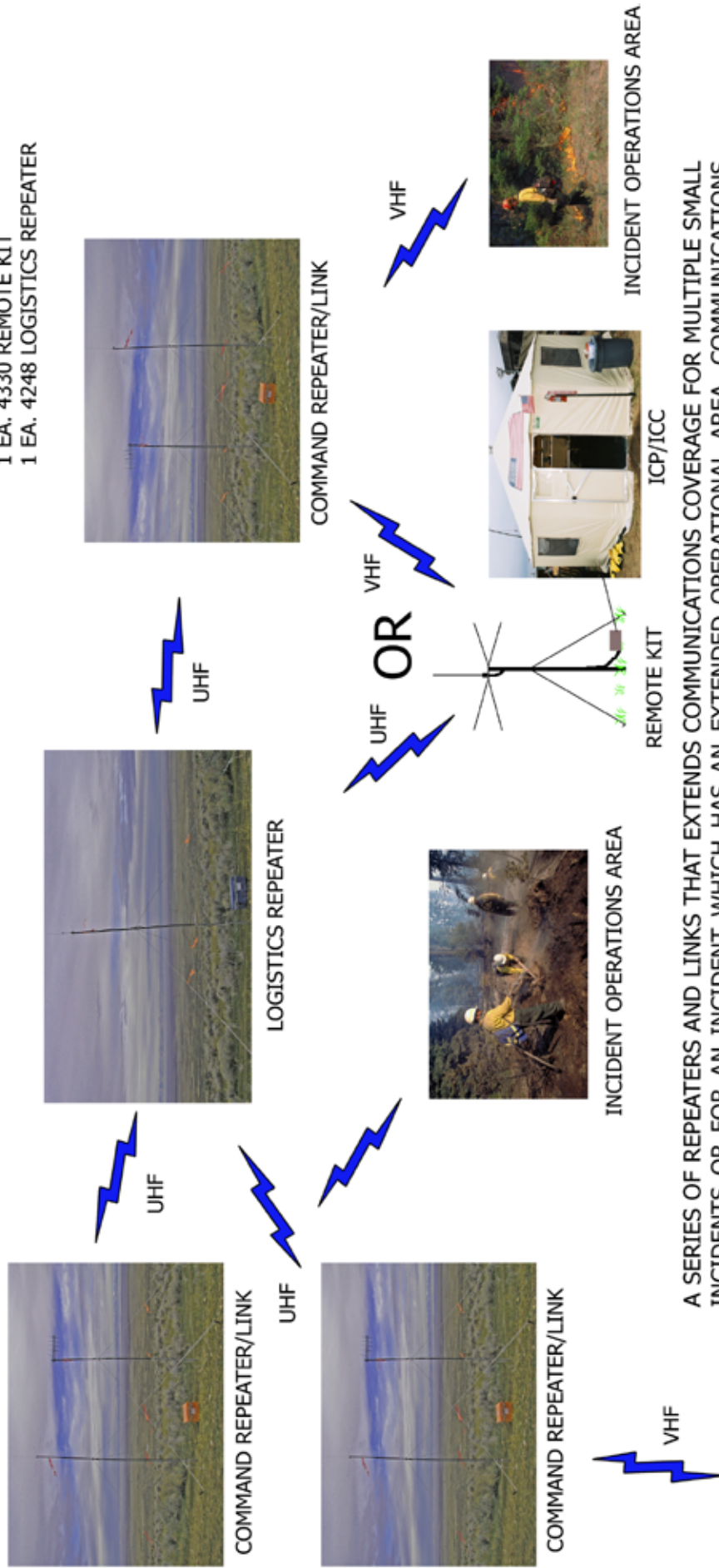
INCIDENT OPERATIONS AREA

DRAWING 6

EXTENDED OR MULTIPLE INCIDENT OPERATIONS AREA LINKING SYSTEM

EQUIPMENT NEEDED:

- 3 EA. 4312 COMMAND REPEATER/LINK
- 1 EA. 4330 REMOTE KIT
- 1 EA. 4248 LOGISTICS REPEATER



A SERIES OF REPEATERS AND LINKS THAT EXTENDS COMMUNICATIONS COVERAGE FOR MULTIPLE SMALL INCIDENTS OR FOR AN INCIDENT WHICH HAS AN EXTENDED OPERATIONAL AREA. COMMUNICATIONS WITH THE ICP/ICC MAY BE THROUGH ONE OF THE COMMAND REPEATERS OR THROUGH THE LOGISTICS REPEATER WHICH LINKS THE ENTIRE SYSTEM. ADDITIONAL REPEATERS AND LINKS CAN BE ADDED, AS LONG AS THEY ARE LINE-OF-SIGHT WITH THE LOGISTICS REPEATER. FREQUENCY COORDINATION WITH THE COMC OR CDO IS REQUIRED.

NOTE: EACH COMMAND REPEATER IS A DIFFERENT FREQUENCY.

DRAWING 7

AVIATION

COMMUNICATIONS

CONDITIONS & SOLUTIONS

AVIATION EQUIPMENT CONDITIONS

CONDITIONS	EQUIPMENT SOLUTIONS	NFES#	DWG#
Ground/Air For Forest Health Protection Projects Ground VHF-AM Base Station Kit	Ground VHF-AM Base Station Kit For Forest Health Protection projects and incidents needing VHF-AM base station capabilities. This kit includes four (4) programmable ICOM handheld radios. VHF-AM frequency used in kit must be cleared/authorized.	4300	8
Need helibase/airport ground-to-aircraft communications (VHF-AM).	Ground to Aircraft Radio/Link Kit Base Station Use Only: Will communicate directly with aircraft, without modification, on VHF-AM frequencies. Dedicated frequency should be ordered/cleared by Expanded Dispatch/RO/NIICD-CDO. All kits include four (4) programmable ICOM radios. (Kit is used as a base station, without the link, in this instance.)	4370	8
Helibase/helispot personnel must communicate with incident aircraft in remote locations as well as flight follow to/from the operations area and the helibase or helispots. (UHF-FM to VHF-AM.)	Ground to Aircraft Radio/Link Kit (Using Linking) Allows helispot personnel using VHF-AM ICOM or UHF-FM radios to communicate with aircraft on VHF-AM frequencies. Kit also enables non-contract or military aircraft to communicate with other incident aircraft and helispot personnel via VHF-AM frequencies and helibase personnel via UHF-FM through the link. Dedicated VHF-AM and UHF-FM frequencies must be ordered/cleared by Expanded Dispatch/RO/NIICD-CDO. A VHF-FM radio can be substituted on the link side. Call NIICD-CDO for assistance. Each kit includes four (4) handheld programmable ICOM radios.	4370	9

AVIATION EQUIPMENT CONDITIONS

CONDITIONS	EQUIPMENT SOLUTIONS	NFES#	DWG#
Extensive flight-following needs require expansion of Radio/Link Kit system utilizing two (2) kits.	Two Ground Aircraft Radio/Link Kits By using two (2) Ground Aircraft Radio/Link Kits linked through a UHF-FM repeater frequency, flight-following capabilities can be greatly expanded. This design uses one (1) UHF-FM repeater pair and two (2) VHF-AM frequencies. Helibase must flight-follow using the UHF-FM side of the system through the logistics repeater. Dedicated VHF-AM and UHF-FM frequencies must be ordered through Expanded Dispatch. Each kit includes four (4) handheld programmable ICOM radios.	4370	10
MAFFS Activation Temporary Tanker Base	Airbase Kit Airbase Accessories Kit Tactical Radio Kit Allows personnel to communicate with aircraft from a VHF-AM/VHF-FM base station and/or via a handheld VHF-AM radio. The NFES 4660 Airbase Kit comes with 10 handheld Icom VHF-AM radios and eight (8) sets of headsets, helmet adapters, and adapters to connect a headset to the VHF-AM radios. The VHF-FM base station can monitor both a main frequency and Air Guard. For additional radio capabilities, a NFES 4240 Airbase Accessories Kit and a NFES 4250 MAFFS Tactical Radio Kit can be ordered. The NFES 4240 Airbase Kit has 5 sets of handheld Icom VHF-AM radios, headsets, helmet adapters, and adapters to connect a headset to the VHF-AM radios. The NFES 4250 MAFFS Tactical Radio Kit has six (6) handheld King DPH VHF-FM radios. Dedicated VHF-AM and VHF-FM frequencies must be ordered through dispatch. Air Guard (168.6250 MHz) does not need to be ordered.	4240 4250 4660	11

GROUND VHF-AM BASE STATION KIT

EXCLUSIVE INCIDENT FAA FREQUENCY
SHOULD BE ORDERED THROUGH
EXPANDED DISPATCH.

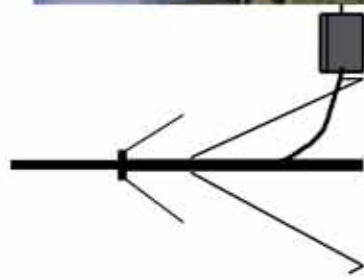


EQUIPMENT NEEDED:

1 EA. 4370 GROUND A/C RADIO/LINK KIT
(INCLUDES 4 EA. ICOM HANDHELDS)

OR

1 EA. 4300 GROUND VHF-AM RADIO/BASE KIT
(INCLUDES 4 EA. ICOM HANDHELDS)



VHF-AM GROUND A/C RADIO

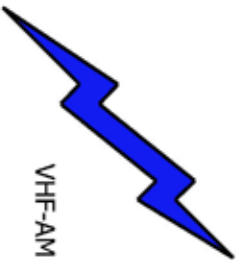


HELIBASE/AIRPORT

DRAWING 8

GROUND TO AIRCRAFT RADIO/LINK KIT (Using Linking)

EXCLUSIVE INCIDENT FAA FREQUENCY
SHOULD BE CLEARED/ORDERED THROUGH
EXPANDED DISPATCH.



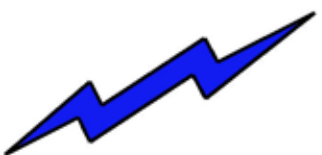
VHF-AM



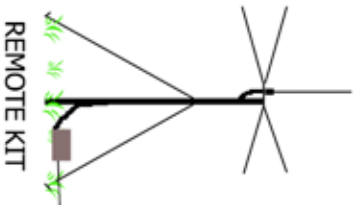
VHF-AM/UHF GRND A/C RADIO/LINK

EQUIPMENT NEEDED:

- 1 EA. 4370 GROUND A/C RADIO/LINK KIT
(INCLUDES 4 EA. ICOM HANDHELDS)
- 1 EA. 4330 REMOTE KIT



UHF-FM



HELIBASE



THIS SYSTEM EXTENDS FLIGHT FOLLOWING COVERAGE. KIT CAN ALSO
BE OPERATED WITH A VHF-FM RADIO IN THE LINK PORTION OF THE
KIT. CALL NIICD CDO FOR FREQUENCY ASSISTANCE.

DRAWING 9

GROUND TO AIRCRAFT COMMUNICATIONS VHF-AM/UHF-FM LINK KIT

EXCLUSIVE INCIDENT FAA FREQUENCY
SHOULD BE CLEARED/ORDERED THROUGH
EXPANDED DISPATCH.

EQUIPMENT NEEDED:

2 EA. 4370 GROUND A/C RADIO/LINK KIT
(INCLUDES 4 EA. ICOM HANDHELDS)



VHF-AM/UHF GRND A/C RADIO/LINK



VHF-AM



VHF-AM



HELISPOT
W/ICOM



VHF-AM/UHF GRND A/C RADIO/LINK



VHF-AM



VHF-AM



HELIBASE
W/ICOM

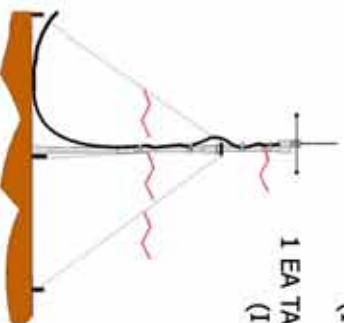
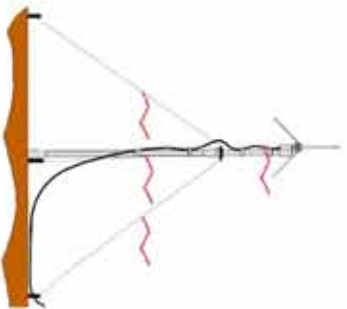
USING TWO (2) A/C KITS LINKED TOGETHER BY UHF-FM ALLOWS FOR
GREATER AREA COVERAGE FOR FLIGHT FOLLOWING. USES ONLY ONE
(1) UHF-FM AND TWO (2) VHF-AM FREQUENCIES. CALL NIICD CDO FOR
FREQUENCY ASSISTANCE.

DRAWING 10

MAFFS ACTIVATION & TEMPORARY TANKER BASE

EXCLUSIVE INCIDENT FREQUENCIES SHOULD BE ORDERED THROUGH EXPANDED DISPATCH.

DO NOT ASSUME NATIONAL FREQUENCIES ARE PRE-AUTHORIZED FOR YOUR AREA.



EQUIPMENT NEEDED:

1 Ea 4660 AIRBASE KIT
(INCLUDES 10 EA. ICOM HANDHELDS)

OPTIONAL:

1 EA 4240 AIRBASE ACCESSORIES KIT
(INCLUDES 5 EA. ICOM HANDHELDS)

1 EA TACTICAL RADIO KIT
(INCLUDES 6 EA. BK HANDHELDS)



Drawing 11



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KIT INVENTORIES

NATIONAL INCIDENT RADIO SUPPORT CACHE
004080 FLEXIBLE SOLAR PANEL KIT

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
50 LBS	1.7	23 x 14 x 9

NFES #	DESCRIPTION	QTY ISSUED
000825	Tent Stakes, Aluminum, 12", 69ST001	6 ea.
004132	Charge Controller, 12Volt, 8Amp, ASC12/8A	1 ea.
004133	Battery, Sealed Lead Acid, 35 AmpHr, PS-12350	1 ea.
004184	Solar Panel, Flexible 60 Watt, P3-62	1 ea.
004807	Case, Pelican 1510NF	1 ea.
	Foam	2 ea.
	Caribiner, Stainless Steel, Type 316	6 ea.
	Rope, 1/4", Low-Stretch Polyester, 10ft	6 ea.
	Cable Assembly, NIRSC-CAB100	1 ea.
	Cable Assembly, NIRSC-CAB130	1 ea.
	Cable Assembly, NIRSC-CAB140	1 ea.
	Cable Assembly, NIRSC-CAB150	1 ea.
	Fuses, mini ATC, 10-Amp	3 ea.
	Installation Instructions	1 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
004240 AIRBASE ACCESSORIES KIT (ICOM IC-A6 RADIOS)

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
32 LBS	3.6	25 X 20 X 9

NFES #	DESCRIPTION	QTY ISSUED
001086	Harness, Chest, Radio	5 ea.
004059	Adapter, Headset to Radio, Icom, OPC-499	5 ea.
004061	Headset, Aviation, David Clark, H10-21	5 ea.
004062	Adapter, Helmet, U-92A/U to M642/5-1 & M642/4-1	5 ea.
004138	PTT Switch. Remote, Icom, PTT SW	5 ea.
004405	Speaker Mic, Icom, HM-173	2 ea.
004321	Radio, Aviation Handheld, Icom, IC-A6	5 ea.
004491	Holder, Battery, AA, Icom, BP-208N	5 ea.
004492	Antenna, Icom, FA-B02AR	6 ea.
004830	Battery, AA	60 ea.
005088	Case, Pelican-1600	1 ea.
	Radio Quick Reference Card, Icom, IC-A6	5 ea.
	Frequency Sheet, Icom	2 ea.
	T-Cards, Radio Tracking	25 ea.
	Pads, Alcohol, Headset Cleaning	15 ea.
	Lead Box Seals	2 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
4244X2 LOGISTICS RADIO KIT
(MOTOROLA XTS2500 UHF RADIOS)

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
75 LBS	3.5	20 X 21 X 15

NFES#	DESCRIPTION	QTY ISSUED
004306	Liner, foam, radio kit	1 ea
004309	Box, fiberglass, (radio & rprr)	1 ea
004355	Antenna, mobile mag,UHF	4 ea
004535	Radio,Motorola,UHF, XTS-2500 (capitalized)	16 ea
004537	Holder, battery, AA, XTS-2500	16 ea
004540	Antenna, UHF, XTS-2500	19 ea
004542	Case, radio, XTS-2500	16 ea
004543	Speaker/mic, XTS-2500	4 ea
004544	Cable, cloning, XTS-2500	4 ea
004830	Batteries, AA	384 ea
	T-cards, radio tracking	32 ea
	Kit inventory worksheets	3 ea
	Lead box seals	2 ea
	Radio tracking sheets	3 ea
	Frequency sheets	3 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
4244MD LOGISTICS RADIO KIT
(MIDLAND UHF RADIOS)

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
75 LBS	3.5	20 X 21 X 15

NFES#	DESCRIPTION	QTY ISSUED
004075	Case, radio, Midland	16 ea
004076	Antenna, UHF, Midland	19 ea
004077	Holder, battery, AA, Midland	16 ea
004078	Speaker/mic, Midland	4 ea
004079	Cloning Cable, Midland	1 ea
004169	Radio, Midland, (capitalized)	16 ea
004306	Liner, foam, radio kit	1 ea
004309	Box, fiberglass, (radio & rprr)	1 ea
004355	Antenna, mobile mag.	4 ea
004830	Batteries, AA	288 ea
	T-cards, radio tracking	32 ea
	Kit inventory worksheets	3 ea
	Lead box seals	2 ea
	Radio tracking sheets	3 ea
	Frequency sheets	3 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004248 LOGISTICS REPEATER KIT

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	95 LBS	4.5	
BOX	80 LBS	3.5	20 X 21 X 15
MASTS	15 LBS	1.0	60 X 3 X 3

NFES#	DESCRIPTION	QTY ISSUED
000825	Tent stakes	3 ea
001023	Batteries, 7.5 Volt	4 ea
004171	Screwdriver, 6" straight slot	1 ea
004180	Connector, 90 degree, UHF	1 ea
004297	Duplexer, UHF	1 ea
004303	Hammer, 4 lb	1 ea
004304	Antenna, UHF, whip, w/po-UHF load	1 ea
004305	Masts, antenna, 5 ft. sect.	3 ea
004308	Guy assembly, antenna	1 ea
004309	Box, fiberglass, (radio & rprr)	1 ea
004326	Cable, coaxial w/2 ea 4327 (pl-259)	1 ea
004333	Wire assembly, fused	1 ea
004339	Adapter, barrel connector	1 ea
004489	Base antenna, UHF w/gnd planes	1 ea
004648	Card, Audio Control, 4L-10	1 ea
004651	Subrack	1 ea
004652	System monitor	1 ea
004659	Microphone, Daniels	1 ea
004677	Cable, UHF duplexer to radio	2 ea
004682	Transmitter, UHF, P25	1 ea
004683	Receiver, UHF, P25	1 ea
004690	Screwdriver, Daniels	1 ea
	Power cord, w/ female cinch connector	1 ea
	Battery straps, 15 volt	3 ea
	Fuses, 3 ag 5 amp	1 bx
	Battery jumpers, 4-red, 4-black	8 ea
	Garbage bag	1 ea
	Filament tape	1 ro
	Flagging tape	1 ro
	Allen wrench	1 ea
	Kit inventory worksheets	3 ea
	Switch setting diagram (laminated)	1 ea
	Battery & antenna set-up sheets	3 ea
	Lead box seal	2 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004250 MAFFS TACTICAL RADIO KIT

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
29 LBS	3.5	20 X 21 X 15

NFES#	DESCRIPTION	QTY ISSUED
004601	Antenna, VHF, King	10 ea.
004603	Radio, King, DPHx (capitalized)	6 ea.
004609	Box, Fiberglass, Small, Grey	1 ea.
004830	Batteries, AA	108 ea.
005330	Speaker/Mic, King	2 ea.
005331	Case, Radio, King	6 ea.
	Kit inventory worksheets	3 ea
	Lead box seals	2 ea
	Radio tracking sheets	3 ea
	Frequency sheets	3 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004281 CROSSBAND LINK KIT

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	95 LBS	4.5	
BOX	80 LBS	3.5	20 X 21 X 15
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
000825	Tent stakes	6 ea
001023	Batteries, 7.5 Volt	4 ea
004171	Screwdriver, 6" straight slot	1 ea
004180	Connector, 90 degree, UHF	2 ea
004303	Hammer, 4 lb	1 ea
004304	Antenna, UHF whip, with PO-UHF load	1 ea
004305	Masts, antenna, 5 ft. section	6 ea
004308	Guy assembly, antenna	2 ea
004309	Box, fiberglass, (radio & rptr)	1 ea
004326	Cable, coaxial w/2 ea 4327 (pl-259)	2 ea
004333	Wire assembly, fused	1 ea
004339	Adapter, barrel connector	2 ea
004464	Antenna, VHF whip, with PO-150 load	1 ea
004489	Base antenna, VHF w/gnd planes	1 ea
004651	Sub-rack, Daniels(19")	1 ea
004659	Microphone, Daniels	1 ea
004665	Monitor, system	1 ea
004668	Cable, receiver, A-side	1 ea
004669	Cable, transmitter, A-side	1 ea
004675	Card, control, audio	1 ea
004678	Cable, receiver, B-side Tx	1 ea
004679	Cable, transmitter, B-side Rx	1 ea
004682	Transmitter, UHF, P25	1 ea
004683	Receiver, UHF, P25	1 ea
004684	Transmitter, VHF, P25	1 ea
004685	Receiver, VHF, P25	1 ea
004690	Screwdriver, Daniels	1 ea
005208	Antenna, yagi, w/u-bolt, clamp, nuts	1 ea
	Power cord w/female cinch connector	1 ea
	Battery straps, 15 volt	3 ea
	Fuses, 3 ag 5 amp	1 bx
	Battery jumpers, 4-red, 4-black	8 ea
	Battery jumpers, 6-foot, 1-red, 1-black	2 ea
	Garbage bag	1 ea
	Filament tape	1 ro

NATIONAL INCIDENT RADIO SUPPORT CACHE
004281 CROSSBAND LINK KIT
(continued)

	Flagging tape	1 ro
	Allen wrench	1 ea
	Kit inventory worksheets	3 ea
	Frequency sheets	3 ea
	Battery & antenna set-up sheets	3 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004300 GROUND VHF-BASE STATION KIT

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	95 LBS	4.5	
BOX	80 LBS	3.5	20 X 21 X 15
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
000332	Wrench, adjustable, 6"	1 ea
000825	Tent stakes	3 ea
001023	Battery, 7.5 volt	4 ea
004171	Screwdriver, 6" straight slot	1 ea
004303	Hammer, 4 lb	1 ea
004305	Masts, antenna, 5 ft section	3 ea
004307	Liner, a/c 5-pocket	1 ea
004308	Guy assembly, antenna	1 ea
004309	Box, fiberglass, (radio & rprr)	1 ea
004326	Cable, coaxial, w/2 ea 4327 (pl-259)	3 ea
004339	Adapter, barrel connector	3 ea
004343	Antenna, VHF-AM, AV-1	1 ea
004402	Radio, Icom, IC-A3(capitalized)	4 ea
004476	Base Station, VHF-AM, #TBS-150	1 ea
004830	Battery, AA	80 ea
005066	Mic. (Telex) w/three pin male connector	1 ea
005082	Antenna, Icom, handheld, helical	5 ea
005083	Holder, battery, AA, Icom	4 ea
005084	Case, radio, Icom	4 ea
	N. male to UHF female adapter (rfn-1035-1)	1 ea
	120 volt ac power cord (TBS-150)	1 ea
	Battery jumpers, 4-red, 4-black	8 ea
	Battery straps, 15-volt	3 ea
	Fuses, 2AG, 5 amp mini (1 box)	5 ea
	Fuses, 3AG, 5 amp (1 box)	5 ea
	Fuses MDL, 2.5 amp (1 box)	5 ea
	Kit inventory worksheets	3 ea
	Battery & antenna set-up sheets	3 ea
	Installation instruction sheets	3 ea
	Frequency sheets for Icoms	4 ea
	Lead box seal	2 ea
	Garbage bag	1 ea
	Filament tape	1 ro

NATIONAL INCIDENT RADIO SUPPORT CACHE
004300 GROUND VHF-BASE STATION KIT
(continued)

	Flagging tape	1 ro
	Instruction manual (TBS-150)	1 ea
	Operating booklet, Icom	1 ea
	T-cards, radio tracking	8 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004312 COMMAND REPEATER/LINK

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	110 LBS	4.5	
BOX	95 LBS	3.5	20 X 21 X 15
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
000825	Tent stakes	6 ea
000968	User's Guide	1 ea
001023	Batteries, 7.5 Volt	4 ea
004171	Screwdriver, 6" straight slot	1 ea
004180	Connector, 90 degree, UHF	2 ea
004303	Hammer, 4 lb	1 ea
004304	Antenna, UHF whip, with PO-UHF load	1 ea
004305	Masts, antenna, 5 ft. section	6 ea
004308	Guy assembly, antenna	2 ea
004309	Box, fiberglass, (radio & rptr)	1 ea
004326	Cable, coaxial w/2 ea 4327 (pl-259)	2 ea
004333	Wire assembly, fused	1 ea
004339	Adapter, barrel connector	2 ea
004342	Duplexer, VHF	1 ea
004464	Antenna, VHF whip, with PO-150 load	1 ea
004489	Base antenna, w/grnd planes(1-VHF 1-UHF)	2 ea
004648	Card, Audio Control, 4L-10	1 ea
004651	Subrack	1 ea
004652	System monitor	1 ea
004659	Microphone, Daniels	1 ea
004676	Cable, VHF duplexer to radio	2 ea
004678	Cable, UHF transmitter to monitor	1 ea
004679	Cable, UHF receiver to monitor	1 ea
004682	Transmitter, UHF, P25	1 ea
004683	Receiver, UHF, P25	1 ea
004684	Transmitter, VHF, P25	1 ea
004685	Receiver, VHF, P25	1 ea
004690	Screwdriver, Daniels	1 ea
005208	Antenna, Yagi, w/ u-bolt, clamp, nuts	1 ea
	Power cord w/female cinch connector	1 ea
	Battery straps, 15 volt	3 ea
	Fuses, 3 ag 5 amp	1 bx
	Battery jumpers, 4-red, 4-black	8 ea
	Garbage bag	1 ea
	Filament tape	1 ro

NATIONAL INCIDENT RADIO SUPPORT CACHE
004312 COMMAND REPEATER/LINK
(continued)

	Flagging tape	1 ro
	Allen wrench	1 ea
	Kit inventory worksheets	3 ea
	Switch setting diagrams (laminated)	2 ea
	Battery & antenna set-up sheets	3 ea
	Frequency sheets for UHF link	3 ea
	Lead box seal	2 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004320 COML KIT

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	30 LBS	1.63	20.62 X 16.87 X 8.12

NFES #	DESCRIPTION	QTY ISSUED
005085	Case, Pelican, 1550	1 ea.
004603	Radio - King, VHF, Digital, DPHX	1 ea.
004602	Cable - Cloning, King DPH, P/N E/GCC	2 ea.
001034	Holder-Radio Battery, For 9 Each AA Alkaline	2 ea.
	Programming/Cloning Instructions For King DPHX	1 ea.
004535	Radio-Motorola XTS2500, MD1III, UHF	1 ea.
004544	Cable-Cloning, Motorola Radio, P/N RKN4108	1 ea.
004537	Holder - Battery, AA, For Motorola XTS2500	1 ea.
	Programming/Cloning Instructions For Motorola XTS2500	1 ea.
004115	Radio - Datron, VHF, Digital	1 ea.
004114	Cable - Cloning, Datron	1 ea.
004541	Holder - Battery, AA, Motorola Xts300 (Datron)	1 ea.
	Programming/Cloning Instructions For Datron	1 ea.
004161	Radio - Racal, VHF, Digital, PRC-6894	1 ea.
004168	Cable - Cloning, Racal, P/N 85303	1 ea.
004165	Holder - Battery, AA, For Racal	1 ea.
	Programming/Cloning Instructions For Racal	1 ea.
004169	Radio - Midland, UHF	1 ea.
004079	Cable - Cloning, Midland, P/N ACC-2305G	1 ea.
004077	Holder - Battery, Midland	1 ea.
004830	Battery, AA	116 ea.
	Programming/Cloning Instructions For Midland	1 ea.
	Kit Inventory Worksheets	3 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
04330MD REMOTE KIT
(MIDLAND RADIOS)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	105 LBS	4.5	
BOX	95 LBS	3.5	20 X 21 X 15
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
000325	Pliers, lineman	1 ea
000825	Tent stakes	3 ea
001023	Battery, 7.5 volt	4 ea
004169	Radio, Midland, UHF (capitalized)	1 ea
004171	Screwdriver, 6" straight slot	1 ea
004180	Connector, 90 degree, UHF	1 ea
004234	Battery eliminator, Midland	1 ea
004235	Radio, Midland, VHF (capitalized)	1 ea
004236	Cable/connector assy, Midland	1 ea
004274	Ac/dc transformer	1 ea
004302	Wire assembly, fused, dc/1 amp 3-hole	1 ea
004303	Hammer, 4 lb	1 ea
004304	Antenna, UHF whip w/ po-UHF load	3 ea
004305	Masts, antenna, 5 ft section	1 ea
004308	Guy assembly, antenna	1 ea
004309	Box, fiberglass (radio & rprr)	1 ea
004326	Cable, coaxial w/ 2 ea 4327 (PL-259)	1 ea
004332	Wire, field telephone, 1/4 mile reel	1 ro
004339	Adapter, barrel connector	1 ea
004409	Speaker, external, 8-ohm	1 ea
004464	Antenna, VHF whip w/ po-150 load	1 ea
004471	Gray box for remote chassis	1 ea
004473	Desk set, CPI, Mod. DR-10	1 ea
004489	Base antenna, w/ grnd planes - VHF	1 ea
004489	Base antenna, w/ grnd planes - UHF	1 ea
005208	Antenna, Yagi, w/u-bolt, clamp, nuts	1 ea
005338	Box, aluminum - (5 3/4 x 3 3/4 x 2)	1 ea
005342	Panel termination	1 ea
	External power cord w/2-prong plug/dc	1 ea
	Kit inventory worksheets	3 ea
	Frequency sheet (VHF & UHF laminated)	1 ea
	Battery & antenna set-up sheets w/instructions	3 ea
	Allen wrench	1 ea
	Lead box seal	2 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
04330MD REMOTE KIT
(MIDLAND RADIOS)
(continued)

	Garbage bag	1 ea
	Fuses 1 amp (for telephone only)	1 bx
	Wire nuts	6 ea
	Battery jumpers, 3 Red, 3 Black	6 ea
	Filament tape	1 ro
	Flagging tape	1 ro
	Fuse, 5 amp (for chassis only)	1 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
04330X2 REMOTE KIT
(MOTOROLA RADIOS)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	105 LBS	4.5	
BOX	95 LBS	3.5	20 X 21 X 15
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
000325	Pliers, lineman	1 ea
000825	Tent stakes	3 ea
001023	Battery, 7.5 volt	4 ea
004171	Screwdriver, 6" straight slot	1 ea
004180	Connector, 90 degree, UHF	1 ea
004274	Ac/dc transformer	1 ea
004302	Wire assembly, fused, dc/1 amp 3-hole	1 ea
004303	Hammer, 4 lb	1 ea
004304	Antenna, UHF whip w/ po-UHF load	1 ea
004305	Masts, antenna, 5 ft section	3 ea
004308	Guy assembly, antenna	1 ea
004309	Box, fiberglass (radio & rptr)	1 ea
004326	Cable, coaxial w/ 2 ea 4327 (PL-259)	1 ea
004332	Wire, field telephone, ¼ mile reel	1 ro
004339	Adapter, barrel connector	1 ea
004409	Speaker, external, 8-ohm	1 ea
004464	Antenna, VHF whip w / po-150 load	1 ea
004466	Motorola Radio, VHF, XTS5000 (capitalized)	1 ea
004471	Gray box for remote chassis	1 ea
004480	Dc Handset w/ DTMF Keypad	1 ea
004489	Base antenna, w/ grnd planes - VHF	1 ea
004489	Base antenna, w/ grnd planes - UHF	1 ea
004535	Motorola Radio, UHF, XTS2500 (capitalized)	1 ea
005208	Antenna, yagi, w/u-bolt, clamp, nuts	1 ea
005338	Box, aluminum – (5 ¾ x 3 ¾ x 2)	1 ea
005341	Cable / connector assy, Motorola	1 ea
005342	Panel, termination	1 ea
005344	Battery eliminator, Motorola XTS5000	1 ea
005346	Battery eliminator, Motorola XTS2500	1 ea
	External power cord w/2- prong plug/dc	1 ea
	Kit inventory worksheets	3 ea
	Frequency sheet(VHF & UHF laminated)	1 ea
	Battery & antenna set-up sheets w/instructions	3 ea
	Allen wrench	1 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
04330X2 REMOTE KIT
(MOTOROLA RADIOS)
(continued)

	Lead box seal	2 ea
	Garbage bag	1 ea
	Fuses 1 amp (for telephone only)	1 bx
	Wire nuts	6 ea
	Battery jumpers, 3 Red, 3 Black	6 ea
	Filament tape	1 ro
	Flagging tape	1 ro
	Fuse, 5 amp (for chassis only)	1 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004370 GROUND AIRCRAFT RADIO/LINK KIT
(BOX 1 OF 2)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	110 LBS	6.5	
BOX 1	69 LBS	3.5	20 X 21 X 15
BOX 2	26 LBS	2.0	21 X 17 X 8
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
001023	Battery, 7.5 volt	4 ea
004180	Connector, 90 degree, UHF	2 ea
004304	Antenna, UHF whip, with Po-UHF load	1 ea
004305	Masts, Antenna, 5 ft. section	6 ea
004307	Liner, foam 5 pocket	1 ea
004309	Box, Fiberglass, (radio & rprr)	1 ea
004326	Cable, Coaxial w/2 ea 4327 (pl-259)	2 ea
004339	Adapter, barrel connector	2 ea
004343	Antenna, VHF/AM, AV-1	1 ea
004402	Radio,Icom,IC-A3	4 ea
004409	Speaker, external, 8-ohm	1 ea
004489	Base antenna, UHF w/gnd planes	1 ea
004651	Sub-rack, with motherboard, SR39-1	1 ea
004659	Microphone, Daniels	1 ea
004665	Monitor, System	1 ea
004666	Transmitter, syn. VHF-AM	1 ea
004667	Receiver, syn. VHF-AM	1 ea
004668	Cable, receiver, A-side	1 ea
004669	Cable, transmitter, A-side	1 ea
004675	Card, control, audio(AC-3E)	1 ea
004678	Cable, co-ax, B-side transmit	1 ea
004679	Cable, co-ax, B-side receive	1 ea
004682	Transmitter, UHF	1 ea
004683	Receiver, UHF	1 ea
005082	Antenna, Icom	5 ea
005083	Holder, battery, AA, Icom	4 ea
005084	Holster, radio, Icom	4 ea
	Power cord with female cinch connector	1 ea
	Power cord (female cinch conn. to alligator clip)	1 ea
	Battery straps, 15 volt	3 ea
	Battery jumpers, 4-red, 4-black	8 ea
	Fuses, 3ag-5 AMP (5 each)	1 bx
	Allen wrench	1 ea
	Lead box seal	2 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004370 GROUND AIRCRAFT RADIO/LINK KIT
(BOX 1 OF 2)
(continued)

	Operating booklet, Icom	1 ea
	Frequency sheet for Icoms	4 ea
	Frequency sheet, UHF	3 ea
	Battery & antenna set-up sheets	3 ea
	Kit inventory worksheet	3 ea
	T-card, radio tracking	8 ea
	Installation Instruction sheet	3 ea
	Switch setting diagrams, base/link laminated	2 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004370 GROUND AIRCRAFT RADIO/LINK KIT
(BOX 2 OF 2)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	110 LBS	6.5	
BOX 1	69 LBS	3.5	20 X 21 X 15
BOX 2	26 LBS	2.0	21 X 17 X 8
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
000332	Wrench, Adjustable, 6 in.	1 ea.
000825	Tent Stakes	6 ea.
004171	Screwdriver, 6" Straight Slot	1 ea.
004303	Hammer, 4 lb.	1 ea.
004308	Guy Assembly	2 ea.
004690	Screwdriver, Daniels	1 ea.
004830	Battery, AA	80 ea
005085	Pelican Box, Black	1 ea.
	Filament Tape	1 ro.
	Flagging Tape	1 ro.
	Garbage bag	1 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
4381DA CMD/TAC RADIO KIT
(DATRON GUARDIAN 25 RADIOS)

TOTAL WEIGHT (BOX)		CU FT	DIMENSIONS (INCHES)
85 LBS		3.5	20 X 21 X 15

NFES #	DESCRIPTION	QTY ISSUED
004111	Antenna, VHF, Datron	19 ea
004112	Case, radio, Datron	16 ea
004113	Speaker/mic, Datron	4 ea
004114	Cable, cloning, Datron	1 ea
004115	Radio Datron, G25RPV100(capitalized)	16 ea
004306	Liner, foam, radio kit	1 ea
004309	Box, fiberglass, (radio & rptr)	1 ea
004355	Antenna, mobile mag,bnc-w/sma adapter	4 ea
004541	Holder, battery, AA, Datron	16 ea
004830	Batteries, AA	384 ea
	T-cards, radio tracking	32 ea
	Kit inventory worksheets	3 ea
	Lead box seals	2 ea
	Radio tracking sheets	3 ea
	Frequency sheets	3 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
4381KD CMD/TAC RADIO KIT
(KING DPHX RADIOS)

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
85 LBS	3.5	20 X 21 X 15

NFES #	DESCRIPTION	QTY ISSUED
001034	Holder, battery, AA, King	16 ea
004306	Liner, foam, radio kit	1 ea
004309	Box, fiberglass, (radio & rprr)	1 ea
004355	Antenna, mobile mag	4 ea
004601	Antenna, Vhf, King	19 ea
004602	Cloning Cable, King DPHx	1 ea
004603	Radio King, DPHx (capitalized)	16 ea
004830	Batteries, AA	288 ea
005330	Speaker/mic, King	4 ea
005331	Case, radio, King	16 ea
005350	Antenna adapter, mobile mag, King	4 ea
	T-cards, radio tracking	32 ea
	Kit inventory worksheets	3 ea
	Lead box seals	2 ea
	Radio tracking sheets	3 ea
	Frequency sheets	3 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
4381RL CMD/TAC RADIO KIT
(RACAL 25 RADIOS)

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
85 LBS	3.5	20 X 21 X 15

NFES #	DESCRIPTION	QTY ISSUED
004160	Antenna, VHF, Racal/Thales	19 ea
004161	Radio, VHF, Racal/Thales, PRC6894(capitalized)	16 ea
004164	Case, radio, Racal/Thales	16 ea
004165	Holder, battery, AA, Racal/Thales	16 ea
004166	Speaker/mic, Racal/Thales	16 ea
004168	Cable, cloning, Racal/Thales	1 ea
004306	Liner, foam, radio kit	1 ea
004309	Box, fiberglass, (radio & rprr)	1 ea
004355	Antenna, mobile mag,bnc-w/sma adapter	4 ea
004830	Batteries, AA	320 ea
	T-cards, radio tracking	32 ea
	Kit inventory worksheets	3 ea
	Lead box seals	2 ea
	Radio tracking sheets	3 ea
	Frequency sheets	3 ea

**NATIONAL INCIDENT RADIO SUPPORT CACHE
004390 STARTER SYSTEM (COMMAND/LOGISTICS)**

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	836 LBS	41.5	
BOXES	783 LBS	32.8 1.7	9 EA @ 20 X 21 X 15 1 EA @ 21 X 17 X 18
MASTS	53 LBS	7.0	7 EA @ 60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
004244	LOGISTICS RADIO KIT	1 ea
004248	LOGISTICS REPEATER	1 ea
004305	MASTS, ANTENNA 5 FT SECTIONS	21 ea
004312	COMMAND REPEATER/LINK	1 ea
004330	REMOTE KIT	2 ea
004370	GROUND AIRCRAFT RADIO/LINK KIT	1 ea
004381	CMD/TAC RADIOS	3 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004410 PUBLIC ADDRESS KIT

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
22 LBS	3.5	20 X 21 X 15

NFES #	DESCRIPTION	QTY ISSUED
000033	Battery, D	48 ea
001241	Battery, 9 volt	4 ea
004170	Transmitter, Wireless (S1600T)	1 ea
004176	Cable, PA 40 ft (C200-0025)	1 ea
004177	AC Adapter (S1460)	2 ea
004178	Battery Pack/Holder, D Cell (A550-0005)	2 ea
004181	PA, Wireless Amp w/horn and wireless receiver (SW615A)	1 ea
004182	PA, Wireless, Secondary w/horn (S1244-70)	1 ea
004183	Microphone, Wireless (S1605)	1 ea
004309	Box, Fiberglass	1 ea
004830	Battery, AA	4 ea
	Garbage Bag	1 ea
	Filament Tape	1 ea
	Flagging Tape	1 ea
	Kit Inventory Worksheets	3 ea
	Lead Box Seal	2 ea
	Installation Instructions	1 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
4420LS MAFFS PRINTER NETWORK KIT
LINKSYS EQUIPMENT
(BOX 1 OF 2)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	117 LBS	9.08	
BOX 1	76 LBS	6.52	33.36 X 28.44 X 18.23

004293	Surge Protector	1 ea.
004328	Router, Linksys E4200	1 ea.
004329	Bridge, Linksys WES610N	1 ea.
004340	Printer, HP, Officejet Pro 8600	1 ea.
004808	Case, Pelican, 1690	1 ea.
	Kit Instruction Binder (includes)	1 ea.
	Driver CD, HP Officejet Pro 8600	1 ea.
	Inventory Sheet	2 ea.
	Lead Box Seal	2 ea.
	Hotspot (includes the following items)	1 ea.
	Case, Pelican, 1060, Yellow	1 ea.
004334	MIFI, Verizon MIFI4510L (accountable)	1 ea.
	Power Adapter, AC/DC, Verizon MIFI4510L	1 ea.
	Cable, Micro USB	1 ea.

**NATIONAL INCIDENT RADIO SUPPORT CACHE
4420LS MAFFS PRINTER NETWORK KIT
LINKSYS EQUIPMENT
(BOX 2 OF 2)**

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	117 LBS	9.08	
BOX 2	41 LBS	2.56	24.64 X 19.39 X 13.78

NFES #	DESCRIPTION	QTY ISSUED
000332	Wrench, Adjustable, 6 in.	1 ea.
000825	Tent Stakes	6 ea.
004171	Screwdriver, 6" Straight Slot	1 ea.
004303	Hammer, 4 lb.	1 ea.
004308	Guy Assembly	2 ea.
004690	Screwdriver, Daniels	1 ea.
004830	Battery, AA	80 ea
005085	Pelican Box,Black	1 ea.
	Filament Tape	1 ro.
	Flagging Tape	1 ro.
	Garbage bag	1 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
4420NT MAFFS PRINTER NETWORK KIT
NETGEAR EQUIPMENT
(BOX 1 OF 2)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	117 LBS	9.08	
BOX 1	76 LBS	6.52	33.36 X 28.44 X 18.23

004293	Surge Protector	1 ea.
004329	Bridge, Linksys WES610N	1 ea.
004340	Printer, HP, Officejet Pro 8600	1 ea.
004341	Router, Netgear, N900	1 ea.
004808	Case, Pelican, 1690	1 ea.
	Kit Instruction Binder (includes)	1 ea.
	Driver CD, HP Officejet Pro 8600	1 ea.
	Inventory Sheet	2 ea.
	Lead Box Seal	2 ea.
	Hotspot (includes the following items)	1 ea.
	Case, Pelican, 1060, Yellow	1 ea.
004334	MIFI, Verizon MIFI4510L (accountable)	1 ea.
	Power Adapter, AC/DC, Verizon MIFI4510L	1 ea.
	Cable, Micro USB	1 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
4420NT MAFFS PRINTER NETWORK KIT
NETGEAR EQUIPMENT
(BOX 2 OF 2)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	117 LBS	9.08	
BOX 2	41 LBS	2.56	24.64 X 19.39 X 13.78

NFES #	DESCRIPTION	QTY ISSUED
004135	Ethernet Cable, 6 ft.	2 ea.
004136	Ethernet Cable, 25 ft.	2 ea.
004137	Ethernet Cable, 50 ft.	2 ea.
004185	Extension Cord, 16 AWG/3, 25 ft.	1 ea.
004233	USB Drive, 16 GB	1 ea.
004254	Ink Cartridge, HP, Black, 950XL	2 ea.
004255	Ink Cartridge, HP, Cyan, 951XL	2 ea.
004256	Ink Cartridge, HP, Magenta, 951XL	2 ea.
004257	Ink Cartridge, HP, Yellow, 951XL	2 ea.
004809	Case, Pelican, 1620	1 ea.
	Paper Ream, Letter	1 ea.
	Power Cord, Printer, HP Officejet Pro 8600	1 ea.
	Power Cord, Bridge, Linksys WES610N	1 ea.
	Power Cord, Router, Netgear, N900	1 ea.
	Power Cord, 115 VAC, Router, Netgear, N900	1 ea.
	Telephone Cord, 8 ft.	1 ea.
	Telephone Cord, 6 ft.	1 ea.
	Inventory Sheet	2 ea.
	Lead Box Seal	2 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
004499 AIR ATTACK KIT

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
35 LBS	3.35	24.5 X 14 X 17

NFES #	DESCRIPTION	QTY ISSUED
004339	Connector, Barrel, BNC	2 ea
004066	Radio, TDFM-136, P25	2 ea
004479	Chassis, Air Attack (Model TAK 100)	1 ea
	Adapter, PTT, PT-300	2 ea
	Cable, Power	1 ea
	Cable, Audio/Mic	1 ea
004490	Strap, Tie Down	2 ea
	Adapter, Headset	2 ea
005086	Pelican Case, Tan	1 ea
	Operator's Guide, TDFM-136	1 ea
	Information Sheet, Air Attack	2 ea
	Information Sheet for, TDFM-136, Basic Programming	2 ea
	Information Sheet, TDFM-136 Cmd Quick Ref. Guide	2 ea

NATIONAL INCIDENT RADIO SUPPORT CACHE
004604 AIR ATTACK TRAINING KIT

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
55	4.5	20 X 32 X 12

NFES #	DESCRIPTION	QTY ISSUED
004059	Radio Adapter, IC-A3, OPC-449	1 ea.
004060	Headset, Aviation, Dual Impedance, David Clark, H10-66	2 ea.
004062	Adapter, Helmet, U-92A/U to M642/5-1 & M642/4-1	2 ea.
004180	BNC 90 Degree Adapter	1 ea.
004228	Power Supply, 12VDC/20 Amp, Astron	1 ea.
004339	BNC Barrel Adapter	1 ea.
005086	Pelican Case, Black	1 ea.
005328	Headset Adapter, King	1 ea.
	Antenna, VHF, BNC	2 ea.
	Cable, RF, 12 inch	1 ea.
	Cable, RF, 6 inch, RG-174	2 ea.
	Dummy Load, 25 Watt	2 ea.
	Instruction Booklet	1 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
004660 AIRBASE KIT (IC-A6 RADIOS)
(BOX 1 OF 2)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	101 LBS	8.0	
BOX 1	51 LBS	3.5	33.36 X 28.44 X 18.23
BOX 2	35 LBS	3.5	24.64 X 19.39 X 13.78
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
001086	Harness, Chest, Radio	8 ea.
004059	Adapter, Headset to Radio, Icom, OPC-499	8 ea.
004060	Headset, Aviation, Dual Impedance, David Clark, H10-66	4 ea.
004061	Headset, Aviation, David Clark, H10-21	4 ea.
004062	Adapter, Helmet, U-92A/U to M642/5-1 & M642/4-1	8 ea.
004138	PTT Switch. Remote, Icom, PTT SW	8 ea.
004306	Liner, Foam, Radio Kit	1 ea.
004309	Box, Fiberglass	1 ea.
004321	Radio, Aviation Handheld, Icom, IC-A6	10 ea.
004405	Speaker Mic, Icom, HM-173	2 ea.
004491	Holder, Battery, AA, Icom, BP-208N	10 ea.
004492	Antenna, Icom, FA-B02AR	11 ea.
004830	Battery, AA	120 ea.
	Radio Quick Reference Card, Icom, IC-A6	8 ea.
	T-Cards, Radio Tracking	25 ea.
	Frequency Sheets, Icom	3 ea.
	Pads, Alcohol, Headset Cleaning	24 ea.
	Lead Box Seal	2 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
004660 AIRBASE KIT (TAF-550)
(BOX 2 OF 2)

	WEIGHT	CU FT	DIMENSIONS (INCHES)
TOTAL	101 LBS	8.0	
BOX 1	51 LBS	3.5	33.36 X 28.44 X 18.23
BOX 2	35 LBS	3.5	24.64 X 19.39 X 13.78
MASTS	15 LBS	1.0	60 X 3 X 3

NFES #	DESCRIPTION	QTY ISSUED
000825	Tent Stakes	6 ea.
004066	Radio, Aviation, TDFM-136 (capitalized)	1 ea.
004134	Headset, Single Dome, David Clark, Modified H34-92	1 ea.
004303	Hammer, 4 Lb.	1 ea.
004308	Guy Assembly, Antenna	2 ea.
004309	Box, Fiberglass	1 ea.
004323	Radio, Airbase VHF-FM/AM, TAF-550 (capitalized)	1 ea.
004326	Cable, Coaxial, w/2 ea 4327 (PL-259)	4 ea.
004339	Adapter, Barrel Connector, UHF	3 ea.
004343	Antenna, VHF/AM, AV-1	1 ea.
004464	Antenna, VHF Whip, W/PO-150 Load	1 ea.
004477	Adapter, UHF-F to BNC-M	2 ea.
004489	Base Antenna, VHF W/ Grnd Planes	1 ea.
	Adapter, N-F to BNC-M	2 ea.
	Information Sheet, TDFM-136, Basic Programming	1 ea.
	Information Sheet, TDFM-136, Quick Reference Guide	1 ea.
	Information Booklet, TAF-550	1 ea.
	Flagging tape	1 ro.
	Filament tape	1 ro.
	Allen wrench	1 ea.
	Garbage bag	1 ea.
	Fuse, 5A-AGC (in rear of TAF-550)	1 ea.
	Fuse, 7.5A-MDL (in rear of TAF-550)	1 ea.
	Fuse, 3A-MDL (in rear of TAF-550)	1 ea.
	Fuse, 2A-MDL (in rear of TAF-550)	1 ea.
	115VAC power cable (in rear of TAF-550)	1 ea.
	Microphone, handheld (in rear of TAF-550)	1 ea.
004305	Mast, Antenna, 5 Ft. Section	6 ea.

NATIONAL INCIDENT RADIO SUPPORT CACHE
004670 SATELLITE PHONE KIT
(MOTOROLA)

TOTAL WEIGHT (BOX)	CU FT	DIMENSIONS (INCHES)
4.80	0.32	10 X 11 X 5

NFES #	DESCRIPTION	QTY ISSUED
004072	Motorola, 9505A, Sat. Phone	1 ea.
004175	Battery, Li-Ion, Iridium, 3.7V	1 ea.
004611	Antenna, Extendable, Iridium	1 ea.
004612	Antenna, Mobile Mag.	1 ea.
004613	Antenna, Adapter	1 ea.
004614	Holster, Sat. Phone	1 ea.
005087	Box, Pelican, 11"x10"x5"	1 ea.
004172	Adapter, Cigarette Lighter	1 ea.
	Earphones	1 ea.
004173	Charger, a/c-d/c Adapter	1 ea.

KIT

INSTALLATION

INSTRUCTIONS

4080 FLEXIBLE SOLAR PANEL KIT
NFES# 004080

Warning:

1. Do not transport a sealed lead acid battery (SLA) unless the battery terminals are covered to prevent a short circuit and the battery is strapped down and unable to shift while the vehicle is in motion.
2. Do not use the solar panel in conjunction with the disposable alkaline batteries that come with the repeaters. Alkalines are not rechargeable.

Instructions:

1. The flexible solar panel kit contains a sealed lead acid (SLA) battery that will provide 2 to 3 days of backup power in the event there is no sun. For additional backup power, purchase another battery at the incident. The spare must be a 12 Volt SLA (preferably a gel cell or AGM deep cycle marine battery). A battery capacity of at least 75 Amp-Hr is recommended. These batteries weigh 50 lbs.
2. Battery voltage will vary between 14 Volts and 10 Volts. The battery is nearly depleted if the voltage falls below 10.5 Volts with the repeater keyed.
3. Orient the solar panel to get the most sun. It will not work in the shade.
4. Secure the tent stakes at a 45 degree angle and three to four feet off each corner of the solar panel.
5. Secure the caribiners to the eyelets of the solar panel and secure the attached rope to the tent stakes.
6. Connect the components as shown on the cable block diagram.
7. If there is sun, observe the charging light on the charge controller. It turns on when the battery is charging and off when it is full.
8. Recycle any spare batteries locally.

4080 FLEXIBLE SOLAR PANEL KIT
NFES# 004080



4248/4312 SETUP PROCEDURE NIRSC STAND-ALONE REPEATERS

NFES# 004312 & NFES# 004248

1. Battery Supply. The battery is configured with a POLARIZED interconnect plug. If it becomes necessary to replace batteries, follow the battery hook-up illustration on the following page. Reversing polarity will result in an inoperative repeater. The repeater kit is shipped with the polarized plug disconnected and should be plugged in before the repeater is turned on.
2. Install the appropriate antenna per instructions included in this guide starting on Page# 107.
3. Coaxial Cable. DO NOT leave the cable coiled. Run the coaxial cable through the hole provided in the side of the shipping container. Connect to the repeater antenna port located in the box lid below the duplexer.
4. Verify that the UHF modules (right most TX and RX) are in the “OFF” position.
5. Ensure that the patch cords from the REPEATER CONTROL module are connected as follows: TX A to CNTL BUS A on Transmitter A and RX A to CNTL BUS A on Receiver A which are the left-most set of transmitter and receiver modules. NOTE: The patch cords may be connected to the other modules but will have no effect as long as the modules remain OFF.
6. The TX and RX tones are set by selecting the proper channel number using the TXA & RXA 16 - position Channel Select Switch on the REPEATER CONTROL Module. SEE THE CHANNEL/TONE CHART PROVIDED. “Straight Up” is Channel 1.
7. Close the lid tightly to prevent weather and rodent damage to the equipment. Put tape over the hole in the box where the coax comes through to prevent rain from entering the box.
8. After installation is complete, test the repeater using the appropriate portable radios before leaving the site. NOTE: BACK AWAY FROM THE REPEATER BOX A MINIMUM OF 25 FEET BEFORE TESTING.
9. If questions arise during installation, call the NIICD-CDO at (208) 387-5644.

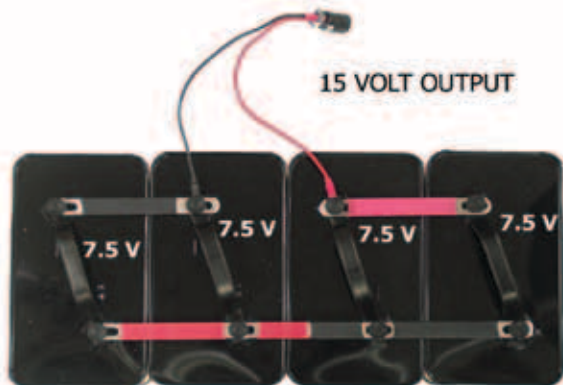
Note: Verify that the UHF Modules are in the “OFF” position when used as a stand-alone command repeater.



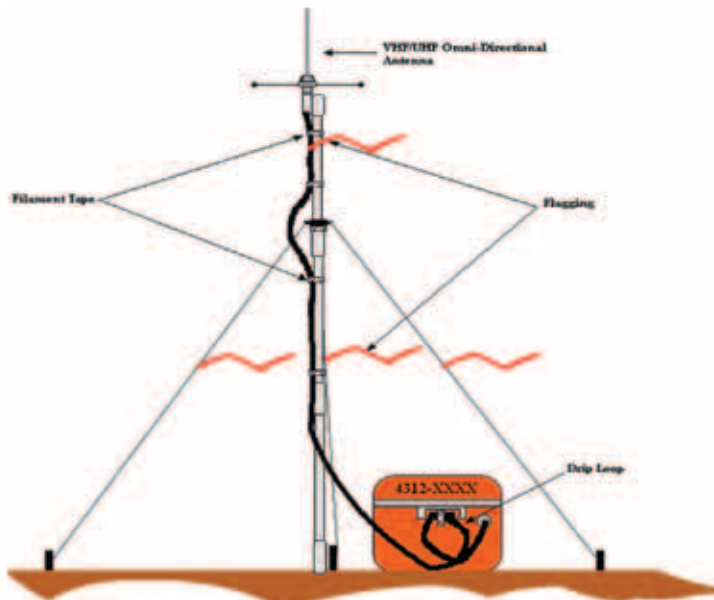
COMMAND/LOGISTICS REPEATER

NFES# 004312 & NFES# 004248

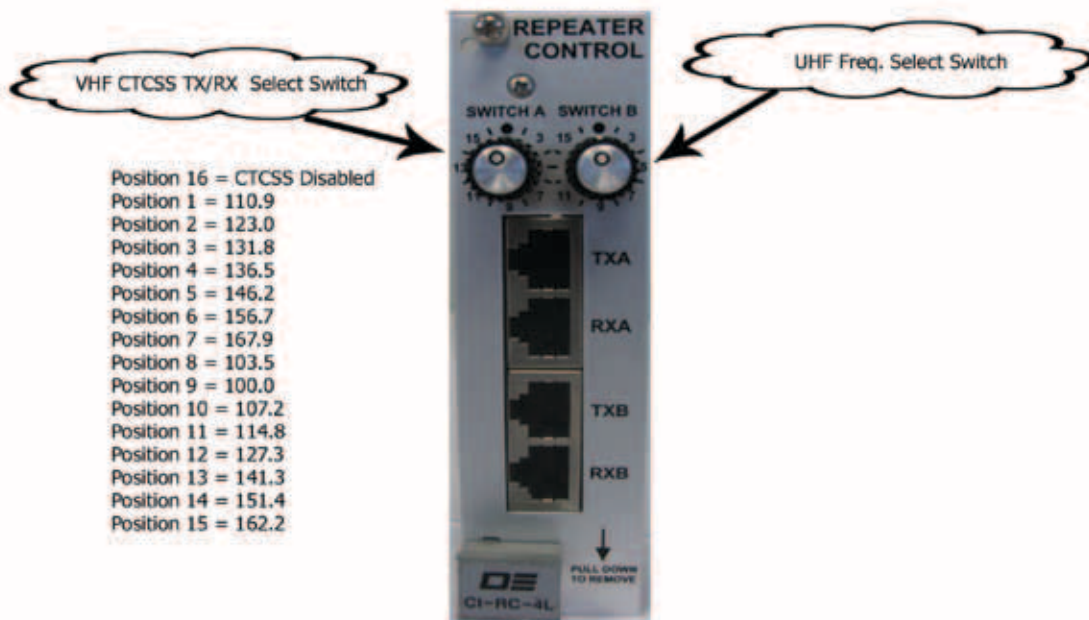
STAND-ALONE INSTALLATION INSTRUCTIONS



15 VOLT BATTERY CONFIGURATION



REPEATER (4312 & 4248) ANTENNA SETUP IN STAND-ALONE CONFIGURATION



A COMMAND REPEATER/LINK AUDIO CONTROL CARD

4312 SETUP PROCEDURES NIRSC REPEATER/LINK CONFIGURATION

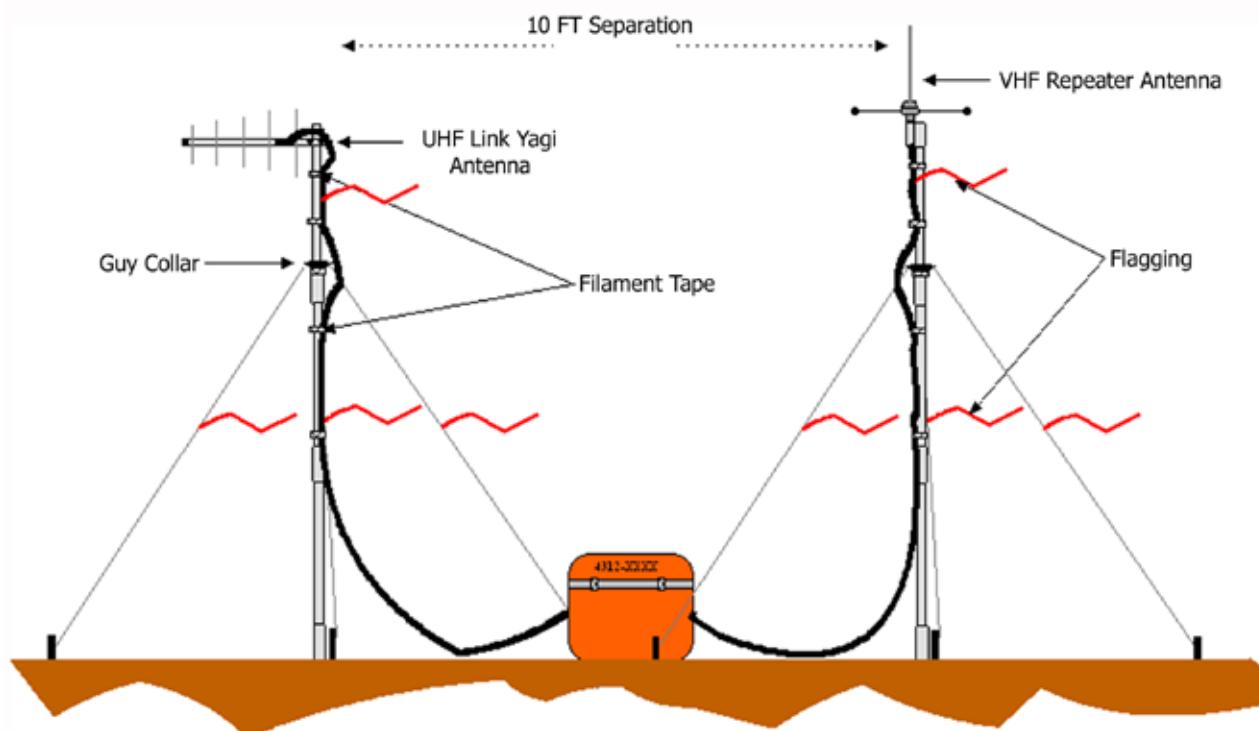
NFES# 004312

VHF REPEATERS ARE SENT OUT WITH UHF LINK RADIOS (Modules) INSTALLED.
NOTE: A CONFIGURATION DIAGRAM IS PROVIDED WITH EACH UNIT.

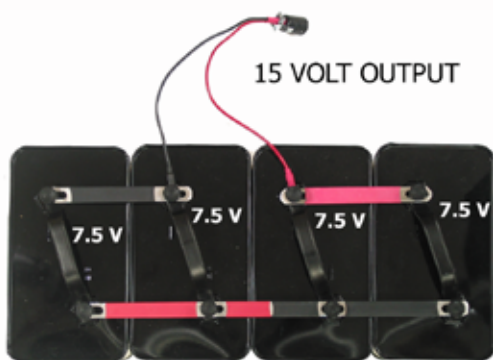
1. Verify that the repeater antenna is erected and the repeater coax is connected to the repeater port as detailed in the stand-alone repeater set-up procedure.
2. Erect the UHF Link Antenna (Yagi or Omni) according to the drawing. Attach the coaxial cable through the hole provided in the side of the fiberglass box to the Antenna Link port on the system monitor, using a 90 degree UHF connector (NFES# 4180) at the port.
3. The antenna coax should be fed out of the repeater box through the appropriate port. If done properly, the repeater and link coax cables will exit on opposite sides of the repeater box. The repeater box access ports are marked to facilitate proper installation. DO NOT FEED BOTH THE REPEATER AND LINK COAX CABLES OUT OF THE SAME ACCESS HOLE!
4. Verify the UHF modules (right most TX and RX) are in the “NORM” position.
5. Ensure that the patch cords from the REPEATER CONTROL module are connected as follows: TX A to CNTL BUS A on Transmitter A and RX A to CNTL BUS A on Receiver A, which are the left-most set of transmitter and receiver modules. TX B to CNTL BUS A on Transmitter B and RX B to CNTL BUS A on Receiver B which are the right most set of transmitter and receiver modules.
6. The TX and RX tones are set by selecting the proper channel number using the TXA & RXA 16 position Channel Select Switch on the REPEATER CONTROL Module. SEE THE CHANNEL/TONE CHART PROVIDED. “Straight Up” is Channel 1.
7. The UHF TX and RX frequencies are set by selecting the proper channel number using the TXB & RXB 16 position Channel Select Switch on the REPEATER CONTROL Module. The switch changes BOTH the transmit and receive frequencies at the same time. SEE THE CHANNEL/TONE CHART PROVIDED. “Straight Up” is Channel 1.
8. After installation is complete, test the repeater using the appropriate portable radios before leaving the site. NOTE: BACK AWAY FROM THE REPEATER BOX A MINIMUM OF 25 FEET BEFORE TESTING.
9. If questions arise during installation, call the NIICD-CDO at (208) 387-5644.



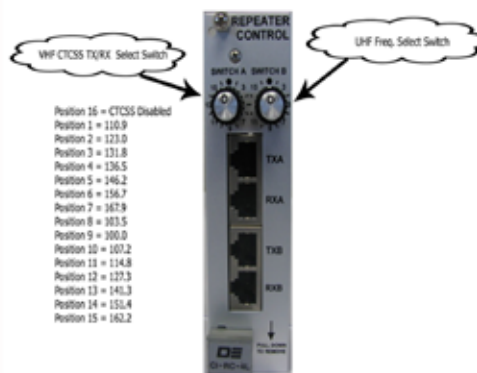
COMMAND REPEATER/LINK NFES# 004312 LINK CONFIGURATION INSTALLATION INSTRUCTIONS



REPEATER (4312) ANTENNA SETUP IN LINK CONFIGURATION



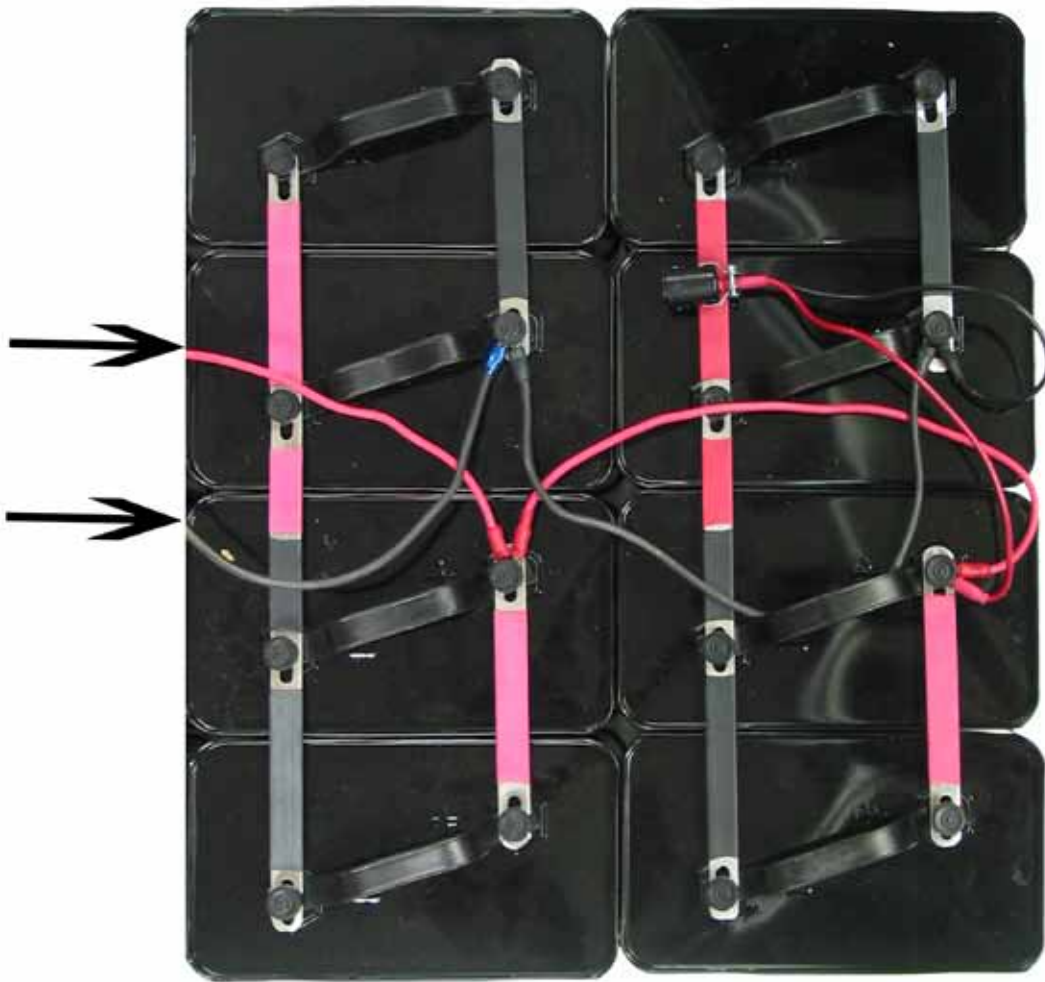
15 VOLT BATTERY CONFIGURATION



COMMAND REPEATER/LINK CONTROL CARD

+15 VOLT DUAL BATTERY CONFIGURATION
NFES# 001023

ADDITIONAL SETS OF 4 EA. NFES#1023 MAY BE INTRODUCED AT THIS LOCATION. ALTHOUGH, IT IS RECOMMENDED THAT AT THIS POINT A DEEP CYCLE RV/MARINE BATTERY AND CHARGER BE PURCHASED AND UTILIZED.



15 VOLT SERIES/PARALLEL CONFIGURATION
USES TWO (2) SETS OF 7.5 VOLT BATTERIES
NFES # 1023

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4300 GROUND VHF-AM BASE STATION KIT
NFES# 004300

ANTENNA SETUP: Connect one end of antenna cable to the base station antenna. Erect base station antenna and mast using guy ropes and stakes. Connect the other end of antenna cable to TBS-150 Ground VHF-AM Base Station.

VOLTAGE SELECTION: The TBS-150 can operate on 115 VAC or external 13 VDC power. **NEVER CONNECT BOTH 115 VAC and 13 VDC at the same time.**

For 115 VAC operation: Connect AC power cord into TBS-150 and 115 VAC outlets. Turn TBS-150 AC On/Off switch to ON. Turn 91-DE Power On/Off switch to On.

For external power/cigarette lighter operation: Connect 3 pin/cigarette lighter DC power cable into TBS-150 and supplied batteries or cigarette lighter. Turn 91-DE Power On/Off switch to On. Note: The TBS-150 AC On/Off switch only operates when 115 VAC is used.

MICROPHONE CONNECTION: Connect hand mic's 3-pin connector to 91-DE MIC connector. PTT operation is from the hand mic. **DO NOT transmit without the antenna connected.**

91-DE RADIO USE: The 91-DE radio is a 760 channel VHF-AM transceiver capable of 10 preset channels plus scanning. Frequency selection is via the keypad. Set Volume knob to mid-range. Adjust squelch knob until squelch just quiets. See enclosed Operating Instructions book for more information.

OTHER INFORMATION: The TBS-150 has 4 fuses: the 91-DE's fuse is a standard 5 amp; the TBS-150's AC fuse is a 2.5 amp MDL; the TBS-150's DC fuse is a mini 5 amp; the DC power cord is an overrated 10 amp fuse and is basically unused with the TBS-150 relying on the mini 5 amp fuse for DC protection.

This kit is designed for base station use only and will not be operated in an aircraft.

GROUND VHF-AM BASE STATION KIT

NFES# 004300



4330 REMOTE KIT
NFES# 04330X2 & NFES# 04330MD

This kit consists of one (1) box plus the antenna masts.

1. Remove the remote desk set from the box along with 2 ea.- 7.5 Volt Batteries (NFES# 1023). If AC power is not available, connect the batteries to the remote desk set using the provided wire assembly (**Fused DC 1 Amp, 3-prong cable**). If AC power is available, use the provided AC-DC transformer to power the remote desk set. Connect the external speaker to the side audio jack for better audio quality.

CAUTION: Observe correct polarity when using batteries. See drawing for correct battery strapping (CPI remote desk set uses + 15 volts).

2. Remove the gray chassis box. Select a location common to the desired service area that is within range of available communications wire supplied in the kit (**1/4 mile reels**).
3. Erect the appropriate antenna (UHF, VHF, UHF Yagi) and attach the coax cable from the antenna to the coax connector on the outside of the gray chassis box.
4. Connect the remote end of the communications wire pair to the remote chassis terminal lugs on the outside of the gray chassis box (**not polarity dependent**).
5. Open the grey box and determine if the correct radio is pre-mounted. If not, connect the adapter cable to the correct radio's side connector (UHF or VHF), and strap the radio into place on top of the black DC termination panel. Connect the male BNC side of the adapter cable to the female BNC side mount, and connect the male MIL Spec connector to the corresponding female side mount.
6. Connect power to the remote chassis using the provided 7.5 volt batteries (NFES #1023) or an external battery source. **Note: a fused DC 5 Amp, 2 prong cable is provided for external power.**

CAUTION: +10.5 to +15 volts is required for King radios.

7. After power up, select the correct radio group and channel that will be used for the incident. Ensure the radio volume knob is set to the **pre-designated mark** on top of the radio and adjust the squelch.
8. String the communications wire back to the site of the remote desk set. Attach the wires directly to the binding posts on the back of the CPI remote desk set (**not polarity dependent**)
9. Test and verify operation of the remote.

REMOTE KIT
NFES# 04330X2 OR NFES# 04330MD



REMOTE KIT
NFES# 04330X2 OR NFES# 04330MD
Desk Set Battery Setup

+15 Volts DC between red and black leads.

2 ea. NFES# 1023



4370 GROUND AIRCRAFT RADIO/LINK KIT

NFES# 004370

BASE STATION ONLY INSTALLATION

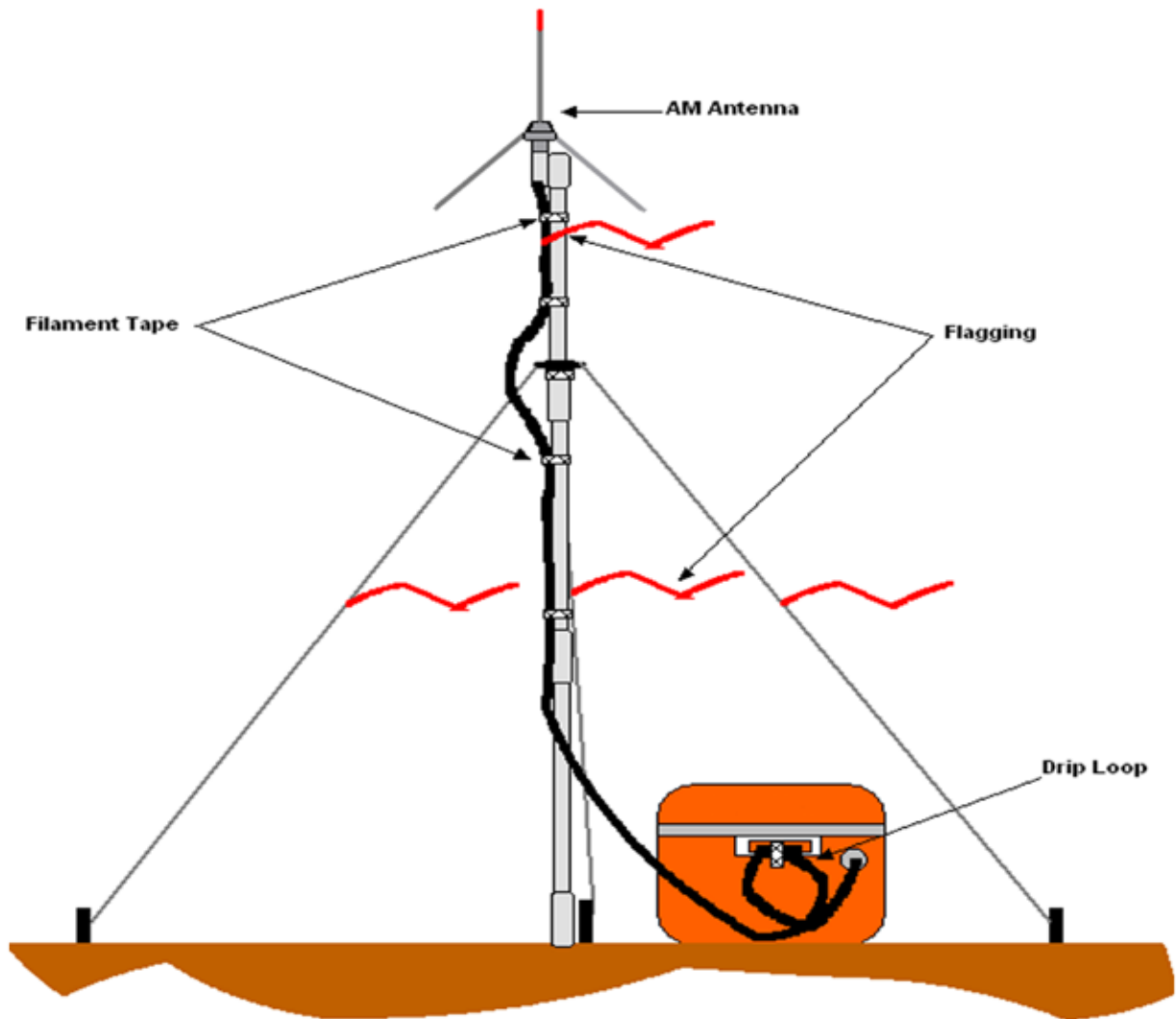
1. Erect the AV-1 aircraft antenna according to the drawing. Attach the coaxial cable through the hole provided in the left side of the fiberglass kit box to the Antenna A, AM port on the system monitor, using a 90° UHF connector (NFES# 4180) at the port.
2. Connect the battery leads as shown in the drawing. There are several power supply options available (12-15 Volts) and the corresponding cables are included in the kit. To power up the unit, connect the cable from the power source to the cable coming from the unit's sub-rack (there is no on/off switch).
3. Place the two toggle switches on the audio control module in the down position. Place the VHF/AM transmitter module toggle switch and the VHF/AM receiver module toggle switch in the "NORM" position and make sure that both UHF/FM modules' toggle switches are in the "OFF" position.
4. Connect the microphone to the AM transmitter module. To use the low power internal speaker, switch the system monitor audio toggle switch to the "A" position, place the system monitor rotary function switch in position #2, and turn the rotary volume knob up to the desired level.

To use the external high power speaker, connect the speaker leads to the system monitor "ME-TER" jacks, observing the correct polarity, switch the system monitor audio toggle switch to the "A" position, place the system monitor rotary function switch in position #1, and turn the system monitor rotary volume knob up to the desired level.
5. Set the desired AM frequency by turning rotary Switch A on the audio control module to the assigned channel. This switch controls both the transmitter and the receiver modules. Channel 1 is straight up. Channels 1 through 6 are preprogrammed with AM simplex frequencies according to the AM frequency chart. **Channel 16** is user-programmable through the modules' front display faces.
6. To program an authorized frequency into **channel 16** of either the receiver or transmitter module: Turn rotary Switch A on the audio control module to **channel 16**. Then unlock the unit by hitting the "*" button and, before the "LOCKED" display goes blank, hit the "**down arrow**" button. The display should now show "UNLOCKED". Wait for the display to blank, and then hit the "**down arrow**" button. When the display is showing the frequency, press and hold either the "**down arrow**" button or the "**up arrow**" button until the desired frequency is reached. The transmitter and receiver modules must be individually programmed. The unit is ready for base station operation.

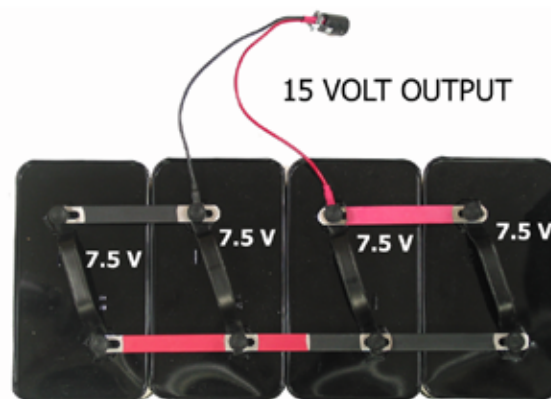
4370 GROUND AIRCRAFT RADIO/LINK KIT
NFES# 004370



4370 GROUND AIRCRAFT RADIO/LINK KIT BASE STATION CONFIGURATION



4370 AM OMNI ANTENNA SETUP



15 VOLT BATTERY CONFIGURATION

4370 GROUND AIRCRAFT RADIO/LINK KIT

NFES# 004370

AC RADIO/LINK INSTALLATION

1. Before setting up either antenna, keep in mind that maximum antenna separation is mandatory. Be sure that the antennas' coax cables will reach the sides of the AC Radio/Link Kit box and allow for a drip loop.
2. Erect the AV-1 aircraft antenna as shown in the drawing, keeping in mind separation and cable length. Attach the coaxial cable through the hole provided in the left side of the fiberglass kit box to the Antenna A, AM port on the system monitor, using a 90° UHF connector (NFES #4180) at the port.
3. Erect the UHF omnidirectional antenna as shown in the drawing, keeping in mind separation and cable length. Attach the coaxial cable through the hole provided in the right side of the kit box to the Antenna B, FM port on the system monitor, using a 90° UHF connector (NFES #4180) at the port.
4. Connect the battery leads as shown in the drawing. There are several power supply options available (12-15 Volts) and the corresponding cables are included in the kit. To power up the unit, connect the cable from the power source to the cable coming from the unit's subrack (there is no on/off switch).
5. Place the two toggle switches on the audio control module in the down position. Place both VHF/AM modules' toggle switches and both UHF/FM modules' toggle switches in the "NORM" position. Place the system monitor audio toggle switch in the center (OFF) position.
6. Set the desired AM frequency by turning rotary Switch A on the audio control module to the assigned channel. This switch controls both the transmitter and the receiver modules. Channel 1 is straight up. Channels 1 through 6 are preprogrammed with AM simplex frequencies according to the AM frequency chart. **Channel 16** is user-programmable through the modules' front display faces.
7. To program an authorized frequency into **channel 16** of either the receiver or transmitter module: Turn rotary Switch A on the audio control module to **channel 16**. Then unlock the unit by hitting the "*" button and, before the "LOCKED" display goes blank, hit the "**down arrow**" button. The display should now show "UNLOCKED". Wait for the display to blank, and then hit the "**down arrow**" button. When the display is showing the frequency, press and hold either the "**up arrow**" button or the "**down arrow**" button until the desired frequency is reached. The transmitter and receiver modules must be individually programmed.
8. Set the desired FM frequency by turning rotary Switch B on the audio control module to the assigned channel according to the UHF/FM frequency chart. This switch controls both the transmitter and the receiver modules. The unit is now ready for link operation. Before leaving the site, perform a radio test through both antennas using both a VHF/AM and a UHF/FM handheld radio. Step at least 40-50 feet away from the unit while performing the test.

4370 GROUND AIRCRAFT RADIO/LINK KIT
NFES# 004370

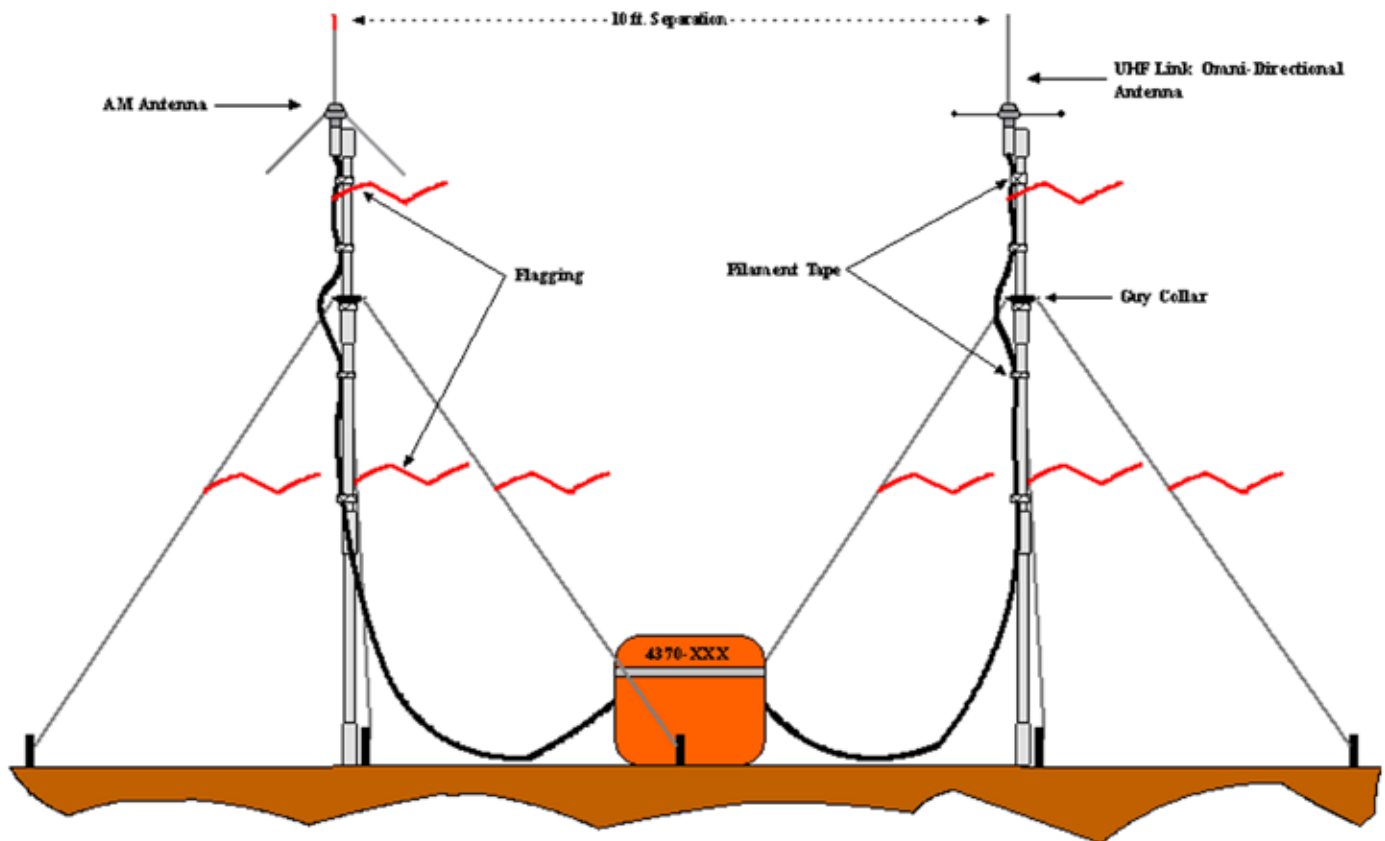


AUDIO CONTROL CARD FOR GROUND AIRCRAFT RADIO/LINK KIT
NFES# 004370

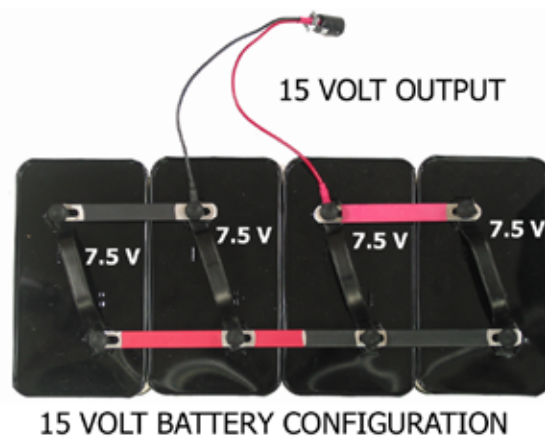


AUDIO CONTROL CARD FOR THE NFES #004370 AIRCRAFT LINK

4370 GROUND AIRCRAFT RADIO/LINK KIT
NFES# 004370
LINK CONFIGURATION INSTALLATION



AIRCRAFT LINK (4370) ANTENNA SETUP IN LINK CONFIGURATION



4410 PUBLIC ADDRESS KIT
NFES# 004410

The Public Address Kit consists of ONE (1) Model SW615A (PRIMARY) wireless powered speaker with internal 16-channel UHF Wireless Receiver, ONE (1) Model S1244-70 (SECONDARY) wireless powered speaker with external VHF Transmitter, and tools and accessories necessary for installation.

1. Install the power supply.

A. The battery pack is standard on both units. Slip fingernail under battery door on back of amplifier and slide it out. Remove battery holder from amplifier. Insert 10 new Alkaline “D” cell batteries. Be sure to observe polarity. Carefully replace battery holder. Slide door back into place.

Note: Do not mix battery types or attempt to recharge alkaline batteries. Equipment damage, safety hazard or fire could result.

B. Optional Model S1460 AC Adapter can be used instead of alkaline battery pack. Plug in to DC IN port on amplifier. Note: DO NOT USE ALKALINE BATTERIES IF USING THE AC ADAPTER.

2. The amplifier power switch is located on left of front panel. When turned on, the red LED will light.

3. The SW615A (PRIMARY) Amplifier connects to the wireless microphone through a UHF channel (1-16). Move the AUX power switch on the left side of the amplifier to the ON position. Verify that the wireless microphone and amplifier are on the same channel. The channel switch for the amplifier is located on the side of the unit.

4. Adjust the Main Volume Control on the left side of the amplifier for speaker volume.

5. To utilize the S1244-70 (SECONDARY) Amplifier, connect the Wireless Microphone Transmitter to the Line Out jack on the SW615A Amplifier using the 40' cable with 3.5mm plugs. Make sure the Wireless Transmitter and S1244-70 Amplifier Internal Wireless Receiver are set to the same channel (A or B). Turn on the S1244-70 Amplifier and adjust the Volume on the left side.

4410 PUBLIC ADDRESS KIT NFES# 004410

SET MICROPHONE AND
AMPLIFIER TO THE SAME
CHANNEL (1-16).



AMPLIFIERS CAN BE POWERED BY EITHER
10EA "D" CELL BATTERIES OR AN AC ADAPTER

WIRELESS MICROPHONE TRANSMITTER
CONNECTS TO THE OUTPUT - LINE OUT ON THE
AMPLIFIER USING 40' (FT) CABLE WITH 3.5MM
PLUGS.



SET WIRELESS MICROPHONE
TRANSMITTER AND AMPLIFIER TO
THE SAME CHANNEL (A OR B).



4499 AIR ATTACK KIT

NFES# 004499

October 22, 2010

The NFES# 004499 Air Attack Kit is a compact slip-in radio kit providing multiple VHF-FM radios for missions ranging from simple reconnaissance to complex Air Attack. The kit has two VHF-FM radios, two AUX-FM connections, and supports up to four operators. The kit operates on either 14 VDC or 28 VDC. A storage compartment in the kit holds no equipment.

1. **Kit Security:** The NFES# 004499 Air Attack Kit must be secured for safe flight using the kit's two silver "D" handles and the supplied adjustable straps. Secure the kit to any ridged structure in the cockpit (using common sense and keeping safety in mind).
 2. **Voltage Selection:** The NFES# 004499 Air Attack Kit has automatic voltage selection for 14 VDC or 28 VDC. Automatic voltage selection is dependent upon the aircraft's power connector supplying the correct voltage to the Air Attack Kit.
 3. **Aircraft Power and Audio Connections:** Aircraft must have an MS3112E12-3S (female) power connector in the aircraft (ground on pin B, and 14 volts on pin C or 28 volts on pin A). Only 14 or 28 VDC need be wired in the aircraft, **never wire both**. Attach power jumper cable from kit to MS3112E12-3S power connector in aircraft. Attach audio/mic jumper cable from kit to pilot's audio and mic jacks. **Aircraft mic jack must have PTT capability.**
 4. **Antenna Connections:** Aircraft must have a minimum of two broadband VHF-FM aviation antennas installed (Comant type CI 177-1 or equal) using RG-58 A/U or better coax cable terminated with male BNC connectors. Connect the first two aircraft VHF-FM antenna cables to the kit's RADIO 1 ANT and RADIO 2 ANT connectors. A third or fourth aircraft VHF-FM antenna(s) are for the AUX1 and AUX2 connections.
 5. **TFDM-136 Radio Use:** Operation and programming instructions are provided with the kit. Visit NIICD's website for up to date radio instructions at: <http://www.nifc.gov/NIICD/documents.html>
- FM 1 MAIN/GUARD (upper radio) and FM 2 MAIN (lower radio) may be reprogrammed to suit user needs. FM 2 GUARD preset is locked out and must never be reprogrammed. FM 2 GUARD is dedicated to Air Guard operation (168.6250), the emergency frequency.
6. **AUX-FM Connections:** Two AUX-FM connectors are located at the rear of the kit.
- These connectors allow handheld radios to be operated through the kit's audio selector panels as AUX1 and AUX2. The user must supply a handheld radio and matching AUX-FM adapter cable. Use the supplied female BNC barrel connectors to mate the AUX-FM radio adapter to aircraft antenna cable for AUX-FM operation. Any type handheld radio using any frequency band may be used (dependent upon the installed aircraft antenna's frequency band capability).
7. **Audio Selector Panel:** The TAC-250 is a dual audio selector panel for the pilot (left) and ATGS (right). Two observer positions operate off the ATGS's audio selector panel. Attach observer headset adapter cord assemblies at the rear of the kit. Observer positions have the same radio receive,

transmit, and VOX capability as selected by the ATGS's audio selector panel.

Transmitter Radio Selections:

1. COM uses the aircrafts' audio control system selector via the kits' audio/mic jumper cable.
2. FM1 is for the upper VHF-FM radio (beside the TAC-250).
3. FM2 is for the lower VHF-FM radio.
4. AUX1 is for the AUX-FM 1 connector.
5. AUX2 is for the AUX-FM 2 connector.
6. SC is for simulcast transmissions using COM and FM1 radios. SC transmits on both radios simultaneously.

The pilot's audio selector panel has transmit priority over the ATGS's audio selector panel when they both have the same radio selected on their respective transmitter selector switches.

Keep in mind there are three transmitter selector switches: (1) TAC-250 transmitter selector knob; (2) TDFM-136 radio MAIN & GUARD switch; and (3) the aircrafts' audio control selector panel switch.

Receiver Audio Selections:

1. COM uses the aircrafts' audio control system selector via the kits' audio/mic jumper cable.
2. FM1 is for the upper VHF-FM radio (beside the TAC-250).
3. FM2 is for the lower VHF-FM radio.
4. AUX1 is for the AUX-FM 1 connector.
5. AUX-FM 2 has no receiver selector (transmitter selector must be set on AUX2 to hear AUX2 audio).
6. SC "simulcast" receives both COM and FM1 simultaneously at a reduced audio level.

Audio Level: A receiver is automatically selected when its companion transmitter is selected on the audio selector panel. Receive (RX) volume level is the inner knob with VOX volume level being the outer knob.

VOX (Voice Activated Intercom): For no intercom, rotate the VOX knob fully CCW. Rotating VOX knob CW adjusts VOX activation level accordingly. VOX volume level is the outer knob with RX volume level being the inner knob.

NORMAL/EM/ISOL Switch: (1) NORMAL provides normal operation of VOX and amplified radio audio to all headset positions. (2) EM is emergency. The EM position operates in the same manner as the NORMAL position. (3) ISOL isolates the pilot's audio from the ATGS and both observers. The pilot will not be able to hear the ATGS or observers; however, the ATGS and observers will be able to hear the pilot and have normal intercom among themselves.

8. Other Information: Radio programming "D" connectors are located in the front of the kit. Both pilot and ATGS MIC jacks' have PTT capability using supplied PT-300 adapters. 28 VDC power input uses the 7.5 amp circuit breaker and normally draws 3 amps while transmitting. 14 VDC power input uses the 15 amp circuit breaker and normally draws 8 amps while transmitting.

AIR ATTACK KIT

NFES# 004499



4604 AIR ATTACK TRAINING KIT
NFES# 004604



4660 AIR BASE KIT
NFES# 004660



4670 MOTOROLA/IRIDIUM SATELLITE PHONE KIT

NFES #4670

Note: To get adequate reception from the satellite phone, it must be operated in an open area with no overhead obstructions blocking the phone's line-of-sight communications with the satellite. The antenna must be fully extended while receiving and placing phone calls.

1. Power the unit on by pressing the "Ⓜ" softkey on the lower left corner of the keypad.
The unit will display "Enter PIN:" after it boots up.
2. Enter the PIN number, 1111 via the keypad and press the "OK" softkey.
Wait about 10-15 seconds for phone to register with the satellite.
Once the phone is registered with the satellite it will display "Iridium". At this time the phone is ready to receive and place phone calls.
3. **To place a phone call From the Satellite Phone to a Land Line or Cell Phone:**
Press and hold the "0+" softkey until the "+" icon appears in the upper corner of the display.
Dial 1, and the area code and number. (Example: 1-208-387-5644)
Press the "OK" softkey to connect the call.

Note: When finished with the call, pressing the "OK" softkey to ends the call.
4. **To place a call From the Satellite Phone to another Satellite Phone**
Dial the 12-digit satellite phone number. (Example: 8816-414-89079)
Press the "OK" softkey to connect the call.
5. **To place a phone call To the Satellite Phone from a Land Line or Cell Phone:**
Dial 011 and the 12-digit satellite phone number, which is located on the side of the box and on the phone. (Example: 011-8816-414-89078)

Note: The end user must have the international access option enabled on their Land Line or Cell Phone to call the satellite number.
6. **Two-Stage Dialing To the Satellite Phone from a Land Line or Cell Phone without International Access enabled.**
Dial 1-480-768-2500.
When prompted, enter the 12-digit Iridium phone number and wait to be connected. (Example: 8816-414-89078),

Note: Satellite Phones will be charged \$1.65 per minute.
7. The charging jack is located under a small rubber cover on the lower left side of the Satellite Phone.

If questions arise, please call the NIRSC CDO at : (208)387-5644



Figure 1: 4670 Motorola Iridium Satellite Phone-Front View

OMNI-DIRECTIONAL ANTENNA INSTALLATION INSTRUCTIONS

Note: For easy removal of filament tape from masts and antenna parts, fold 1/4" to 1/2" of the end of the tape back onto itself. This provides a tab for pulling the tape off.

1. Place box/equipment at the desired antenna position.
2. Assemble the three mast sections.
Note: If the new style mast sections are used, assemble the two sections first, then place the guy collar on the end of the second mast before assembling the third mast section.
3. Lay the assembled mast on the open lid of the equipment box with the flared end resting on the ground and one section of the mast protruding beyond the lid of the box.
4. Wrap the flared end of the upper section with 5-10 wraps of filament tape. This will prevent the guy collar from slipping down when pulling on the guy ropes. **(See Figure A)**

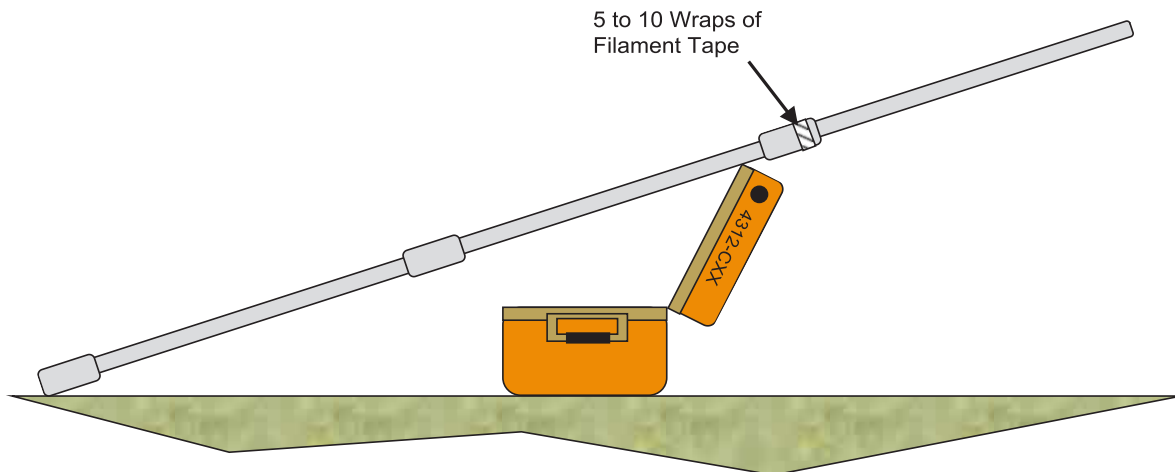


Figure A: Initial Mast Setup

5. Install the guy collar.
6. Install the antenna base onto the mast. Raise all radial elements to the set holes and insert white plastic locks into the holes.
Note: Wrap filament tape around the plastic locks to keep them from sliding out during high winds.
7. Connect the coax to the antenna base and secure the coax to the mast at three places with filament tape, 12 inches below the top of mast and 12 inches above and below the guy collar, with a loop around the guy collar to prevent chafing the coax. **(See Figure B)**
8. Install the appropriate antenna whip (UHF or VHF) on the antenna base.
9. Tear off a 2 to 3 foot long piece of flagging and tie it around the coax just below the antenna base. **(See Figure B)**

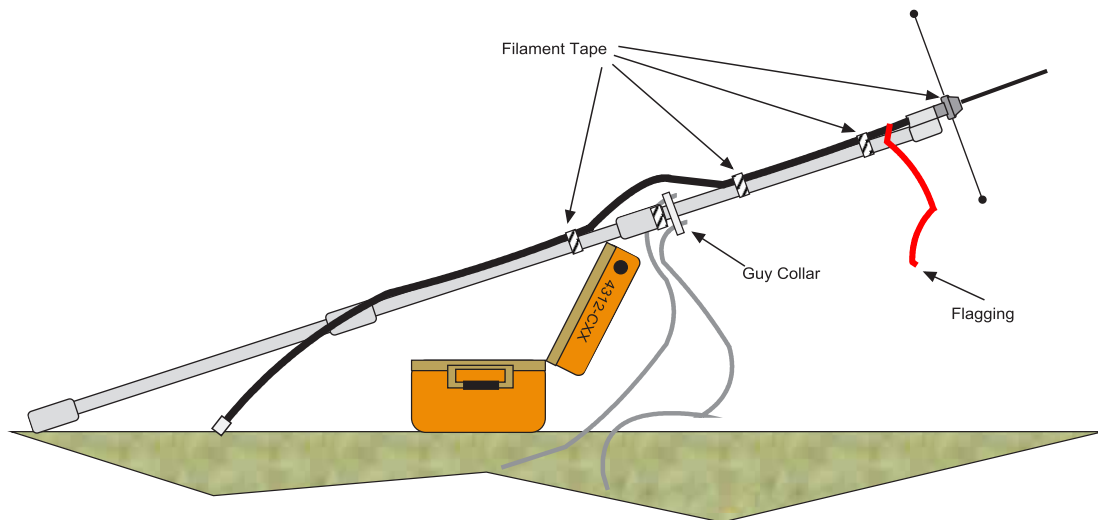


Figure B: Installing Guy Collar, Coax, and Antenna

10. Place two steel stakes, each 12 ft. (4 paces) perpendicular from the base of the antenna mast.

(See Figure C)

Note: Drive the stakes in at an angle, sloping away from the area where the equipment box and the antenna base will be located. Don't drive the stakes all the way down yet.

11. Securely tie the ropes from the guy collar to each of the two stakes with either a trucker's hitch or a taut line hitch, leaving enough slack in the rope to raise the antenna vertically.

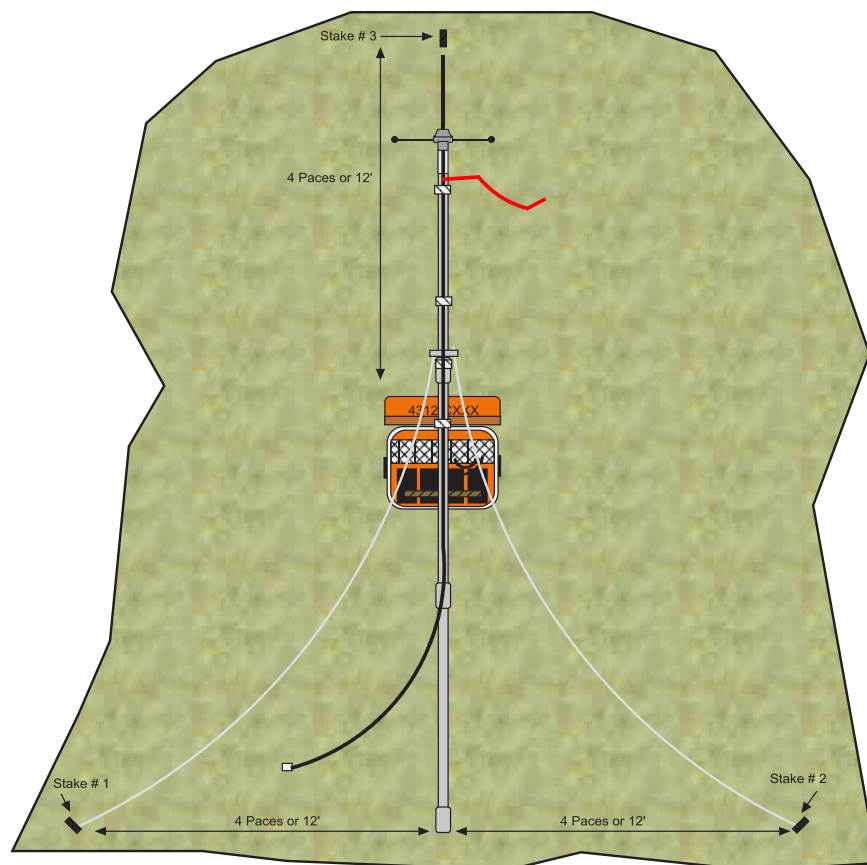


Figure C: Overhead View, Stake Placement

12. Stand the antenna up to nearly vertical and support it with the two guy ropes. (See **Figure D**)

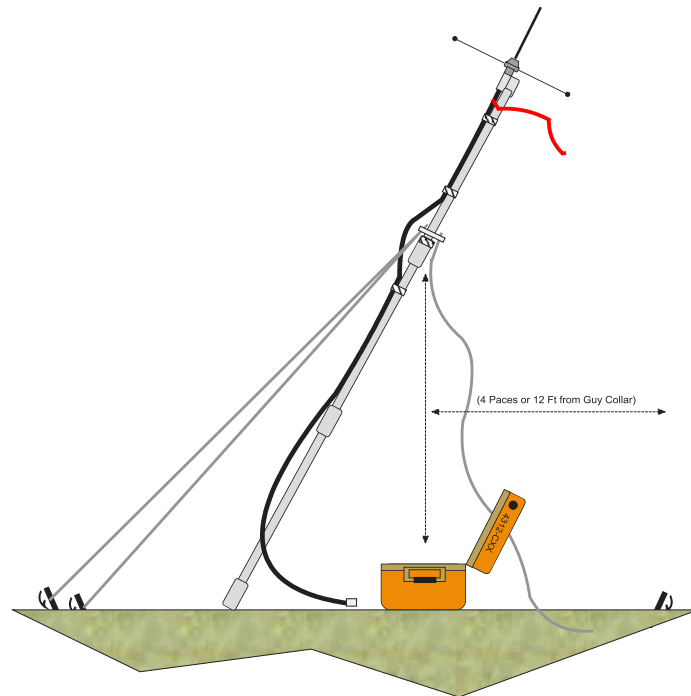


Figure D: Standing Antenna Vertically With Two Staked Ropes

13. Straight down from the guy collar, walk out 4 paces or 12 feet, or follow the setup drawing as in figure C and D.
Place the third stake at a location equidistant from the other two stakes and drive it in at an angle away from the antenna base.
14. Tie the remaining rope from the guy collar to the stake using either a trucker's hitch or taut line hitch.

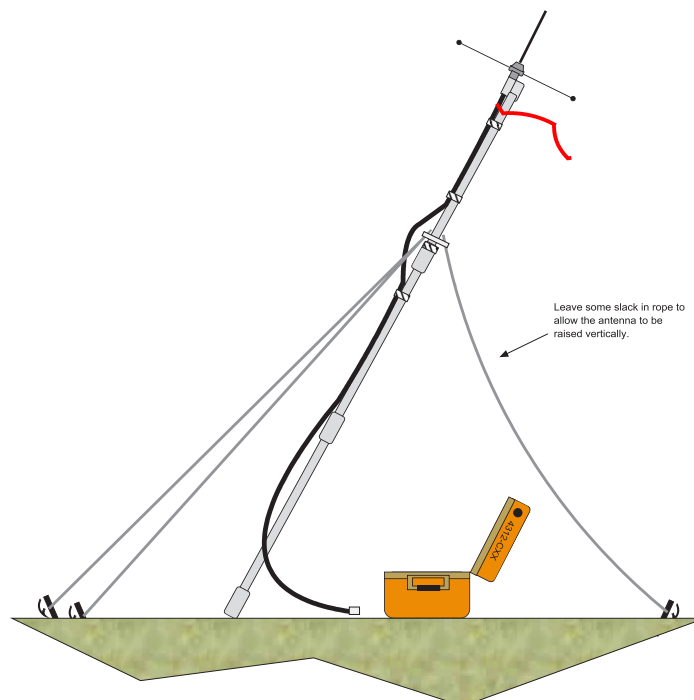


Figure E: Tying the Third Guy Rope

15. Stand the antenna vertically and tighten all three guy ropes. **(See Figure F)**

Note: Some tension might have to be relieved from the guy ropes in order to stand the antenna vertically.

16. Hammer the 3 stakes down until the hook is flush with the ground.

17. Install 2 to 3 foot long strips of flagging on guy ropes at eye level.

18. Route the coax through the hole in the box and connect to the corresponding connector in the box.

19. Tape coax to box handle in order to create a drip loop, provide strain relief, and prevent chafing.

20. Close lid and secure box by taping all uncovered holes of the box to prevent moisture and rodents from entering.

21. The antenna may be lowered by lifting up the base slightly and moving it towards the perimeter.

22. It may be desirable to put flagging around the perimeter of the stakes or the entire area.

23. Be sure to pick up all flagging, tape, and other debris when removing the equipment.

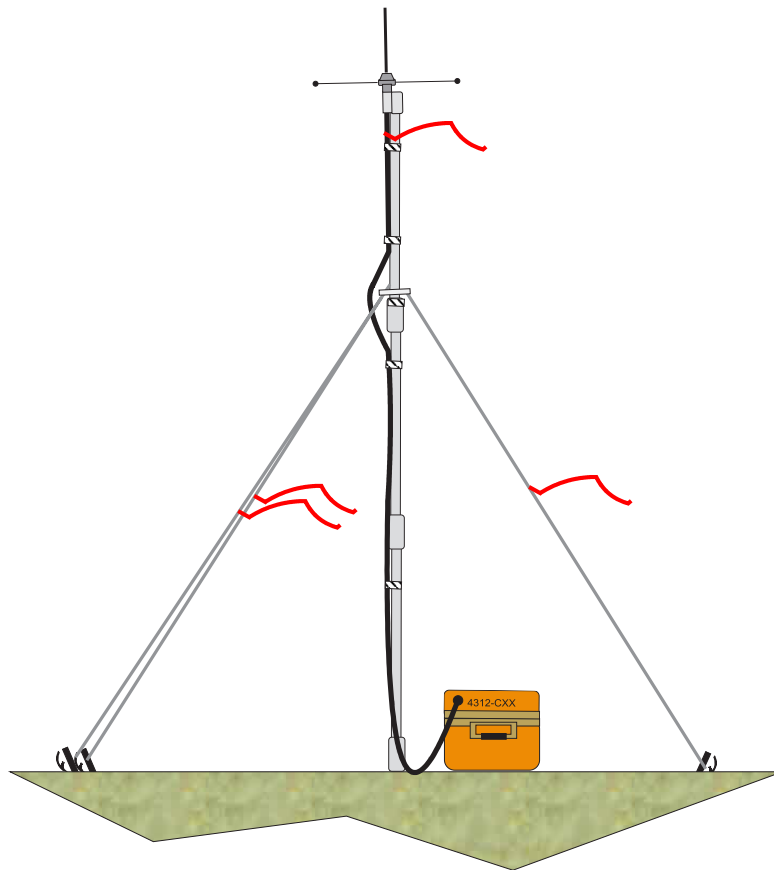


Figure F: Final Antenna Setup

Note: For easy removal of filament tape from masts and antenna parts, fold 1/4" to 1/2" of the end of the tape back onto itself. This provides a tab for pulling the tape off.

1. Move the box as far as possible in the direction of your target without straining the coax.
2. Rotate the box and open the lid so that the open lid will accommodate placing mast in line with the

desired target, and in line with two other stakes placed earlier.

3. Assemble the 3 mast sections.
4. Lay the assembled mast on the opened lid of the equipment box with the flared end resting on the ground and one section of the mast protruding beyond the lid in the direction of the desired target. (See **Figure G**)

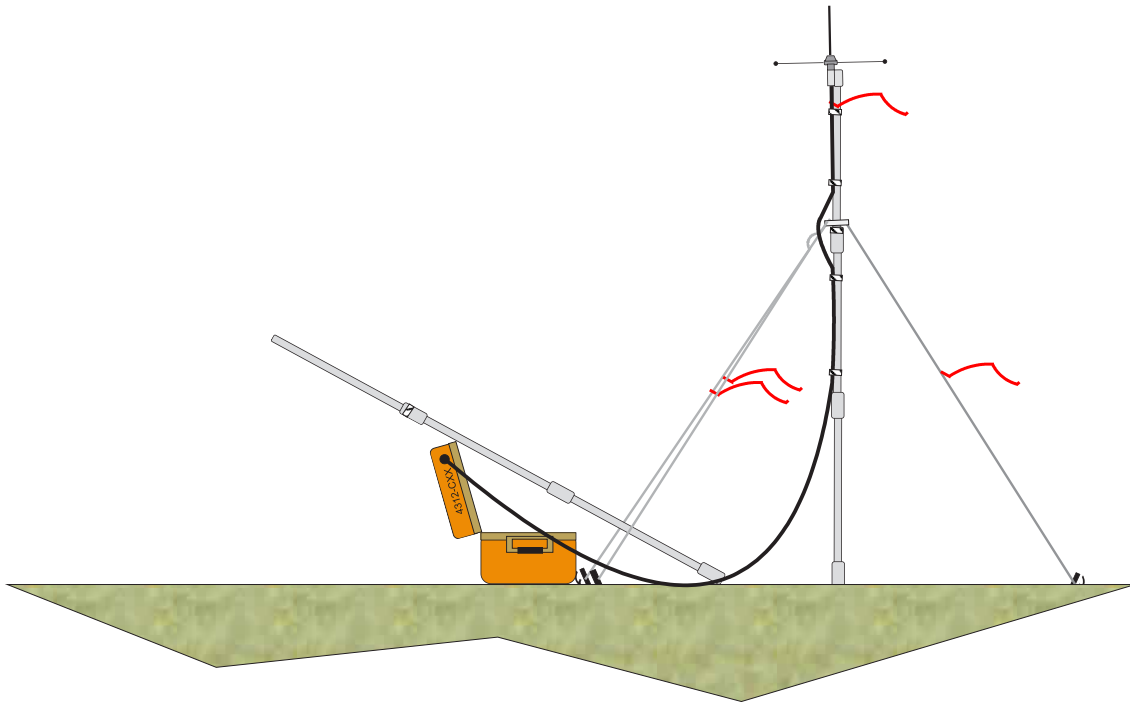


Figure G: Link Antenna Initial Setup

5. Wrap the flared end of the upper section with 5-10 wraps of filament tape to prevent the guy collar from slipping down.
6. Install the guy collar.
7. Install the antenna on the mast. If an omni-directional antenna is being used, be sure to match the proper antenna base and raise and tape the radials.
8. Connect the coax to the antenna base.
9. Secure the coax to the mast at three places with filament tape, 12 inches below the top of mast and 12 inches above and below the guy collar, with the loop around the guy collar to prevent chafing.
Note: If a Yagi antenna is used, the proper orientation can be maintained by tying the end of the antenna to a stake, a rock, or a small tree with the filament tape. (See Figure J)
10. Tear off a 2 to 3 foot piece of flagging and tie it around the coax just below the antenna base. (See **Figure H**)
11. Mark the spot just below the target-facing end of the mast. (Use a rock, flagging tape, etc.) This is where the base of your link antenna mast will sit. (See **Figure H & I**)

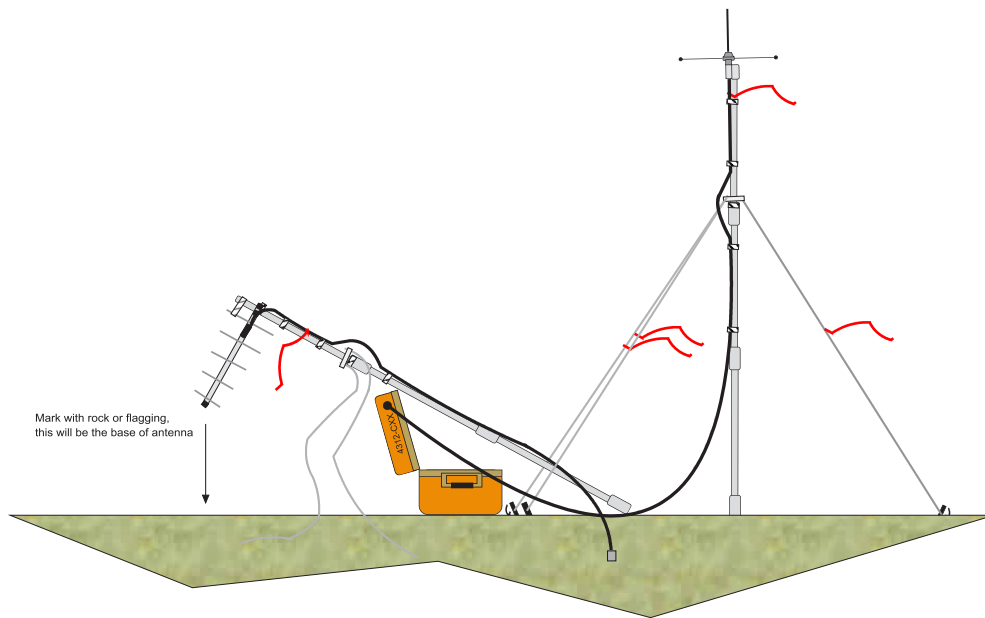


Figure H:

12. Place two steel stakes, each 12 feet (4 paces) perpendicular from the base of the equipment box.
(See Figure I)
Note: Drive the stakes in at an angle, sloping away from the area marked in step 11 where the antenna base will be located. Don't drive the stakes all the way down.
13. Securely tie the ropes from the guy collar to each of the 2 stakes with either a trucker's hitch or a taut line hitch.
Note: Leave enough slack in the guy ropes to raise the antenna vertically.

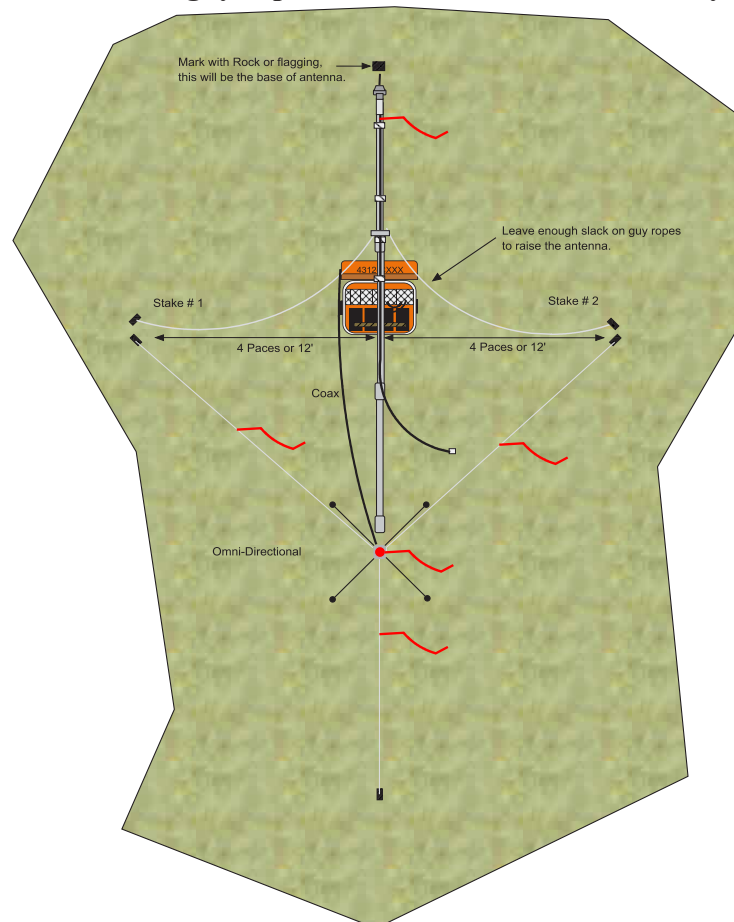


Figure I: Stake Placement on Linked Antenna

14. Stand the antenna up to nearly vertical with the base at the spot you previously marked, and support it with the two guy ropes.
15. Place the third stake at a location in line with your desired target equidistant from the other two and hammer it in at an angle.
16. Tie the remaining rope from the guy collar to the stake using either a trucker's hitch or a taut line hitch.
17. Stand the antenna vertically, and tighten any loose ropes.
18. Install 2 foot long strips of flagging on guy ropes at eye level. (See Figure J)
19. Route coax through the appropriate marked hole in the box and connect to corresponding connector.
20. Close lid and secure box, by covering any holes with filament tape to prevent moisture and rodents from entering box.
21. Tape coax to box handle to create a drip loop, provide strain relief, and prevent chafing.
 - ❑ The antenna may be lowered by lifting up the base slightly and moving it toward the perimeter.
 - ❑ It may be desirable to put flagging around the perimeter of the stakes or the entire area.
 - ❑ Be sure to pick all flagging, tape, and other debris, when removing the equipment.

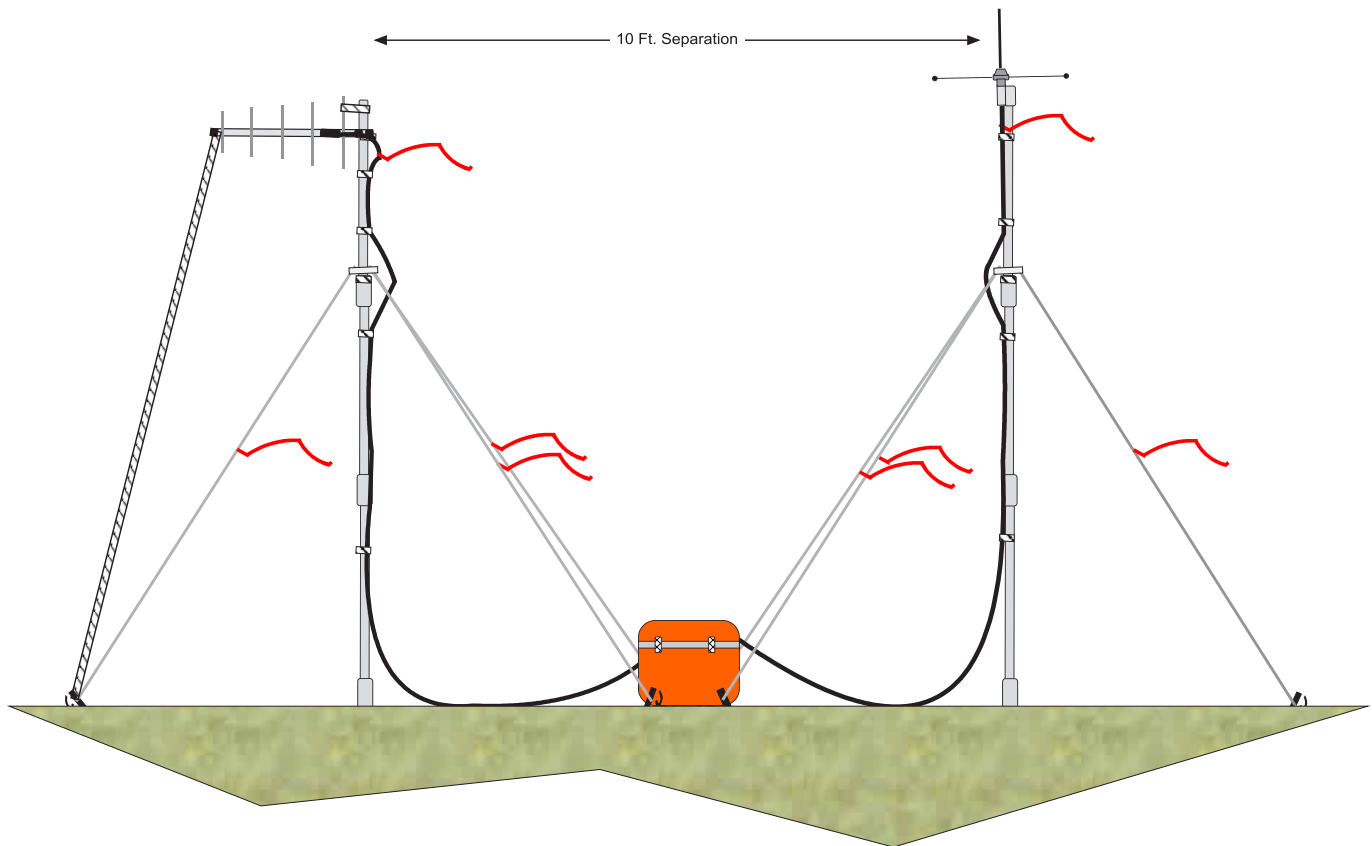


Figure J: Final Link Antenna Setup

PHOTOS COURTESY OF THE FOLLOWING:

NIICD FIELD OPERATIONS BRANCH

NIICD AVIONICS BRANCH

USDA-FS PHOTO ARCHIVES

USDOI-BLM PHOTO ARCHIVES

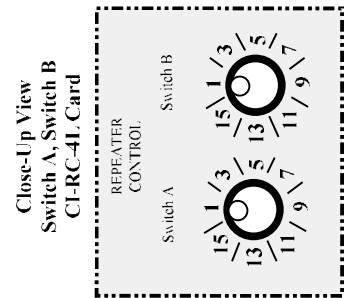
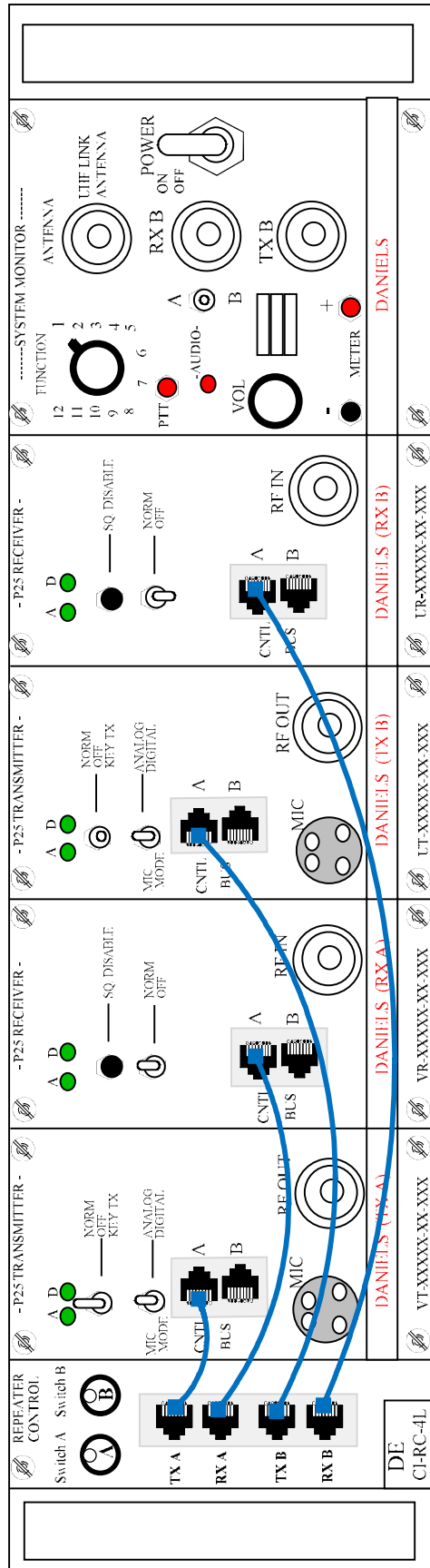
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APPENDIX A

DANIELS SWITCH SETTINGS

These diagrams are also available for download online at:

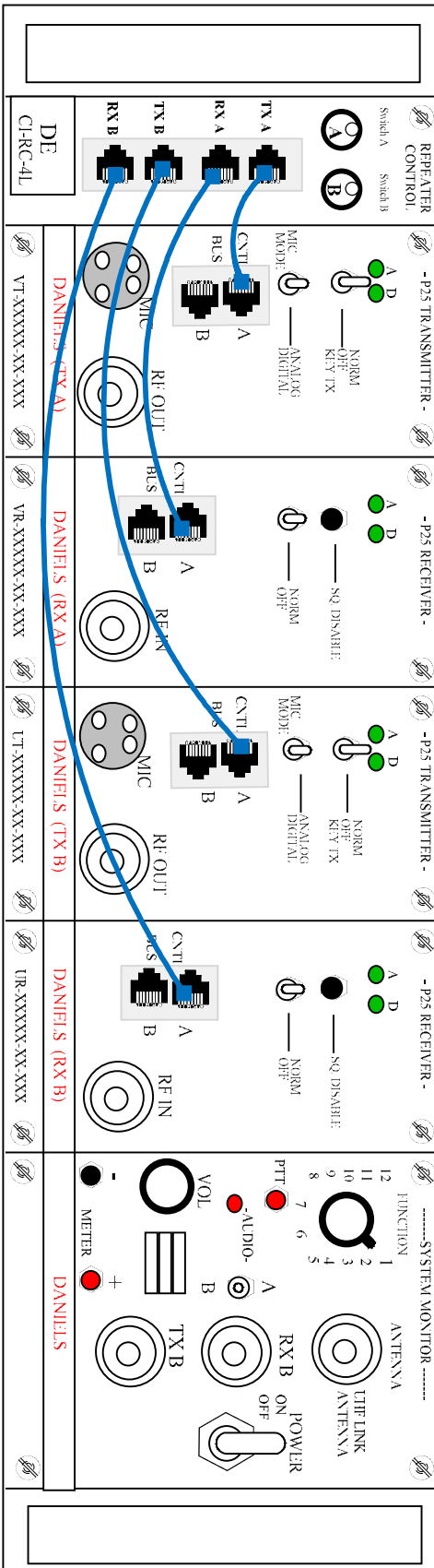
[Http://www.nifc.gov/NIICD/documents.html](http://www.nifc.gov/NIICD/documents.html)



National Interagency Fire Center National Interagency Incident Communications Division	
NIICD Switch Settings for Daniels Command Repeater and UHF Link (4312- Repeater Configuration Only)	
Designed by:	NIICD
Drawn by:	NIICD/J. Lopez
Revised Date:	March, 2013



DANIELS COMMAND REPEATER LINK SWITCH SETTING 4312-REPEATER/LINK CONFIGURATION



4312 - REPEATER/LINK CONFIGURATION:

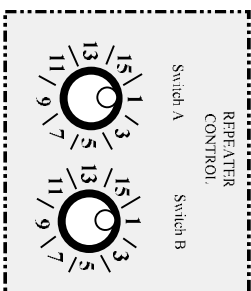
1. Connect the power cable to batteries using provided fused cable.
 2. Turn **Power** Switch to the "ON" position on the System Monitor.
 3. Keep switches on **TX A, RX A, TX B, and RX B** in "NORM" position.
 4. Keep the **A/B Audio Select** Switch on the System Monitor Module at the center position.
 5. Keep the **MIC MODE** switch on both **TX A** and **TX B** in the **ANALOG** position.
 6. Select the desired tone by turning the **Switch A** knob, located on the top portion of the CI-RC-4L Card, to enable the tone. (16-Position Knob, 1-16) [See [Tone Selection List and Note Below](#)]
 7. Select desired UHF Frequency by turning the **Switch B** knob to assigned UHF Frequency (16-Position Knob, 1-16). [See [UHF Link Frequency Selection List Below](#)]
- Note: Selecting a tone will enable the tone on both TX A and RX A modules. The Communications Duty Officer (CDO) will assign the appropriate tone.*

Switch A - Tone Selection List

- Position 1 - Tone 1 - 110.9
- Position 2 - Tone 2 - 123
- Position 3 - Tone 3 - 131.8
- Position 4 - Tone 4 - 136.5
- Position 5 - Tone 5 - 146.2
- Position 6 - Tone 6 - 156.7
- Position 7 - Tone 7 - 167.9
- Position 8 - Tone 8 - 103.5
- Position 9 - Tone 9 - 100.0
- Position 10 - Tone 10 - 107.2
- Position 11 - Tone 11 - 114.8
- Position 12 - Tone 12 - 127.3
- Position 13 - Tone 13 - 141.3
- Position 14 - Tone 14 - 151.4
- Position 15 - Tone 15 - 162.2
- Position 16 - No Tone

Switch B - UHF Link Frequency Selection List

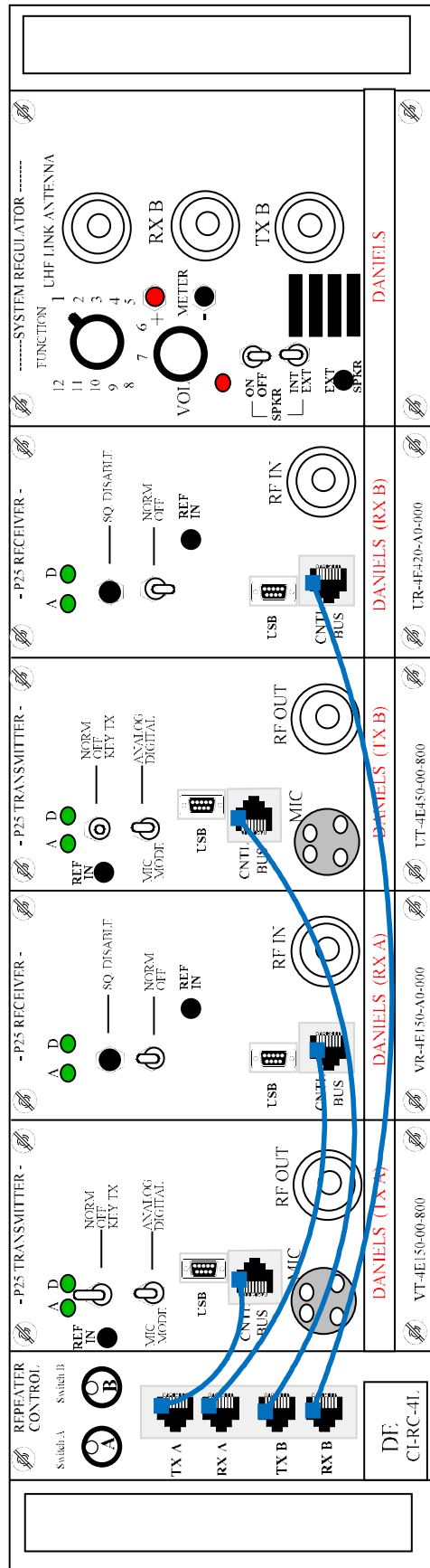
- Position 1 - L1 RPTR
- Position 2 - L2 RPTR
- Position 3 - L3 RPTR
- Position 4 - L4 RPTR
- Position 5 - L5 RPTR
- Position 6 - L6 RPTR
- Position 7 - L7 RPTR
- Position 8 - L1 RX SIMPLEX
- Position 9 - L2 RX SIMPLEX
- Position 10 - L3 RX SIMPLEX
- Position 11 - L4 RX SIMPLEX
- Position 12 - L5 RX SIMPLEX
- Position 13 - L6 RX SIMPLEX
- Position 14 - L7 RX SIMPLEX
- Position 15 - Special Use, SIMPLEX
- Position 16 - Special Use, SIMPLEX



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NIICD Switch Settings for Daniels Command Repeater and UHF Link (4312 - Repeater/Link Configuration)	
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Drawn by:	NIICD/J. Lopez
Revised Date:	March, 2013



DANIELS COMMAND REPEATER SWITCH SETTINGS 4312-REPEATER CONFIGURATION (E MODELS ONLY)



4312 - REPEATER CONFIGURATION (E-MODELS ONLY)

1. Connect the power cable to batteries using provided fused cable. Once power cable is connected, all modules are active (no master power switch).
2. Keep the switches on the TX A and RX A in the "NORM" position.
3. Keep the switches on the TX B and RX B in the "OFF" position (Stand Alone Repeater Configuration- No Linking).
4. Keep the MIC MODE switch on both TX A and TX B in the "ANALOG" position.
5. Keep the speaker audio off by switching the Speaker Switch on the System Regulator to the "OFF" position.
6. Select the desired tone by turning Switch A knob, located on the top portion of the CI-RC-4L Card, to enable the tone (16-Position Knob, 1-16).

(See Tone Selection List Below)

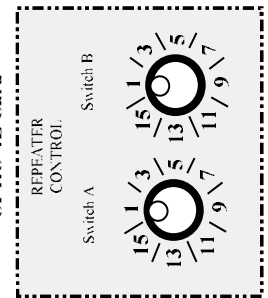
Note: Selecting a tone will enable the tone on both TX A and RX A modules.

The Communications Duty Officer (CDO) will assign the appropriate tone.

Switch A - Tone Selection List

- Position 1 - Tone 1 - 110.9
- Position 2 - Tone 2 - 123.0
- Position 3 - Tone 3 - 131.8
- Position 4 - Tone 4 - 136.5
- Position 5 - Tone 5 - 146.2
- Position 6 - Tone 6 - 156.7
- Position 7 - Tone 7 - 167.9
- Position 8 - Tone 8 - 103.5
- Position 9 - Tone 9 - 100.0
- Position 10 - Tone 10 - 107.2
- Position 11 - Tone 11 - 114.8
- Position 12 - Tone 12 - 127.3
- Position 13 - Tone 13 - 141.3
- Position 14 - Tone 14 - 151.4
- Position 15 - Tone 15 - 162.2
- Position 16 - No Tone

Close Up View
Switch A, Switch B
CI-RC-4L Card



To Enable Audio to Internal Speaker for troubleshooting:

1. Enable the speaker by switching the Speaker switch located on the System Regulator Module to the "ON" position.
2. Select the desired receiver audio, A or B, by turning the Function Switch located on the System Regulator to position 3 for RX Audio A or position 5 for RX audio B.

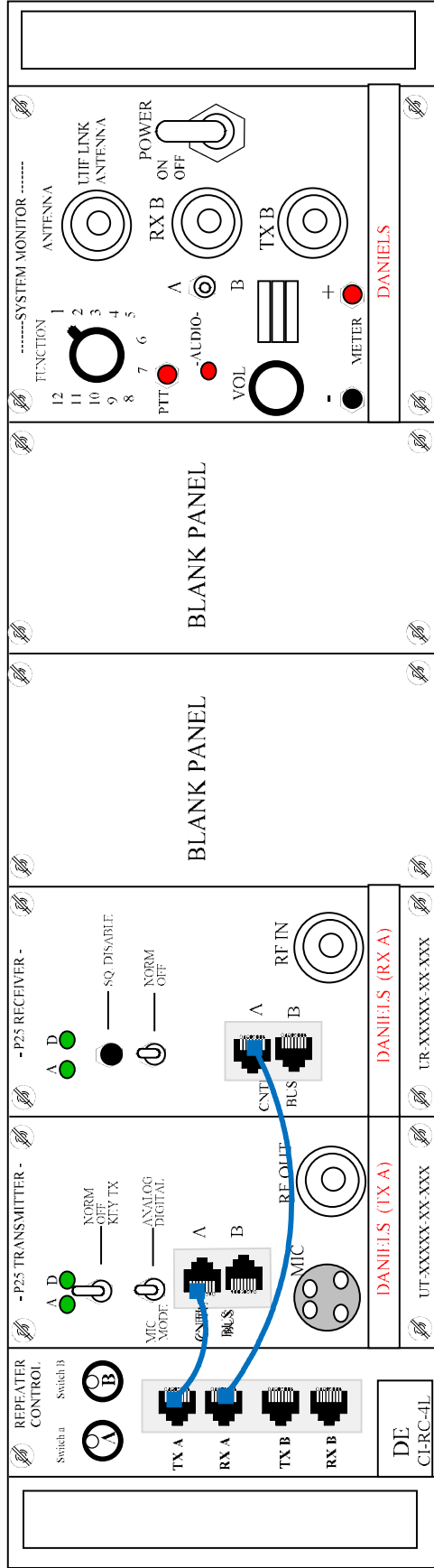
Note: Select "INT" on the System Regulator Module to enable the audio to the external speaker.

National Interagency Fire Center National Interagency Incident Communications Division	
NIICD Switch Settings for Daniels Command Repeater and UHF Link (4312- Repeater Configuration E-Models Only)	
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Revised Date:	March, 2013





DANIELS LOGISTICS REPEATER SWITCH SETTINGS 4248 - UHF REPEATER CONFIGURATION

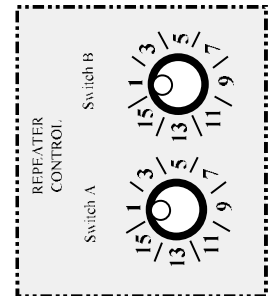


4248 - UHF REPEATER CONFIGURATION:

1. Connect the power cable to batteries using provided fused cable.
2. Turn the **Power** Switch to the "ON" position on the System Monitor.
3. Keep the power switches on the **TX A** and **RX A** modules in "NORM" position.
4. Keep the **Mic Mode** on the **TX A** in the "ANALOG" position.
5. Keep the A/B Audio Select Switch on System Monitor Module at the center position.

Note: No tones are available on the *Logistics Repeater*.

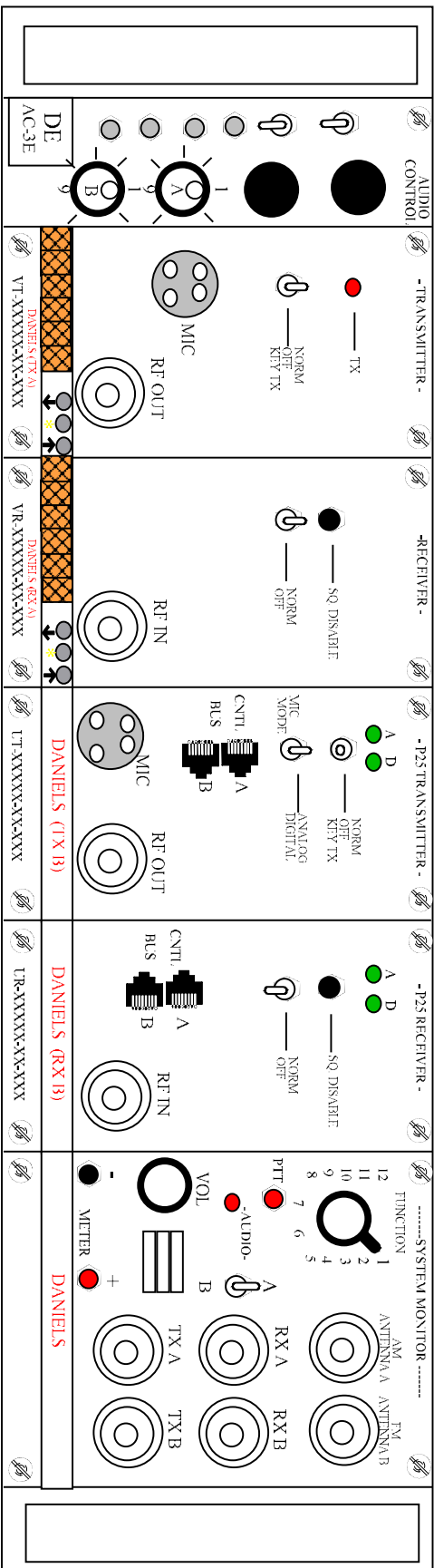
Close Up View
Switch A, Switch B
CL-RC-4L Card



National Interagency Fire Center National Interagency Incident Communications Division	
NIICD Switch Settings for Daniels Logistics Repeater (4248 - UHF Repeater Configuration)	
Designed by:	NIICD
Drawn by:	NIICD/J. Lopez
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DANIELS AIRCRAFT RADIO/LINK SWITCH SETTINGS (4370 - AIRCRAFT BASE CONFIGURATION)



4370 - AIRCRAFT RADIO/LINK - BASE CONFIGURATION:

1. Keep both CTCSS switches located on the AC-3E module in the "OFF" (down) position.
2. Keep the power switches on the TX A and RX A in "NORM" position.
3. Keep the power switches on the TX B and RX B in "OFF" position.
4. Keep the Audio Select Switch on System Monitor Module in the A position to activate the internal speaker, and place the rotary switch on the System Monitor to position #1.
5. Select the correct AM frequency for TX A and RX A using the 16-position rotary Switch A on the AC-3E Module (top rotary switch, 16-Position Knob: 1-16).

Note: For special AM frequencies, select channel 16 on rotary Switch A to manually program the AM TX and RX modules via the front panel (top rotary switch).

Note: The AM transmitter and receiver modules must be individually programmed.

Place rotary switch on the System Monitor to position #1 for EXTERNAL Speaker ONLY.

Note: Programming Authorized Special AM frequency into Channel 16: The Communications Duty Officer (CDO) will assign the appropriate AM Frequency issued by the FAA.

1. Turn The rotary Switch A (top rotary switch) on the Audio Control Module to Channel 16.
2. Unlock the unit by pressing the "*" button and, before the "locked" display goes blank, press the "V" button. The display should now show "Unlocked".
3. Wait for the display to blank, then press either the "A" or "V" button to display the current programmed frequency.
4. While the display is showing the frequency, press and hold either the "A" or "V" button until the desired frequency is reached.
5. Lock each unit by pressing the "*" button and before the "Unlocked" display goes blank, press the "A" button.

The display should now show "Locked".

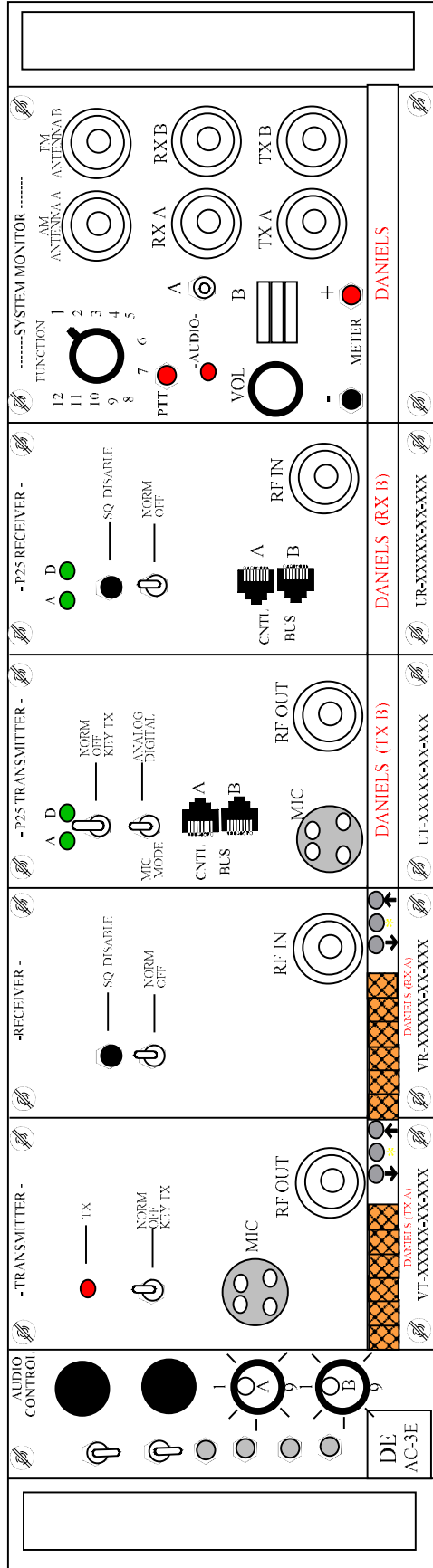
Note: The AM transmitter and receiver modules must be individually programmed.

The unit is now ready for base station operation.

National Interagency Incident Communications Division	
National Interagency Fire Center	
NIICD Switch Settings for Daniels Aircraft Link	
(4370 - Aircraft Radio/Link - Base Configuration)	
Designed by:	NIICD
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Revised Date:	March, 2013



DANIELS AIRCRAFT RADIO/LINK SWITCH SETTINGS (4370 - AIRCRAFT LINK CONFIGURATION)



4370 - AIRCRAFT RADIO/LINK - LINK CONFIGURATION:

1. Keep both CTCSS switches located on the AC-3 module in the "OFF" position.
2. Keep The power switches on TX A, RX A, TX B, and RX B in the "NORM" position.
3. Keep the MIC MODE on the TX B in the ANALOG position.
4. Keep the A/B Audio Select Switch on the System Monitor Module at the center position.
5. Select the correct assigned AM frequency for TX A and RX A using the 16-position rotary Switch A on the AC-3E Module (top rotary switch, 16-position knob: 1-16).

Note: For special AM frequencies, select channel 16 on the rotary Switch A to program the AM TX and RX modules. (top rotary switch)

Note: Select the correct assigned FM UHF link frequency for the TX B and RX B using the 16-position rotary Switch B on the AC-3E Module (bottom rotary switch).

Note: The Communications Duty Officer (CDO) will assign the appropriate FM UHF link frequency. See A/C FM UHF Link Frequency List Below.

Note: Programming Authorized special AM frequency into Channel 16: The Communications Duty Officer (CDO) will assign the appropriate AM Frequency issued by the FAA.

1. Turn the rotary Switch A (top rotary switch) on the Audio Control Module to Channel 16.
2. Unlock the unit by pressing the "L" button and, before the "Locked" display goes blank, press the " " button. The display should now show "Unlocked".
3. Wait for the display to blank, then press either the " " or " " button to display the current programmed frequency.
4. While the display is showing the frequency, press and hold either the " " or " " until the desired frequency is reached.
5. Lock each unit by pressing the "L" button and before the "Unlocked" display goes blank, press the " " button.

Note: The AM transmitter and AM receiver modules must be individually programmed.

The unit is now ready for link operation.

Switch B - UHF Frequency Selection List (CDO will assign appropriate UHF Link Frequency)

Switch B - UHF Frequency Selection List (CDO will assign appropriate UHF Link Frequency)

Switch B - UHF Frequency Selection List (CDO will assign appropriate UHF Link Frequency)

Switch B - UHF Frequency Selection List (CDO will assign appropriate UHF Link Frequency)

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Switch B - UHF Frequency Selection List (CDO will assign appropriate UHF Link Frequency)

Switch B - UHF Frequency Selection List (CDO will assign appropriate UHF Link Frequency)

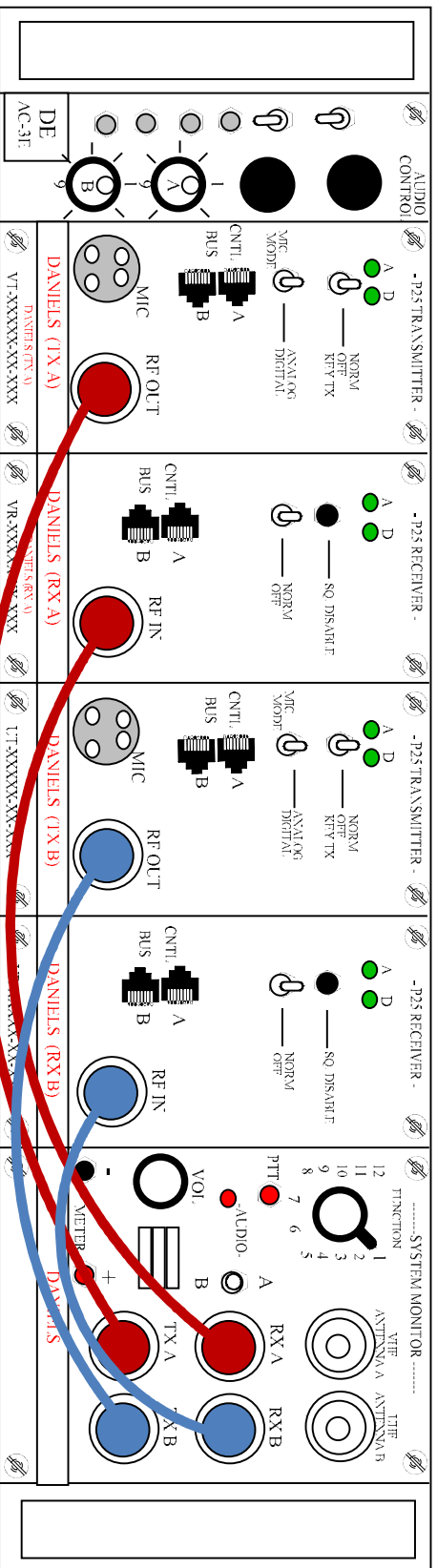
Switch B - UHF Frequency Selection List (CDO will assign appropriate UHF Link Frequency)

Switch B - UHF Frequency Selection List (CDO will assign appropriate UHF Link Frequency)

National Interagency Fire Center National Interagency Incident Communications Division	
NIICD Switch Settings for Daniels Aircraft Link (4370 - Aircraft Radio/Link - Link Configuration)	
Designed by:	NIICD
Drawn by:	NIICD/J. Lopez
Revised Date:	March, 2013



DANIELS CROSS-BAND LINK SWITCH SETTINGS (4281 - CROSS-BAND LINK VHF TO UHF)



4281 Cross-Band Link - Link Configuration:

1. Connect the power cable to batteries using provided fused cable.

Note: Once power cable is connected, all modules are receiving voltage, but each module still needs to be individually turned on to operate.

- Turn on each module "ON" by keeping the power switches on TX A, RX A, TX B, and RX B in the "NORM" position.
 - Keep both CTCSS switches located on the AC-3E module in the "OFF" (down) position.
 - Keep the Audio Select Switch on System Monitor Module in the center position to disable the internal speaker.
 - Select the assigned VHF frequency for the TX A and RX A modules using the 16-position rotary switch A on the AC-3E Module (top rotary switch, 16-Position Knob: 1-16). See VHF Frequency Selection List Below
 - Select the assigned UHF frequency for the TX B and RX B modules using the 16-position rotary switch B on the AC-3E Module (bottom rotary switch, 16-Position Knob: 1-16). See UHF Frequency Selection List Below
- Note: The Communications Duty Officer (CDO) will assign the appropriate VHF and UHF Frequencies based on the system design.**

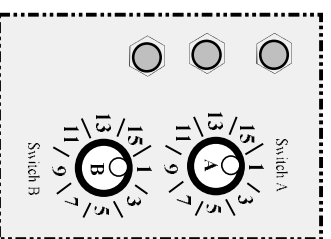
Switch A - VHF Frequency List

- Position 1 - C1 RPTR
- Position 2 - C2 RPTR
- Position 3 - C3 RPTR
- Position 4 - C4 RPTR
- Position 5 - C5 RPTR
- Position 6 - C6 RPTR
- Position 7 - C1 RPTR
- Position 8 - C1 SIMPLEX
- Position 9 - C2 SIMPLEX
- Position 10 - C3 SIMPLEX
- Position 11 - C4 SIMPLEX
- Position 12 - C5 SIMPLEX
- Position 13 - C6 SIMPLEX
- Position 14 - C1 SIMPLEX
- Position 15 - Special Use 1
- Position 16 - Special Use 2

Switch B - UHF Frequency List

- Position 1 - L1 RPTR
- Position 2 - L2 RPTR
- Position 3 - L3 RPTR
- Position 4 - L4 RPTR
- Position 5 - L5 RPTR
- Position 6 - L6 RPTR
- Position 7 - L7 RPTR
- Position 8 - L1 SIMPLEX
- Position 9 - L2 SIMPLEX
- Position 10 - L3 SIMPLEX
- Position 11 - L4 SIMPLEX
- Position 12 - L5 SIMPLEX
- Position 13 - L6 SIMPLEX
- Position 14 - L7 SIMPLEX
- Position 15 - Special Use 1
- Position 16 - Special Use 2

Close-Up View of
Switch A and Switch B on
the AC-3E Card



National Interagency Fire Center National Interagency Incident Communications Division	
NICD Switch Settings for Daniels Cross-Band Link (4281 - Cross-Band Link VHF to UHF)	
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Revised Date:	March, 2013

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APPENDIX B

RADIO PROGRAMMING GUIDES

These diagrams are also available for download online at:

[Http://www.nifc.gov/NIICD/documents.html](http://www.nifc.gov/NIICD/documents.html)

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

KING DPH PORTABLE RADIO ANALOG PROGRAMMING GUIDE

Page 1 of 5, Version 2014

1. Turn on radio and select a group and channel you wish to program

2. Access Program Mode

- o Insert a programming plug into the side connector of the radio.
- o Press and hold the red Master Switch on the programming plug.
- o Press and hold the "FCN" key for approximately three seconds until the LCD displays " -- -- -- ID". (See Figure 1)
- o Enter a valid password. **NIFC Default password is set to "000000"**
- o Press the "ENT" key to proceed into the programming mode.
- o If the correct password was entered, the LCD displays " ^{PRG} CH00". (See Figure 2)

3. Once in Program Mode, select a 2-digit channel number (01-16) to program using the keypad.

Note: Once a channel is entered, pressing the "FNC" key will scroll through that particular channel settings.

4. Once the desired channel is entered and displayed, the **Bandwidth Setting** can be set.

Press the "#" key to toggle between Wide-Band and Narrow-Band. (See Figure 3)

Note: The "N" indicates that the channel is set for Narrow-Band operation, No indication for Wide-Band operation.

5. Once the Bandwidth is set, press the "FCN" key to scroll to the next programming parameter.

The LCD will display " ^{PRG RX} 162.5500" for programming the **RX Frequency**. (See Figure 4)

Press the "CLR" key to clear the current frequency and enter a valid VHF RX frequency and press the "ENT" key.

6. The LCD will display " ^{PRG RX} MODE-A" for programming the **RX Mode**. (See Figure 5)

Press the "PRI" key to toggle between "A", "D", or "M". Select "A" press the "ENT" key.

Note: A=Analog Channel, D=Digital Channel, and M=Mixed Mode Channel

7. The LCD will display " ^{PRG RX CG} 000.0" for programming the **RX Code Guard**. (See Figure 6)

Press the "CLR" key to clear the tone and enter a valid tone using the keypad and press the "ENT" key.

Note: Enter "000.0" for no tone.

8. LCD will display " ^{PRG RX IDCG} NAC0659" for programming the **RX Network Access Code**.

This is a Digital Channel Function, press the "ENT" key to skip to the next programming parameter.

9. The LCD will display " ^{PRG RX ID} SQL--NRM" for programming the **Squelch Setting**. (See Figure 7)

Press the "PRI" key to toggle between "NRM", or "SEL". Select "NRM" and press the "ENT" key.

Note: "SEL" is used only in Digital or Mixed Mode to use Talk Groups or Individual Call Functions.

10. LCD will display " ^{PRG TX} 168.05000" for programming the **TX Frequency**. (See Figure 8)

Press the "CLR" key to clear the current frequency and enter a valid VHF TX frequency and press the "ENT" key.

11. LCD will Display " ^{PRG TX} MODE-A" for programming the **TX Mode**. (See Figure 9)

Press the "PRI" key to toggle between "A", "D", or "M". Select "A" and press the "ENT" key.

Note: A=Analog Channel, D=Digital Channel, and M=Mixed Mode Channel

12. LCD will display " ^{PRG TX CG} 110.9" for programming **TX Code Guard**. (See Figure 10)

Press the "CLR" key to clear the current tone and enter a valid tone using the keypad and press the "ENT" key.

Note: Enter "000.0" for no tone.

13. LCD will display " ^{PRG TX IDCG} NAC0659" for programming the **TX Network Access Code**.

This is a Digital Channel Function, press the "ENT" key to skip to the next programming parameter.

14. LCD will display the " ^{PRG ID} TG00001" for programming the **TX Talk Group ID**.

This is a Digital Channel Function, press the "ENT" key to skip to the next programming parameter.

15. LCD will display the channel name/label, press the "ENT" key to keep name/label and finish programing the channel or press the "CLR" key to change the name/label for that channel. (See figure 11)

16. Changing Channel Label

- o Press the "CLR" key to clear the label.
- o Press the "PRI" key to scroll through available Alphanumeric Characters.
- o Press the "FCN" key to enter a character and shift to the left for the next character.
- o Repeat the process until desired name/label is entered and press the "ENT" key.

Note: LCD is an 8 Character display. NIFC Default is set to display the Numeric Characters only in the "CH 00" parameters.

17. Once the label is entered, the program will bring the first channel parameter up, channel programming is complete. At this point the user may select another channel to program by starting on step 3 or exit the program mode by cycling power to the radio.



Figure 1



Figure 2



Figure 3

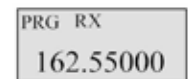


Figure 4

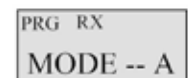


Figure 5

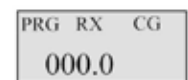


Figure 6



Figure 7

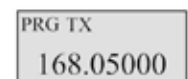


Figure 8



Figure 9

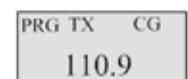


Figure 10



Figure 11

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION
KING DPH PORTABLE RADIO SETTINGS/OPTIONS
Page 2 of 5, Version 2014

ADD/REMOVE CHANNELS FROM SCAN LIST

1. To **ADD channel to Scan List**, select a channel to scan with the channel select knob and press the " ENT" key.
LCD will display " **SCN**" in the upper section, indicating that the current displayed channel is in the scan list. (See Figure 1)
2. To **REMOVE channel from Scan List**, select the channel to remove with the channel select knob and press the " CLR" key.
"SCN" will be removed from the upper section of the LCD.

Note: Scan must be disabled in order to add or remove channels from the scan list, by toggling the "SCAN" and "PRI" toggle switches in the down position. (Toward the front of the radio)



Figure 1

ADD PRIORITY SCAN CHANNEL

1. To select a channel as a Priority Scan Channel, select a channel and press the " PRI" key. (See Figure 2)
LCD will display " **PR**" in the upper section, indicating that the current displayed channel is now the Priority 1 Channel.
Note: Scan must be disabled in order to add or remove the Priority 1 Channel, by toggling the "SCAN" and "PRI" toggle switches in the down position. (Toward the front of the radio)
Priority 2 Channel can only be changed in the "CH 00" parameters. (See "CH 00" Settings on page 4)

In order to set the Priority Channel with the keypad, Priority Mode must be either set to B, C, or D.
NIFC Default is Priority Mode A, Priority Channel follows the position of the channel select switch, so the user can not change the Priority Channel via the keypad.

Note: Enabling PRI Scan will only scan the Priority Channel(s). In order to scan the scan list channels and the Priority Channel(s), both the Scan and PRI Toggle switches must be enabled.



Figure 2

ENABLE/DISABLE SCAN/PRIORITY SCAN

1. **Enable Scan**, by toggling the Scan Toggle Switch to the up position. (Toward the back of the radio)
LCD will indicate scan is enabled by flashing " -- --" in the right side of the display if alphanumeric mode is disabled. (See Figure 3)
or
LCD will indicate scan is enabled by flashing " **SCN**" in the upper part of the display if alphanumeric mode is enabled.



Figure 3

2. **Disable Scan**, by toggling the Scan Toggle Switch to the down position. (Toward the front of the radio)
3. **Enable Priority Scan**, by toggling the PRI Toggle Switch to the up position. (Toward the back of the radio)
LCD will indicate Priority Scan is enabled by flashing " -- --" in the right side of the display and with a " **PR**" icon in the top portion of the display if alphanumeric mode is disabled. (See Figure 4)
or
LCD will indicate Priority Scan is enabled by flashing " **SCN**" in the upper part of the display if alphanumeric mode is enabled.
4. **Disable Priority Scan**, by toggling the PRI Toggle Switch to the down position. (Toward the front of the radio)
Note: Depending on what type of Priority Scan Mode is enabled, the LCD will display and operate differently for each priority mode. Check the priority mode in the "CH 00" Group Settings.
NIFC Default is set to Priority Mode A.



Figure 4

CHANGING GROUPS

1. Press the "#/" key followed with the 2-digit number of the desired group and press " ENT" or wait 3 seconds. (See Figure 5)
Note: All DPH NIFC model radios have a 25 group capacity.
Groups 1-4 contain the Standard NIFC Frequencies.



Figure 5

TX USER SELECTABLE TONES

1. To **Enable Selectable Tone**, press one of number keys (1-9) to select a preprogrammed TX User Selectable Tone.
Display will indicate a TX User Selectable Tone is enabled by displaying the " **CG**" icon in the top portion of the LCD.
If Alphanumeric Mode is Disabled, display will also indicate the selected TX User Tone. (See Figure 6)
2. To **Disable Selectable Tone**, press the "0" key on the keypad.
Note: NIFC default is TX User Selectable Tones Disabled. Tones can be enabled through the "CH 00" functions.



Figure 6

HI/LOW POWER SETTINGS

1. **Select Low Power** by toggling the LO/HI Toggle Switch to the up position. (Toward the back of the radio)
2. **Select High Power** by toggling the LO/HI Toggle Switch to the down position. (Toward the front of the radio)
Note: NIFC Low Power setting is set to 2.0 Watts, High Power setting is set to 5.0 Watts. (Current draw dependent)

ENABLE/DISABLE KEYPAD

1. To **Disable keypad**, press and hold the " FNC" key until the LCD displays " **LOCKED**". (See Figure 7)
2. To **Enable keypad**, press and hold the " FNC" key until the LCD displays " **UNLOCKED**". (See Figure 8)



Figure 7



Figure 8

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CLONING RADIO SETTINGS (See Figure 5)

1. Assure that both radios are off and attach the Master end of the cloning cable to the side connector of the Master radio. Attach the Clone/Slave end of the cloning cable to the side connector of the radio being cloned to.
2. Turn both radios on.
Assure each radio is in the corresponding group before continuing with the cloning process.
3. Put the Master radio in programming mode by holding down the Master Switch and pressing the " FCN" key on the radio until the LCD displays (-- -- -- ID). (See Figure 1)
4. Enter a valid password, if requested, and press the " ENT" key. (NIFC Default Password is set to "000000")
The LCD will display " CH 00" if the correct password was entered. (See Figure 2)
5. Press the "*" key on the Master radio.
The LCD will flash "PROG", indicating that the radio is ready to download. (See Figure 3)
6. Press the "FCN" key to download to clone/slave radio.



Figure 1



Figure 2



Figure 3



Figure 4

Note: To stop "FAIL" mode, press the "CLR" key, turn off the radios, and start the cloning process again.
When the Master radio downloads to a clone, the Scan List and Priority Channel designations are also downloaded to the clone radio.
Group Password are also downloaded between DPH and GPH Model radios, NIICD recommends not modifying the Group Password when programming radios.



Figure 5: King DPH Cloning Connections

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KING DPH PORTABLE RADIO "CH 00" SETTINGS

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1. Select a group you wish to program.
 2. Access the Program Mode to enter the "CH 00" Settings. *(See Figure 1) (See Access Program Mode on page 1)*
 3. Once "CH 00" is displayed, press the "FNC" key to scroll to the first "CH 00" parameter.
 4. The display will indicate "PRG 0000000" for the **Group Password**. *(See Figure 2)*
Press the "ENT" if no change is required and advance to the next programming parameter
Note: NIFC does not recommend changing the group password, Default password is set to "P000000"
 5. The display will indicate "PRG ID 0000000" for the **Group Automatic Numeric Identification** parameter (ANI). *(See Figure 3)*
This is used as either a radio management number or transmitted as a DTMF tone. Press the "ENT" or "FNC" key to advance to the next field. *(NIFC Default is set to "0000000")*
 5. The display will indicate "PRG TX 160 SEC" for the **Transmit Tim-Out Timer (TOT)** duration. *(See Figure 4)*
To change the TOT, press the "PRI" key to increase the TOT duration and press the "ENT" to store value and advance to the next field. *(NIFC Default is set to "120 SEC") A TOT value of 0.0 Seconds, disables the TOT.*
 6. The display will indicate "PRG SCN 2.0 SEC" for the **Scan Delay Time**. *(See Figure 5)*
To change the Scan Delay Time, press the "PRI" key to increase the duration and press the "ENT" key to store and advance to the next field. *(NIFC Default is set to "2.0 SEC")*
 7. The display will indicate "PRG PR1 OFF" for programming a **Priority 1 Channel**. *(See Figure 6)*
To change the Priority 1 Channel, press the "PRI" key to select a channel or turn OFF the function and press the "ENT" key to store and advance to the next field. *NIFC Default is set to "OFF"*
Note: Priority 1 Channel can be programmed as a fixed channel, selected by the channel select knob, or OFF. If the PRI 1 is set as fixed, it can be changed through the front keypad by pressing the "PRI" key.
 8. The display will indicate "PRG PR2 OFF" for programming the **Priority 2 Channel**. *(See Figure 7)*
To change the Priority 2 Channel, press the "PRI" key to select a channel or turn OFF the function and press the "ENT" key to store and advance to the next field. *NIFC Default is set to "OFF"*
Note: Priority 2 Channel can only be changed via the "CH 00" parameters.
 7. The display will indicate "PRG 1--12345" for the **Group 1 Functions**. *(See Figure 8)*
The group functions can be enabled or disabled by pressing the number key corresponding to that function.
- CH 00 Group 1 Functions** NIFC Default is "1-12345" *(See Figure 8)*
- 1-12345.....**Battery Saver** (Disables the Battery Saver Function for current drain on battery life.)
 1-12345.....**Group Scan** (Enables the current group to be scanned while in Group Scan Mode.)
 1-12345.....**TX on PRI 1** Enables transmission on PRI 1 when PRI Scan is Enabled.)
 1-12345.....**Priority Key Lockout** (Enables the Lock out of the "PRI" key, so user can not change the Priority 1 Channel.)
 1-12345.....**Scan List Lockout** (Enables the Scan List Lock out, so user can not add/remove channels from the scan list.)
- CH 00 Group 2 Functions** NIFC Default is "2-12345" *(See Figure 9)*
- 2-12345.....**User Code Guard** (Enables keypad to independently select a Channel Code Guard value from programmed channels.)
 2-12345.....**Busy Channel Indicator** (Yellow LED illuminates when signal is received on selected channel.)
 2-12345.....**Busy Channel Lockout** (Yellow LED illuminates and PTT is disabled when a signal is received on selected channel.)
 2-12345.....**Busy Channel Lockout/Over-ride** (Same as Busy Channel Lockout, but PTT can be activating the Squelch Code Guard.)
 2-12345.....**ANI** (Enables the ANI ID number to be transmitted with each press of the PTT as a DTMF tone.)
 2-12345.....**Manual DTMF Encoder** (Enables keypad for manual DTMF operation.)
 2-12345.....**Manual DTMF/ANI Encoder** (Enables the ANI ID number to be transmitted only after the "ENT" key is pressed during TX.)
- CH 00 Group 3 Functions** NIFC Default is "3-12345" *(See Figure 10)*
- 3-12345.....**Reserved**
 3-12345.....**Reserved**
 3-12345.....**LCD Back light ON Display Change** (LCD back light will illuminate each time the display receives an input.)
 3-12345.....**LCD Back light ON Key Press** (LCD back light will illuminate each time a key is pressed.)
 3-12345.....**Alphanumeric Mode** (LCD will display Alphanumeric Characters.)
10. After "CH 00" Group 3 Functions, the display will indicate "PRG LITE OFF" for the **LCD Back light Duration Setting**.
To change the back light duration, press the "PRI" key to select an available setting and press the "ENT" key to store and advance to the next field. *(NIFC Default is "OFF") (See Figure 11)*
 11. The display will indicate the current **group label**. *(See Figure 12)*
Press the "ENT" key to advance back to the "CH 00" starting point.
At this point, pressing the "FNC" key repeatedly will scroll down each value of the "CH 00" settings for that channel.
If no changes are needed, exit the program mode by cycling power to the radio or continue with channel programming.

PRG
CH 00

PRG
P000000

PRG ID
0000000

PRG TX
160 SEC

PRG SCN
2.0 SEC

PRG
PR 1 OFF

PRG
PR 2 OFF

PRG
1 -- 12345

PRG
2 -- 12345

PRG
3 -- 12345

PRG
LITE OFF

PRG
GROUP 01

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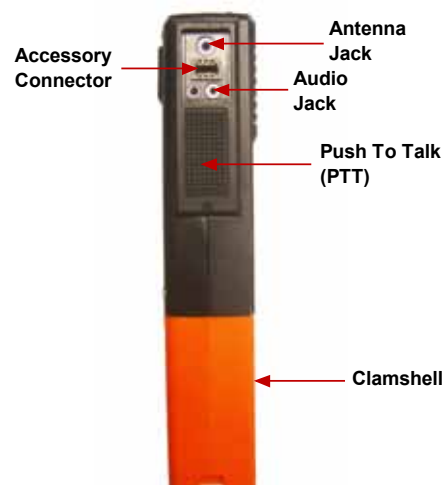
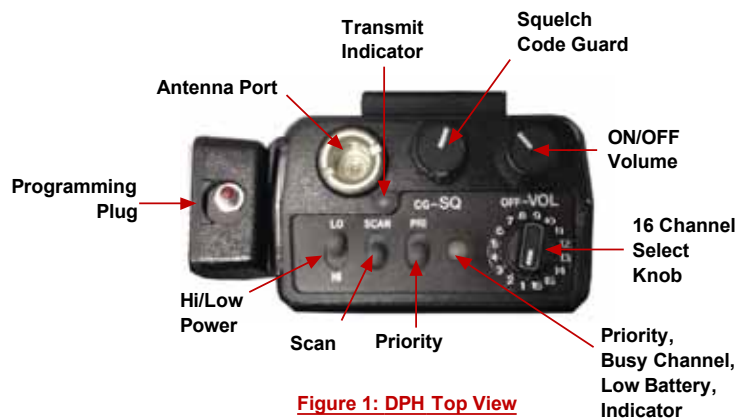
1. Turn power **ON** by turning the ON/OFF Volume Knob clockwise.
A beep indicates the radio is operational. The LCD will briefly indicate the current group before indicating the current channel.
2. Select a group number by pressing the " #" key and entering a 2-digit number followed by the " ENT" key.
3. Select a channel by turning the Channel Select Knob to one of the 16 available positions.
4. Adjust the volume by turning the Squelch Knob clockwise to open the squelch and set the volume to desired level.
5. Adjust the Squelch by turning the Squelch Knob counterclockwise until the squelch closes.

Note: *This is the Threshold Squelch Setting.*

Turn the squelch Knob fully counterclockwise into the detent position to place the RX in Code Guard. RX must have a tone programmed in order for RX Code Guard to function properly. Putting the RX in Code Guard, will enable the RX not to open squelch unless the it receives the correct tone.

The radio is now ready to RECEIVE on that current group and channel.

6. To transmit, press and hold the Push-To-Talk (PTT) button on the side of the radio.
Note: *The Transmit Indicator Light should glow red while transmitting. If not, the battery may be low or the channel is RX only or busy.*
7. Pause 1 second and talk in a normal voice into the microphone.
Note: *Try to shield the microphone from wind and other loud background noises for clearer transmissions.*
8. Release the PTT to stop transmitting and receive incoming transmissions.



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1. Turn radio ON and select a Zone/Group you wish to program.
2. Press the 4-Way Navigation key to the right once or until the **"FPP"** softkey is visible on the display. *(See figure 1)*
Press the **"FPP"** softkey to proceed into programming mode.
Radio will indicate or ask for programming password; press the **"OK"** softkey to enter program mode. *(See Figure 2)*
Radio will display active zone, select the desired zone by pressing the 4-Way Navigation key left or right. *(See Figure 3)*
Once the desired zone is reached, press the **"VIEW"** softkey to change the channel programming information. *(See Figure 4)*
3. Select the desired channel to program, by pressing the 4-Way Navigation key left or right.
Once the desired channel is reached, press the **"VIEW"** softkey to change that particular channel programming information.
4. The display will indicate **"TX:xxx.xxxxxx"**, press the **"EDIT"** softkey to change the TX frequency. *(See Figure 5)*
Enter the desired TX frequency and press the **"OK"** softkey, then press the 4-Way Navigation key to the right to enter the RX frequency.
5. The display will indicate **"RX:xxx.xxxxxx"**, press the **"EDIT"** softkey to change the RX frequency. *(See Figure 6)*
Enter the desired RX frequency and press the **"OK"** softkey, then press the 4-Way Navigation key to the right to enter the TX tone.
6. The display will indicate **"TX PL: 0 CSQ"**, press the **"EDIT"** softkey to change the TX tone. *(See Figure 7)*
Enter a valid TX tone via the keypad and press the **"OK"** softkey, or
Press the 4-Way Navigation key up or down and select the desired tone and press the **"OK"** softkey.
Press the 4-Way Navigation key to the right to enter the RX tone.
NOTE: If an invalid tone is entered, radio will default to the closest valid tone.
NOTE: "0 CSQ" is default for NO TONE.
7. The display will indicate **"RX PL: 0 CSQ"**, press the **"EDIT"** softkey to change the RX tone. *(See Figure 8)*
Enter a valid RX tone via the keypad and press the **"OK"** softkey, or
Press the 4-Way Navigation Key up or down and select the desired tone and press the **"OK"** softkey.
Press the 4-way Navigation key to the right to enter the TX DPL.
NOTE: If an invalid tone is entered, radio will default to the closest valid tone.
NOTE: "0 CSQ" is default for NO TONE.
9. The display will indicate **"TX DPL: 0 CSQ"**, do not change, press the 4-Way Navigation Key to the right to enter the RX DPL.
10. The display will indicate **"RX DPL: 0 CSQ"**, do not change, press the 4-Way Navigation Key to the right to enter the TX NAC.
11. The display will indicate **"TX NAC: \$293"**, do not change, press the 4-Way Navigation Key to the right to enter the RX NAC.
12. The display will indicate **"RX NAC: \$293"**, do not change, press the 4-Way Navigation key to the right to enter the RX Type.
NOTE: Do not change TX/RX DPL, or TX/RX NAC for analog channels, these parameters are used for digital channels only.
NOTE: TX/RX DPL and TX/RX NAC will display analog equivalent information.
13. The display will indicate **"RX Type: ANALOG"**, press the **"EDIT"** softkey to change the RX type. *(See Figure 9)*
Toggle between **"ANALOG"**, **"MIXED"**, or **"DIGITAL"** by pressing the 4-Way Navigation Switch up or down.
For Analog channels, select **"ANALOG"** and press the **"OK"** softkey, then press the 4-Way Key to the right to enter TX Type.
14. The display will indicate **"TX Type: ANALOG"**. *(See Figure 10)*
Note: If the "RX Type" is set to ANALOG or DIGITAL, the TX MODE can not be changed, it will default to the RX setting.
Press the 4-way Navigation Key to the right to enter the Bandwidth.
15. The display will indicate **"Bandwidth: 12.5 Khz"**, press the **"EDIT"** softkey to change the channel bandwidth. *(See Figure 11)*
Toggle between either **"12.5 Khz"** for Narrowband or **"25.0 Khz"** for Wideband by pressing the 4-Way Navigation Switch up or down and press the **"OK"** key. Press the 4-Way Navigation Key to the right to enter the Channel Name.
NOTE: UHF models are capable of selecting "20.0 Khz" for bandwidth, DO NOT SELECT THIS OPTION.
16. The display will indicate **"Chan Name: CHAN 1"**, press the **"EDIT"** softkey to change the Channel Name.
Enter the desired channel name using the alpha numeric keypad and press the **"OK"** softkey when done.
Press the 4-Way Navigation Key to the right, to enter the Zone Name.
NOTE: For Space Character, press the 4-Way Navigation Switch to the Right.
17. The display will indicate **"Zone Name: Z1"**, press the **"EDIT"** softkey to change the Zone Name.
Enter the desired Zone Name using the alpha numeric keypad and press the **"OK"** softkey when done.
NOTE: NIICD does not recommend changing the Zone Name.
18. Once the Zone Name is edited, pressing the 4-way Navigation Switch to the right will bring up the TX Frequency option.
19. Once all the programming parameters have been entered for that channel press the **"DONE"** softkey and select another channel to program or press the **"HOME"** Button to exit programming mode.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7



Figure 8



Figure 9



Figure 10



Figure 11

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MOTOROLA XTS 2500/5000 PORTABLE RADIO SETTINGS/OPTIONS

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CHANGING ZONES/GROUPS

1. To change zones/groups, press the " **ZONE**" softkey from the default screen/display. *(See Figure 1)*
2. Select the desired zone/group by scrolling right/left with the 4-Way Navigation Switch. *(See Figure 2)*
(or direct enter a 2 digit zone/group number via the key)
3. Once a desired zone/group is selected, press the " **HOME**" button to make that zone/group active.



Figure 1



Figure 2

ENABLE/DISABLE SCAN/PRIORITY SCAN

1. **To Enable Scan**, turn the 3-Position Rotary/Toggle Switch to the " **B**" or " **C**" position.
LCD will indicate the radio is in scan mode, by displaying an () on the upper part of the LCD. *(See Figure 3)*
 2. **To Disable Scan**, turn the 3-Position Rotary/Toggle Switch to the " **A**" position.
- NOTE:** If no channels are in the Scan List, the radio will beep and indicate empty scan list on the LCD when scan is enabled.



Figure 3

ADD/REMOVE CHANNELS FROM SCAN/PRIORITY LIST

1. To add a channel to the Scan List, press the " **PROG**" softkey from the default screen/display. *(See Figure 4)*
2. Press the " **SCAN**" softkey to enter into the scan list. *(See Figure 5)*
3. Select the desired channel to scan with the top 16 Channel Select Knob.
4. Press the " **SEL**" softkey once to enter that selected channel in the scan list. *(See Figure 6)*
LCD will indicate the channel is in the scan list, by displaying an () on the upper part of the LCD.
5. Press the " **SEL**" softkey once more to enter that selected channel as the scan priority 1 channel.
LCD will indicate the radio is PRI 1 by displaying an () icon on the upper part of the LCD.
6. Press the " **SEL**" softkey once more to enter that selected channel as the scan priority 2 channel.
LCD will indicate the radio is PRI 2 by displaying an () icon on the upper part of the LCD. *(Note Flashing DOT on end)*
7. Press the " **SEL**" softkey once more to remove the channel from the scan list completely.
Or press the " **DEL**" softkey to remove the channel from the scan list.
8. Press the " **HOME**" button to return to the main screen.



Figure 4



Figure 5



Figure 6

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MOTOROLA XTS 2500/5000 PORTABLE RADIO CLONING INSTRUCTIONS

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1. Connect the cloning cable to both the Master and Slave radios. *(See Figure 7)*
2. Turn both radios on.
3. On the MASTER RADIO, press the "**CLON**" softkey from the default screen to bring up the cloning menu. *(See Figure 1)*
 Note: The Master radio will momentarily display "**TARGET RADIO CONNECTED**" if a slave radio is connected correctly.
 The Slave radio will display "**CLONE MODE**" on the LCD.
4. Select a desired zone/group by pressing the 4-Way Navigation Key to the left or right. *(See Figure 2)*
5. Once a zone is selected, press the "**SEL**" softkey to enable that zone to be sent over to the slave radio.
 The display will indicate the zone is enabled by an "**C**" icon on the right side of the LCD. *(See Figure 3)*
6. Press the "**DONE**" softkey to select a target zone/group. *(See Figure 4)*
7. The display will indicate "**Target: Zx:**", select a desired group/zone that the Master radio will write/clone over the Slave radio.
 Press the "**SEL**" softkey when desired target group/zone is selected.
 The display will indicate the target zone is enabled by an "**C**" icon on the right side of the LCD. *(See Figure 4)*
8. Press the "**OK**" softkey to begin cloning.
 Display on Master will indicate "**Wait: Cloning.....**".
 Display on Master will indicate "**CLONE SUCCESSFUL**" once clone is complete. *(See Figure 6)*
9. Press the "**EXIT**" softkey to exit clone mode and return to default screen.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7: Motorola XTS2500/5000 Cloning Connections

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

MOTOROLA XTS 2500 RADIO BASIC OPERATION & CONTROLS

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1. Turn power **ON** by turning the ON/OFF Volume Knob clockwise.
The LCD will indicate the current group and channel label.
2. Select a zone number by pressing the appropriate Menu Select soft key labeled " **ZONE**", then select a zone by pressing the 4-Way Navigation switch to the right or left; or direct enter a 2 digit group/zone number via the keypad and press the " **Home**" key when finished.
3. Select a channel by turning the Channel Select Knob to one of the 16 available positions.
4. Adjust the volume by pressing/hold the " **Monitor**" key until it beeps and set the volume to desired level, press the " **Monitor**" key once more to close Squelch.
The radio is now ready to RECEIVE on that current group and channel.
6. To transmit, press and hold the Push-To-Talk (**PTT**) button on the side of the radio.
Note: The Transmit Indicator Light should glow red while transmitting.
If not, the battery may be low or the channel is RX only or busy.
7. Pause 1 second and talk in a normal voice into the microphone.
Note: Try to shield the microphone from wind and other loud background noises for clearer transmissions.
8. Release the PTT to stop transmitting and receive incoming transmissions.



Figure 3: Top View XTS 2500



Figure 1: Front View XTS 2500



Figure 2: Side View XTS 2500

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MOTOROLA XTS 5000 BASIC OPERATION & RADIO CONTROLS

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1. Turn power **ON** by turning the ON/OFF Volume Knob clockwise.
The LCD will indicate the current group and channel label.
2. Select a zone number by pressing the appropriate Menu Select soft key labeled "**ZONE**", then select a zone by pressing the 4-Way Navigation switch to the right or left; or direct enter a 2 digit group/zone number via the keypad and press the "**Home**" key when finished.
3. Select a channel by turning the Channel Select Knob to one of the 16 available positions.
4. Adjust the volume by pressing/hold the "**Monitor**" key until it beeps and set the volume to desired level, press the "**Monitor**" key once more to close Squelch.
The radio is now ready to RECEIVE on that current group and channel.
6. To transmit, press and hold the Push-To-Talk (**PTT**) button on the side of the radio.
Note: The Transmit Indicator Light should glow red while transmitting.
If not, the battery may be low or the channel is RX only or busy.
7. Pause 1 second and talk in a normal voice into the microphone.
Note: Try to shield the microphone from wind and other loud background noises for clearer transmissions.
8. Release the PTT to stop transmitting and receive incoming transmissions.



Figure 3: Top View XTS 5000



Figure 1: Front View XTS 5000

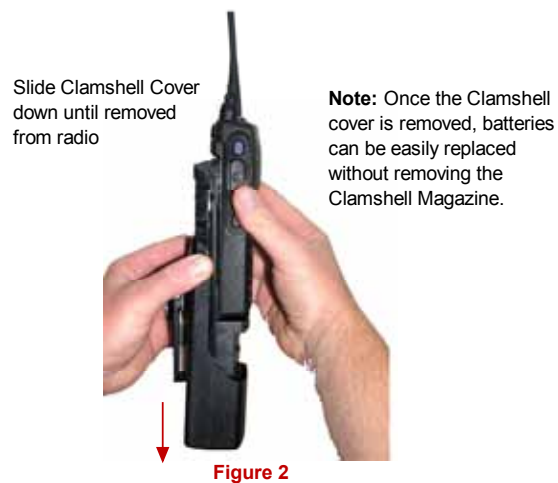


Figure 2: Side View XTS 5000

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REMOVING CLAMSHELL FROM MOTOROLA XTS 2500 PORTABLE RADIO

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THALES 25 PORTABLE (RACAL) ANALOG CHANNEL PROGRAMMING

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1. Select a channel for programming by rotating the Channel Select Knob to one of the sixteen rotary positions.
2. Press the "ENTER" key to bring up the Main Menu screen. *(See Figure 1)*
3. Scroll up/down using the "O" and "◊" (up/down arrow keys) to select "PROGRM" and press the "ENTER" key.
4. Enter a 6-Digit Password if requested and press the "ENTER" key.
Note: NIFC password is "000000".
5. Scroll up/down and select "CHANEL" and press the "ENTER" key to program Channel Parameters. *(See Figure 2)*
6. Scroll down and select "TAG" and press the "ENTER" key. *(See Figure 3)*
Change the channel name/label using the keypad and press the "ENTER" key when complete.
Note: "ID" cannot be changed, it is automatically updated when programming a channel.
7. Scroll down and select "MODE" and press the "ENTER" key to program the Channel Mode. *(See Figure 4)*
Select either "ANALOG" or "DIGITAL" and press the "ENTER" key.
Note: NIFC Default is "ANALOG" for all channels.
8. Scroll down and select "B/W" and press the "ENTER" key to program the Channel Bandwidth. *(See Figure 4)*
Select either "25Khz" or "12.5Khz" and press the "ENTER" key.
Note: 25Khz= Wide-Band, 12.5khz= Narrow-Band.
Note: NIFC Default is "12.5 Khz" for Narrow-Band operation.
9. Scroll down and select "ENCRPT" and press the "ENTER" key to program Encryption. *(See Figure 5)*
Select either "ENABLD" or "DISABD" and press the "ENTER" key.
Note: If Encryption is enabled, a key must be loaded first into the radio with the PC Programmer.
Note: NIFC Default is "DISABD"
10. Scroll down and select "RX" and press "ENTER" key to program the RX Frequency. *(See Figure 6)*
Enter a valid RX frequency from 136-174 Mhz using the keypad and press the "ENTER" key.
11. Scroll down and select "RX SQMD" and press the "ENTER" key to program the RX Squelch Mode. *(See Figure 7)*
Select either "NOISE", "DCS", "CTCSS", or "NONE" and press the "ENTER" key.
Note: If "Noise" is selected, the program will proceed with the Squelch Adjust parameter (SQ=), select a squelch setting and press "ENTER" when done; this setting opens the squelch with any corresponding analog signal. If "CTCSS" is selected, the program will proceed with a SUB Audible Tone menu, select a tone from the menu by scrolling through and then press "ENTER"; this setting will open the squelch with any corresponding analog signal that contains the correct "CTCSS" tone. If "DCS" is selected, the program will proceed with the Digital Coded Squelch tone menu, select a tone from the menu by scrolling through and then press "ENTER"; this setting will open the squelch with any corresponding analog signal that contains the correct "DCS" tone. If "None" is selected, squelch will be open at all times (Constant Open Squelch).
Note: NIFC Default is "Noise" with a "SQ" setting of 8.
12. Scroll down and select "TX" and press the "ENTER" key to program the TX Frequency. *(See Figure 8)*
Enter a valid TX frequency from 136-174 Mhz using the keypad and press the "ENTER" key.
13. Scroll down and select "TX SQMD" and press the "ENTER" key to program the TX Squelch Mode. *(See Figure 9)*
Select either "DCS", "CTCSS", or "NONE" and press the "ENTER" key.
Note: If "CTCSS" is selected, the program will proceed with a Sub Audible Tone menu, select a tone from the menu by scrolling through and press "ENTER"; this setting will include a "CTCSS" tone on the analog transmit signal. If "DCS" is selected, the program will proceed with a Digital Coded Squelch menu, select a tone from the menu by scrolling through and then press "ENTER"; this setting will include a "DCS" tone on the analog transmit signal. If "None" is selected, no tones are sent out on the analog transmit signal.
Note: NIFC Default is "None".
14. Scroll down and select "LO PWR" and press "ENTER" to program the Low Power Setting. *(See Figure 10)*
Select either "0.1", "0.5", "1.0", "2.0", or "5.0" Watts for low power setting and press the "ENTER" key.
Note: NIFC Default for Low Power is 1.0 Watts.
15. Scroll down and select "HI PWR" and press the "ENTER" key to program the High Power Setting. *(See Figure 10)*
Select either "0.1", "0.5", "1.0", "2.0", or "5.0" Watts for high power setting and press the "ENTER" key.
Note: NIFC Default for Hi Power is 2.0 Watts.
16. If screen reads "SAVE CHANNEL", select "YES" to save. If not, channel information was stored and you can select another channel using the channel select knob and continue programming other channels or press "ESC" a few times to return to the main display.

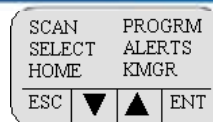


Figure 1

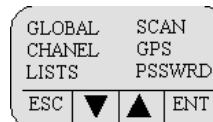


Figure 2

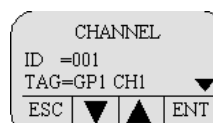


Figure 3

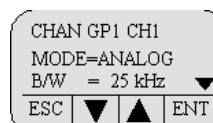


Figure 4

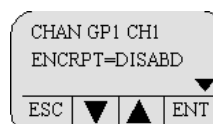


Figure 5

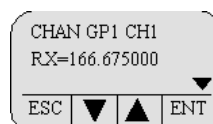


Figure 6

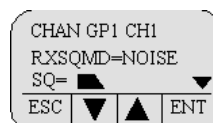


Figure 7

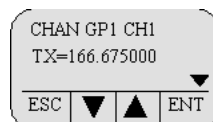


Figure 8

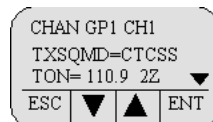


Figure 9

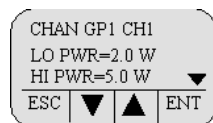


Figure 10

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

THALES 25 PORTABLE RADIO (RACAL) SETTINGS/OPTIONS GUIDE

Page 2 of 4, Version 2014

ADD/REMOVE CHANNEL FROM SCAN LIST

1. Select a channel to be added to the Scan List by using the Channel Select knob.
2. **To Add Channel**, briefly press and release the "◊" key, when released a box "□" will enclose the "C" in the display, indicating that the channel is in the scan list. (See Figure 1)
3. **To Remove**, briefly press and release the "O" key. The box "□" will be removed from the "C" in the display.

Note: If the "◊" key is pressed too long, it will enable Zone Scan, which will scan other scan channels in different zones/groups. The LCD will display a box around the "Z". If this happens, disable the function by pressing and holding the "O" key for about 3 seconds.

SCAN/PRIORITY SCAN MODE

1. **To Enable SCAN**, the 3-position toggle switch must be in the "B" position. The display will indicate that the radio is scanning. (See figure 2)
2. **To Enable PRI SCAN**, the 3-Position toggle switch must be in the "A" position. The display will indicate that Priority Scan is enabled. (See Figure 3)
3. **To Disable SCAN/PRI SCAN**, the 3-position toggle switch must be in the "C" position.

Note: In order for Priority Scan to function properly, the user must add a priority scan channel. (See Add Priority Scan Channel)

ADD PRIORITY SCAN CHANNEL

1. Press the "ENTER" key to bring up the Main Menu Screen.
2. Scroll down to "PROGRM" and press the "ENTER" key.
3. Scroll down to "SCAN" and press the "ENTER" key.
4. Scroll down to "P1" and press the "ENTER" key.
5. Select the P1 Channel by using the Channel select knob and press the "ENTER" key when done.
6. To add a second priority channel P2, scroll down to "P2" and press the "ENTER" key. Select the P2 Channel by using the Channel Select Knob and the press the "ENTER" key when done.
7. Press the "ESC" key a few times to reach the main screen.

Note: In order for P2 channel to function properly, the user must enable the P2 function under the scan options. Press the "ENTER" key to bring up the Main Menu Screen. Select "SCAN" and press the "ENTER" key. Scroll down to "PRIMODE" and press the "ENTER" key. Select "PR1+2" to enable P2 scan function. Once P2 scan function is enabled, when the radio is set to Priority Scan, the display will indicate that both Priority Channels are being scanned. (See Figure 4)

NIFC Default is P1 and P2 Disabled.

CHANGING ZONES

1. Press the "ENTER" key to bring up the Main Menu Screen.
2. Scroll down to "SELECT" and press the "ENTER" key.
3. Scroll down to "ZONE" and press the "ENTER" key. (See Figure 5)
4. Scroll to the desired zone/group and press the "ENTER" key to select the zone. Press the "ESC" key a few times to reach the main screen.

Note: NIFC has a total of 16 available zones under the NIFC Bank. Additional 3 zones are available under the Incident Bank. NIFC Default is set to Bank "NIFC"

CHANGING BANKS

1. Press the "ENTER" key to bring up the Main Menu Screen.
2. Scroll down to "SELECT" and press the "ENTER" key.
3. Scroll down to "BANK" and press the "ENTER" key. (See Figure 5)
4. Scroll to the desired bank and press the "ENTER" key to select a bank. Press the "ESC" key a few times to reach the main screen.

Note: NIFC Default in "NIFC Bank". The "INCIDENT Bank" contains 3 additional zones available for programming or cloning.

DISABLE/ENABLE KEYPAD (See Figures 6 & 7)

1. Press and hold the "□" key while pressing and holding the "ENTER" key. Display will show "Keys Disabled", "Side Enabled". (Only the keypad is disabled, while all the side buttons are still enabled)
2. Repeat the process, display shows "Keys Disabled", "Side Disabled". (Both the keypad and the side buttons are disabled)
3. To Enable Keypad and Side buttons, repeat the process on more time and display will show "Keys Enabled", "Side Enabled".

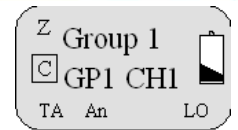


Figure 1

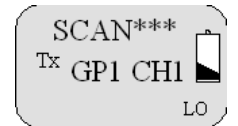


Figure 2

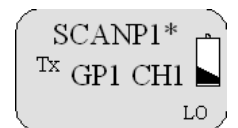


Figure 3

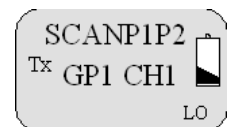


Figure 4

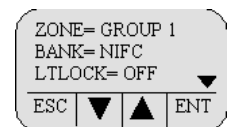


Figure 5



Figure 6

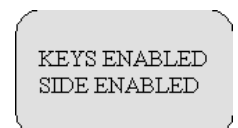


Figure 7

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

THALES 25 PORTABLE RADIO (RACAL) CLONING INSTRUCTIONS

Page 3 of 4, Version 2014

1. Turn both radios on.
2. Connect Source end of cloning cable to Master Radio. *(See Figure 8)*
3. Connect Target end of cloning cable to Slave/Target Radio.

Master radio automatically detects the target radio, and brings up the Cloning Main Menu. *(See Figure 1)*

Note: If a non-Fire Feature target radio is connected, the only cloning option is to clone all channels, zones, and banks.

4. Scroll down using the "O" key through the Cloning Main Menu.
5. Use the "◊" () key to select or de-select cloning features.

Selectable Cloning Features: *(See Figure 1 & 2)*

GLOBAL DATA:	Clones all buttons, toggle switch settings, and scan configurations.
ALL ZONE:	Clones all Bank and Zone information in radio, including the "Event Bank"
EVENT CLONE:	Clones either one of the event zones (17,18, or 19) or can select all event zones to clone.
FULL EVBANK:	Clones all zones, channels in the event zones (17,18, 19).
TX SQL LIST:	Clones Analog/Digital Transmit Squelch tone pick list.
TALKGP LIST:	Clones talk group list (DIGITAL Only).

6. Select desired cloning process; "GLOBAL DATA", "ALL ZONE", "EVENT CLONE", "FULL EVBANK", "TX SQL LIST", or "TALKGP LIST" and press the "ENTER" key.

Cloning Procedure For Each Cloning Feature

GLOBAL DATA: Press the "PTT" button to send data to clone radio. *(See Figure 3)*

ALL ZONES: Press the "PTT" button to send data to clone radio. *(See Figure 3)*

EVENT CLONE: Press the "ENTER" key. *(See Figure 3)*

Select "SELECT ZONES" and press the "ENTER" key. *(See Figure 4)*

Select which Invert Zone will be cloned in the "Target" radio and press "ENTER". *(See Figure 5)*

Select which Zone will be cloned from the "Source" radio to the "Target" radio by scrolling through the available zones and press the "ENTER" key. *(See Figure 6)*

Press "ESC" once to return to the "Start Cloning" menu.

Select "START CLONING" and press the "ENTER" key.

Press the "PTT" to download to the "Target" radio.

Note: When performing an "EVENT CLONE", the user can only select zones for that current bank. If Zones 17, 18, or 19 need to be cloned over to the "Target" radio, the user must first select the "Event Bank" on the Master radio before connecting the cloning cable in order to select these zones.

FULL EVBANK: Press the "PTT" button to send data to clone radio. *(See Figure 3)*

TX SQL LIST: Press the "PTT" button to send data to clone radio. *(See Figure 3)*

TALKGP LIST: Press the "PTT" button to send data to clone radio. *(See Figure 3)*

7. Once the clone is complete, the "Target" radio will indicate which zone or zones were cloned over. *(See Figure 7)*

8. Disconnect "Target" radio and connect any other "Target" radios that need to be cloned.



Figure 1



Figure 2

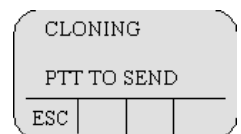


Figure 3

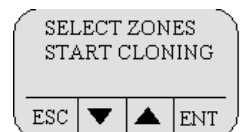


Figure 4

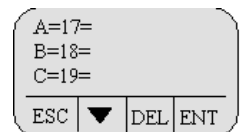


Figure 5

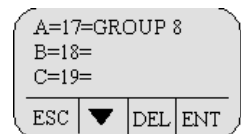


Figure 6

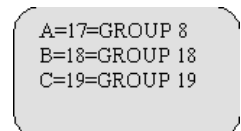


Figure 7



Figure 8: Racial Cloning Connections

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

RACAL BASIC OPERATION AND RADIO CONTROLS

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1. Turn power ON by turning the ON/OFF Volume knob clockwise.
A beep indicates the radio is operational. The LCD will indicate the current group and channel.
2. Select a channel by turning the Channel Select Knob to one of the 16 available positions.
3. Adjust the volume by pressing the Squelch Monitor Button to open the squelch and set the volume to desired level.
Press the Squelch Monitor Button once more to close the squelch.

The radio is ready to receive on that current channel.

5. To Transmit, press and hold the Push-To-Talk (PTT).
Note: *The Transmit Indicator should light RED. If not, the battery may be low or the channel is busy.*
6. Pause 1 Second and talk in a normal voice into the microphone .
Note: *Try to shield the microphone from wind and other loud background noises for clearer transmissions.*
7. Release the PTT to stop transmitting and receive incoming transmissions.

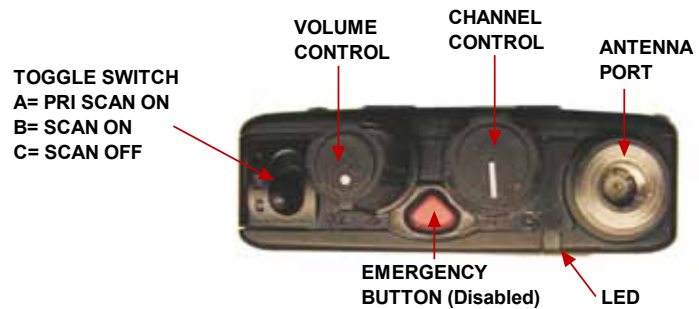


Figure 1: RACAL Top View



Figure 2: RACAL Front View

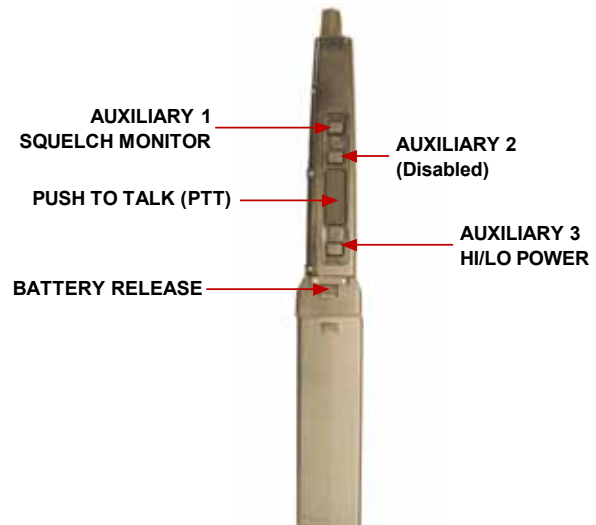


Figure 3: RACAL Side View

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

DATRON PORTABLE RADIO ANALOG CHANNEL PROGRAMMING

Page 1 of 4, Version 2014

1. Select a channel for programming by rotating the Channel Select Knob to one of the sixteen rotary positions.
2. Press the Large **Green** Multi-Function key to bring up the Main Menu screen. *(See Figure 1)*
3. Scroll up/down using the Blue Multi-Functions keys (**up/down keys**) to select **"PROGRM"** and press the **"ENT"** key.
4. Enter a 6-Digit Password if requested and press the **" ENT"** key.
Note: *NIFC password is "000000".*
5. Scroll up/down and select **" CHANEL"** and press the **"ENT"** key. *(See Figure 2)*
6. Scroll down and select **" TAG"** and press the **"ENT"** key. *(See Figure 3)*
 Change the channel name/label using the keypad and press the **" ENT"** key when complete.
Note: *"ID" cannot be changed, it is automatically updated when programming a channel.*
7. Scroll down and select **" MODE"** and press the **"ENT"** key. *(See Figure 4)*
 Select either **"ANALOG"** or **"DIGITAL"** and press the **"ENT"** key.
Note: *NIFC Default is "ANALOG" for all channels.*
8. Scroll down and select **" B/W"** and press the **"ENT"** key. *(See Figure 4)*
 Select either **"25Khz"** or **"12.5Khz"** and press the **"ENT"** key.
Note: *25Khz= Wide-Band, 12.5khz= Narrow-Band. If "DIGITAL" is selected for "MODE", the "B/W" option is not available. Other options are available once "DIGITAL" is selected.*
Note: *NIFC Default is "12.5 Khz" for Narrow-Band operation.*
9. Scroll down and select **" ENCRPT"** and press the **"ENT"** key. *(See Figure 5)*
 Select either **"ENABLD"** or **"DISABD"** and press the **"ENT"** key.
Note: *If Encryption is enabled, a key must be loaded first into the radio with the PC Programmer.*
Note: *NIFC Default is "DISABD"*
10. Scroll down and select **" RX"** and press **"ENT"**. *(See Figure 6)*
 Enter a valid RX frequency from 136-174 Mhz using the keypad and press the **" ENT"** key.
11. Scroll down and select **" RX SQMD"** and press the **"ENT"** key. *(See Figure 7)*
 Select either **" NOISE"**, **"DCS"**, **"CTCSS"**, or **"NONE"** and press the **"ENT"** key.
Note: *If "Noise" is selected, the program will proceed with the Squelch Adjust parameter (SQ=), select a squelch setting and press "ENT" when done; this setting opens the squelch with any corresponding analog signal. If "CTCSS" is selected, the program will proceed with a SUB Audible Tone menu, select a tone from the menu by scrolling through and then press "ENT"; this setting will open the squelch with any corresponding analog signal that contains the correct "CTCSS" tone. If "DCS" is selected, the program will proceed with the Digital Coded Squelch tone menu, select a tone from the menu by scrolling through and then press "ENT"; this setting will open the squelch with any corresponding analog signal that contains the correct "DCS" tone. If "None" is selected, squelch will be open at all times (Constant Open Squelch).*
Note: *NIFC Default is "Noise" with a "SQ" setting of 8.*
12. Scroll down and select **" TX"** and press the **"ENT"** key. *(See Figure 8)*
 Enter a valid TX frequency from 136-174 Mhz using the keypad and press the **" ENT"** key.
13. Scroll down and select **" TX SQMD"** and press the **"ENT"** key. *(See Figure 9)*
 Select either **" DCS"**, **"CTCSS"**, or **"NONE"** and press the **"ENT"** key.
Note: *If "CTCSS" is selected, the program will proceed with a Sub Audible Tone menu, select a tone from the menu by scrolling through and press "ENT" ; this setting will include a "CTCSS" tone on the analog transmit signal. If "DCS" is selected, the program will proceed with a Digital Coded Squelch menu, select a tone from the menu by scrolling through and then press "ENT"; this setting will include a "DCS" tone on the analog transmit signal. If "None" is selected, no tones are sent out on the analog transmit signal.*
Note: *NIFC Default is "None".*
14. Scroll down and select **" LO PWR"** and press **"ENT"**. *(See Figure 10)*
 Select either **" 0.1"**, **"0.5"**, **"1.0"**, **"2.0"**, or **"5.0"** Watts for low power setting and press the **" ENT"** key.
Note: *NIFC Default for Low Power is 1.0 Watts.*
15. Scroll down and select **" HI PWR"** and press the **"ENT"** key. *(See Figure 10)*
 Select either **" 0.1"**, **"0.5"**, **"1.0"**, **"2.0"**, or **"5.0"** Watts for high power setting and press the **" ENT"** key.
Note: *NIFC Default for Hi Power is 2.0 Watts.*
16. If screen reads **"SAVE CHANNEL"**, select **"YES"** to save. If not, channel information was stored and you can select another channel using the channel select knob and continue programming other channels or press **" ESC"** a few times to return to the main display.



Figure 1

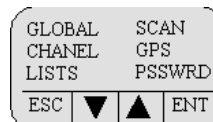


Figure 2

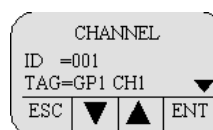


Figure 3

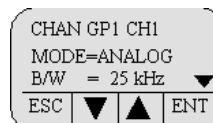


Figure 4

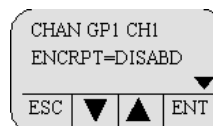


Figure 5

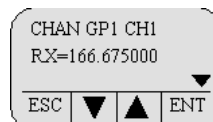


Figure 6

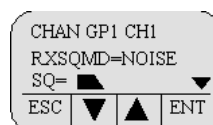


Figure 7

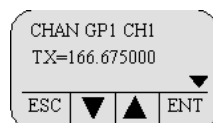


Figure 8

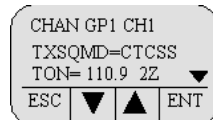


Figure 9

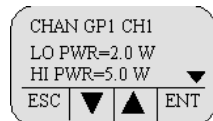


Figure 10

ADD/REMOVE CHANNEL FROM SCAN LIST

1. Set the radio that the channel to be added in the Scan List by using the Channel Select knob.
2. **To Add Channel**, briefly press and release the 3rd Multi-Function key from the left, when released a box "  " will enclose the "C" in the display, indicating that the channel is in the scan list. (See Figure 1)
3. **To Remove**, briefly press and release the 2nd Multi-Function key from the left. The box "  " will be removed from the "C" in the display.

Note: If the 3rd Multi-Function key is pressed to long, it will enable Zone Scan, which will scan other scan channels in different zones/groups.

SCAN/PRIORITY SCAN MODE

1. **To Enable SCAN**, the 3-position toggle switch must be in the " B " position.
The display will indicate that the radio is scanning. (See figure 2)
2. **To Enable PRI SCAN**, the top 3-Position toggle switch must be in the " A " position.
The display will indicate that the radio that Priority Scan is enabled. (See Figure 3)
3. **To Disable SCAN/PRI SCAN**, the 3-position toggle switch must be in the " C " position.

Note: In order for Priority Scan to function properly, the user must add a priority scan channel.
(See Add Priority Scan Channel)

ADD PRIORITY SCAN CHANNEL

1. Press the Large Green Multi-Function key to bring up the Main Menu screen.
2. Scroll down to " **PROGRM** " and press the " **ENT** " key.
3. Scroll down to " **SCAN** " and press the " **ENT** " key.
4. Scroll down to " **P1** " and press the " **ENT** " key.
5. Select the **P1** Channel by using the Channel select knob and press the " **ENT** " key when done.
6. To add a second priority channel **P2**, scroll down to " **P2** " and press the " **ENT** " key. Select the **P2** Channel by using the Channel Select Knob and the press the " **ENT** " key when done.
7. Press the " **ESC** " key a few times to reach the main screen.

Note: In order for P2 channel to function properly, the user must enable the P2 function under the scan options. Press the " **ENT** " key to bring up the Main Menu Screen. Select " **SCAN** " and press the " **ENT** " key. Scroll down to " **PRIMODE** " and press the " **ENT** " key. Select " **PR1+2** " to enable P2 scan function. Once P2 scan function is enabled, when the radio is set to Priority Scan, the display will indicate that both Priority Channels are being scanned. (See Figure 4)

NIFC Default is P1 Enabled.

CHANGING ZONES

1. Press the Large Green Multi-Function key to bring up the Main Menu screen.
2. Scroll down to " **SELECT** " and press the " **ENT** " key.
3. Scroll down to " **ZONE** " and press the " **ENT** " key. (See Figure 5)
4. Scroll to the desired zone/group and press the " **ENT** " key to select the zone.
Press the " **ESC** " key a few times to reach the main screen.

Note: NIFC has a total of 16 available zones under the NIFC Bank.
Additional 3 zones are available under the Incident Bank.
NIFC Default is " **NIFC BANK** "

CHANGING BANKS

1. Press the **Green Multi-Function** key to bring up the Main Menu screen.
2. Scroll down to " **SELECT** " and press the " **ENT** " key.
3. Scroll down to " **BANK** " and press the " **ENT** " key. (See Figure 5)
4. Scroll to the desired bank and press the " **ENT** " key to select a bank.
Press the " **ESC** " key a few times to reach the main screen.

Note: NIFC Default in " **NIFC Bank** ".
The " **INCIDENT Bank** " contains 3 additional zones available for programming or cloning.

DISABLE/ENABLE KEYPAD

1. Press and hold the **1st Blue Multi-Function** key while pressing and holding the **Green Multi-Function** key.
Display will show " **Keys Disabled** ", " **Side Enabled** ". (Only the keypad is disabled, while all the side button are still enabled)
2. Repeat the process, display shows " **Keys Disabled** ", " **Side Disabled** ". (Both the keypad and the side buttons are disabled)
3. To Enable Keypad and Side buttons, repeat the process on more time and display will show " **Keys Enabled** ", " **Side Enabled** ".
(See Figures 6 & 7)

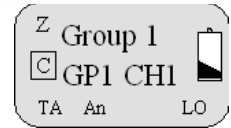


Figure 1

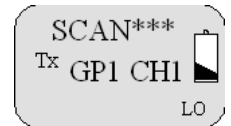


Figure 2

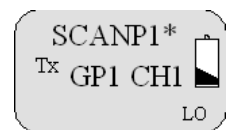


Figure 3

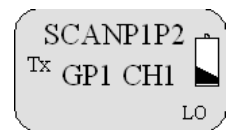


Figure 4

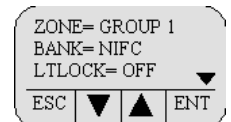


Figure 5

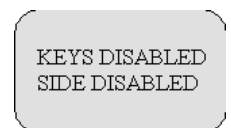


Figure 6

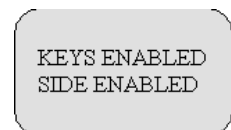


Figure 7

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

DATRON PORTABLE RADIO CLONING INSTRUCTIONS

Page 3 of 4, Version 2014

1. Turn both radios on.
2. Connect Source end of cloning cable to Master Radio. *(See Figure 8)*
3. Connect Target end of cloning cable to Slave/Target Radio.
Master radio automatically detects the target radio, and brings up the Cloning Main Menu. *(See Figure 1)*
Note: *If a non-Fire Feature target radio is connected, the only cloning option is to clone all channels, zones, and banks.*

4. Scroll down using the "▼" softkey through the Cloning Main Menu.
5. Use the " " softkey to select or de-select cloning features.

Selectable Cloning Features: *(See Figure 1 & 2)*

GLOBAL DATA: Clones all buttons, toggle switch settings, and scan configurations.
ALL ZONE: Clones all Bank and Zone information in radio, including the "Event Bank"
EVENT CLONE: Clones either one of the event zones (17,18, or 19) or can select all event zones to clone.
FULL EVBANK: Clones all zones, channels in the event zones (17,18, 19).
TX SQL LIST: Clones Analog/Digital Transmit Squelch tone pick list.
TALKGP LIST: Clones talk group list (DIGITAL Only).

6. Select desired cloning process; "GLOBAL DATA", "ALL ZONE", "EVENT CLONE", "FULL EVBANK", "TX SQL LIST", or "TALKGP LIST" and press the "ENTER" key.

Cloning Procedure For Each Cloning Feature

GLOBAL DATA: Press the "PTT" button to send data to clone radio. *(See Figure 3)*
ALL ZONES: Press the "PTT" button to send data to clone radio. *(See Figure 3)*
EVENT CLONE: Press the "ENTER" key. *(See Figure 3)*
 Select "SELECT ZONES" and press the "ENTER" key. *(See Figure 4)*
 Select which Invent Zone will be cloned in the "Target" radio and press "ENTER". *(See Figure 5)*
 Select which Zone will be cloned from the "Source" radio to the "Target" radio by scrolling through the available zones and press the "ENTER" key. *(See Figure 6)*
 Press "ESC" once to return to the "Start Cloning" menu.
 Select "START CLONING" and press the "ENTER" key.
 Press the "PTT" to download to the "Target" radio.
Note: *When performing an "EVENT CLONE", the user can only select zones for that current bank. If Zones 17, 18, or 19 need to be cloned over to the "Target" radio, the user must first select the "Event Bank" on the Master radio before connecting the cloning cable in order to select these zones.*

FULL EVBANK: Press the "PTT" button to send data to clone radio. *(See Figure 3)*
TX SQL LIST: Press the "PTT" button to send data to clone radio. *(See Figure 3)*
TALKGP LIST: Press the "PTT" button to send data to clone radio. *(See Figure 3)*

7. Once the clone is complete, the "Target" radio will indicate which zone or zones were cloned over. *(See Figure 7)*
8. Disconnect "Target" radio and connect any other "Target" radios that need to be cloned.



Fig. 8: Cloning Cable Connections



Figure 1

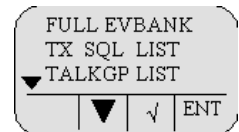


Figure 2

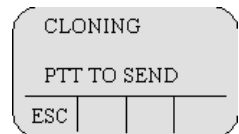


Figure 3

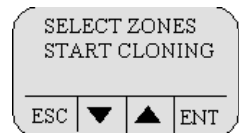


Figure 4

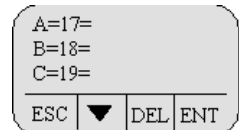


Figure 5

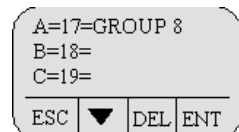


Figure 6

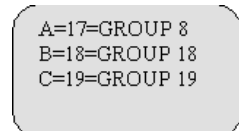


Figure 7

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

DATRON BASIC OPERATION AND RADIO CONTROLS

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1. Turn power ON by turning the ON/OFF Volume knob clockwise.
A beep indicates the radio is operational. The LCD will indicate the current group and channel.
2. Select a channel by turning the Channel Select Knob to one of the 16 available positions.
3. Adjust the volume by pressing the Squelch Monitor Button to open the squelch and set the volume to desired level.
Press the Squelch Monitor Button once more to close the squelch.

The radio is ready to receive on that current channel.

5. To Transmit, press and hold the Push-To-Talk (PTT).
Note: *The Transmit Indicator should light RED. If not, the battery may be low or the channel is busy.*
6. Pause 1 Second and talk in a normal voice into the microphone.
Note: *Try to shield the microphone from wind and other loud background noises for clearer transmissions.*
7. Release the PTT to stop transmitting and receive incoming transmissions.

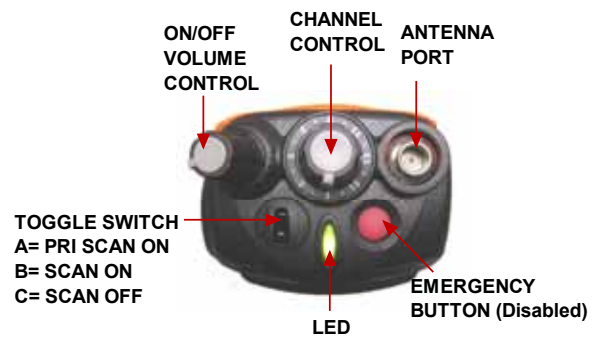


Figure 1: DATRON Top View



Figure 2: DATRON Front View



Figure 3: DATRON Side View

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ICOM IC-A3 PORTABLE AM RADIO PROGRAMMING & OPTIONS GUIDE

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MANUAL FREQUENCY ENTRY USING THE KEYPAD

1. Rotate the Volume Knob clockwise to turn the power ON.
2. Push the "CLR" key to select frequency mode.
3. Enter a valid AM frequency and press the " ENT" key.

Display will indicate the current selected frequency. (See Figure 1)

Note: Push the "ENT" key to enter consecutive zero digits.

Push the up/down arrow keys to scroll through frequencies quickly.
Decimal is automatically entered.

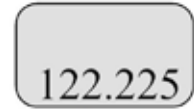


Figure 1

MEMORY CHANNEL SELECTION

1. Push the "MR" key to select memory mode.
2. Select the desired memory location by pressing the appropriate 2-digit number with the keypad # keys and press " ENT".

Display will indicate the corresponding frequency of the memory location. (See Figure 2)

Note: NIFC as Default contains 6 preprogrammed frequencies in memory locations 1-6.

Memory locations can also be selected via the tuning dial once in memory mode.

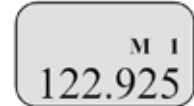


Figure 2

PROGRAMMING A MEMORY CHANNEL

1. Set the desired frequency using the keypad, the radio must be in frequency mode to enter new frequency.
2. Press the "F" key, followed by the " MR" key.
The LCD will flash the "M" in the upper display. (See Figure 3)
3. Select a memory channel (01-50) to be programmed using the keypad or by rotating the tuning dial.
4. Press the "ENT" key to enter that frequency into the memory location.

or

5. Press the "MR" key to change the alpha/numeric label then press the " ENT" key to store the frequency and label into the memory location. (See Figure 4)

Note: The user must know which keys correspond to the alpha characters, the keypad does not indicate which key corresponds to each alpha character. (See Figure 5)
When entering alpha characters, use the up/down arrow keys to move cursor.
Keys correspond just like a cell phone with exception to letters Q and Z, these are under the #1 key.
No special characters are available.

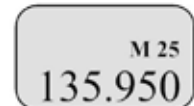


Figure 3



Figure 4



Figure 5

LOCK FUNCTION

1. To Enable Key Lock, press the "F" key, then press the " 7" key (Key Lock) to turn ON the function.
Display indicates that the key Lock functions is enabled by displaying the " " icon in the upper part of the LCD.
2. To Disable Key Lock, repeat the process. (See Figure 6)

Note: The lock function prevents accidental frequency changes & accidental function activation.

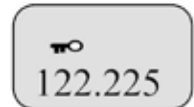


Figure 6

AUTOMATIC NOISE LIMITER (ANL)

1. To Enable ANL, press the ANL side button. (Top side button)
Display indicates that the ANL function is enabled by displaying " ANL" icon in the upper part of the LCD. (See Figure 7)
2. To Disable ANL, press the ANL side button.

Note: The ANL function reduces pulse noise such as ignition noise and other outside interference.

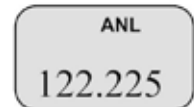


Figure 7

LIGHT SWITCH

1. To Enable the LCD Back Light, press the Light side button. (Bottom side button)
2. To Disable the LCD Back Light, Press the Light side button.

Note: The Light button turn on the LCD back light and the keypad lighting.
The light will stay on until it is disabled.

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ICOM IC-A3 AM PORTABLE RADIO BASIC OPERATION & CONTROLS
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1. Turn power ON by turning the ON/OFF Volume knob clockwise.
2. Select a valid AM frequency from one of the memory locations or direct enter a valid AM frequency via the keypad.
3. Adjust the volume by turning the Squelch knob clockwise to open the squelch and set the volume to desired level.
4. Adjust the squelch by turning the Squelch knob counterclockwise until the squelch closes. This is the Threshold Squelch Setting.
Note: If the Squelch control is set too high, squelch may not open for weak signals.

5. Push the "ANL" side button to reduce pulse noise caused by engine ignitions or other outside interference.

The radio is ready to receive on that current frequency.

6. To Transmit, press and hold the Push-To-Talk (PTT).
Note: The display will indicate the radio is transmitting by displaying a "TX" icon on the top portion of the LCD.
7. Pause 1 second and talk in a normal voice into the microphone.
Note: Try to shield the microphone from wind and other loud background noises for clearer transmissions.
8. Release the PTT to stop transmitting and receive incoming transmissions.



Figure 2: ICOM Front View

Figure 3: ICOM Side View

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ICOM IC-A6 PORTABLE AM RADIO PROGRAMMING & OPTIONS GUIDE

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MANUAL FREQUENCY ENTRY USING THE KEYPAD

1. Press and Hold the " **PWR** " softkey for 3 seconds until the power turns ON.
2. Push the " **CLR** " softkey to select frequency mode.
3. Enter a valid 5 digit AM frequency and press the " **ENT** " key. (118.000 through 136.975)
Display will indicate the current selected frequency. (See Figure 1)
Note: Pushing the " **ENT** " key enters consecutive zero digits.
Only "2", "5", "7", and "0" can be entered as the 5th and final digit.

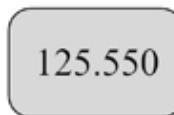


Figure 1

MANUAL FREQUENCY ENTRY USING THE TUNING DIAL

1. Press and Hold the " **PWR** " softkey for 3 seconds until the power turns " ON".
2. Push the " **CLR** " softkey to select frequency mode.
3. Rotate the tuning dial to set the desired frequency. (See Figure 1)
Note: To select 1Mhz tuning step, press the " **F** " softkey once, Push the " **F** " softkey again to return to normal tuning.

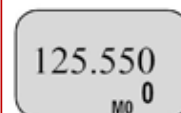


Figure 2

PROGRAMMING A MEMORY CHANNEL

1. Set the desired frequency using the keypad, the radio must be in frequency mode to enter new frequency.
2. Press the " **F** " soft key, followed by the " **MR** " softkeykey.
The LCD will flash the " **Mx XX** " in the lower display. (See Figure 2)
3. Select a memory bank (0-9) to program by pressing the " **F** " softkey followed by the " **0** " softkey, then selecting a desired Bank using the tuning dial. Press the " **ENT** " softkey once the desired bank is located. (Note: Default is Bank-0, See Figure 3)
4. Select a memory channel (00-19) to be programmed using the tuning dial.
5. Press the " **ENT** " key to enter that frequency into the memory location. (See Figure 4) (125.550 is saved in Bank 2, Channel 5)



Figure 3



Figure 4

MEMORY CHANNEL SELECTION

1. Push the " **MR** " key to select memory mode.
2. Select the desired memory location by rotating the tuning dial to desired memory channel and press the " **ENT** ".
Display will indicate the corresponding frequency of the memory location including bank location. (See Figure 4)
Note: To CLEAR the memory contents, select the memory channel to be cleared. Press the " **F** " softkey, then push and hold the " **CLR** " softkey for 2 seconds.

SELECTING A BANK

1. Press the " **F** " softkey, followed by the " **0** " softkey.
2. Select the desired bank (0-9) using the top tuning dial.
3. Press the " **ENT** " softkey to make that bank active.

RECALL FUNCTION

Recall stores the last 10 frequencies used in the radio.

1. To recall a used frequency, press the " **F** " softkeys to find the desired used frequency. (See Figure 5)
Note: To CLEAR the recall contents, select the recall channel to be cleared. Press the " **F** " softkey, then push and hold the " **CLR** " softkey for 2 seconds.



Figure 5

KEYPAD LOCK FUNCTION

1. To Enable Key Lock, press the " **F** " key, then press the " **7** " key (Key Lock) to turn ON the function. (See Figure 6)
Display indicates that the key Lock functions is enabled by displaying the " **KL** " icon in the upper part of the LCD.
2. To Disable Key Lock, repeat the process.
Note: The lock function prevents accidental frequency changes & accidental function activation.



Figure 6

AUTOMATIC NOISE LIMITER (ANL) FUNCTION

1. To Enable ANL, press the " **ANL** " softkey.
Display indicates that the ANL function is enabled by displaying " **ANL** " icon in the lower part of the LCD. (See Figure 7)
2. To Disable ANL, press the " **ANL** " softkey.
Note: The ANL function reduces pulse noise such as ignition noise, computer, lights and other outside interference.



Figure 7

BACK LIGHT FUNCTION

1. To Enable the LCD Back Light, press the Light side button. (Bottom side button)
2. To Disable the LCD Back Light, Press the Light side button.
Note: The Light button turns on the LCD back light and the keypad lighting.
The light will stay on until it is disabled.

SETTING SQUELCH LEVEL

1. Push the " **SQL** " softkey, then rotate the tuning dial to desired squelch level (00 - 24). (See Figure 8)
Note: "SQL -- 0" is open squelch and "SQL -- 24" is tight squelch. (NIICD suggested level is 20)

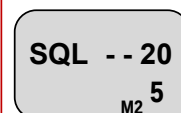


Figure 8

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

ICOM IC-A6 AM PORTABLE RADIO BASIC OPERATION & CONTROLS

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1. Press and Hold the " **PWR** " softkey for 3 seconds to turn power "ON".
2. Select a valid AM frequency from one of the memory locations or direct enter a valid AM frequency via the keypad.
3. Adjust the volume by turning the Volume Knob to desired level.
4. Adjust the Squelch by pushing the " **SQL** " softkey, then rotate the tuning dial to desired squelch level (00 - 24). (See Figure 1)
Note: "SQL -- 0" is open squelch and "SQL -- 24" is tight squelch.
 If the Squelch control is set too high, squelch may not open for weak signals.

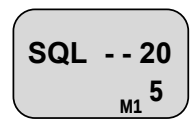


Figure 1

5. Push the " **ANL** " softkey to reduce pulse noise caused by engine ignitions or other outside interference.

The radio is ready to operate on that current frequency.

6. To Transmit, press and hold the Push-To-Talk (**PTT**).
Note: The display will indicate the radio is transmitting by displaying a "TX" icon on the top portion of the LCD.
 (See Figure 2)

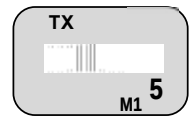


Figure 2

7. Pause 1 second and talk in a normal voice into the microphone.
Note: Try to shield the microphone from wind and other loud background noises for clearer transmissions.

8. Release the PTT to stop transmitting and receive incoming transmissions.
Note: The display will indicate the radio is receiving by displaying a "RX" icon on the top portion of the LCD.
 (See Figure 3)

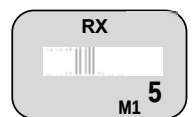


Figure 3



Figure 4: ICOM A-6 Front View

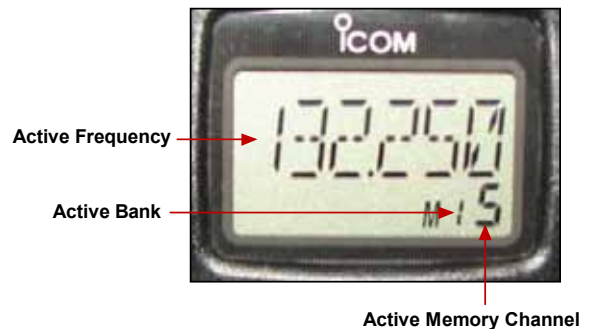


Figure 5: ICOM A-6 LCD View

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

MIDLAND PORTABLE RADIO PROGRAMMING GUIDE

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1. Select a group and channel you wish to program (See Figure 1)
Note: To change groups, press the "Zone" softkey. Enter the zone number via the key pad and press the "OK" softkey.
 OR

Press the "Zone" softkey. Press the UP/Down keypad keys to desired zone and press the "OK" softkey.

2. Select the "Menu" softkey, scroll down/up to "Channel Parameters" and press the "Select" softkey. (See Figure 2)
3. Scroll down/up to "Channel" and press the "Select" softkey to enter channel programming mode.
4. Enter a 5-Digit Password and press the "OK" softkey. NIICD Password is "00000" (See Figure 3)
5. Scroll up/down to desired channel and press the "Select" softkey to enter channel parameters. (See Figure 4)

Channel Parameters

6. **Channel Mode:** Default is set to "Analog". (See Figure 5)
 To change setting, press the "Edit" softkey and scroll up/down to select "Analog, Digital, or Multi" and press the "OK" softkey.
7. **RX Frequency:** Press the "Edit" softkey to edit the RX Frequency. Press the "C" key several times to clear the frequency and enter the new RX Frequency and press the "OK" softkey. (See Figure 6)
8. **TX Frequency:** Press the "Edit" softkey to edit the TX Frequency. Press the "C" key several times to clear the frequency and enter the new TX Frequency and press the "OK" softkey. (See Figure 7)
9. **TX Power:** Default is set to Medium (2 Watts).
 To change setting, press the "Edit" softkey and scroll up/down to select "Low, Medium, or High" Power and press the "OK" softkey.
10. **Channel Name:**
 To change the channel name, press the "Edit" softkey and press the "C" key several time to clear the channel name. Enter a new channel name via the numeric key pad and press the "OK" softkey.
11. **TX Timeout:** Default is set to "Yes". Timer is set to 120 seconds.
 To change setting, press the "Edit" softkey and scroll up/down to select "No or Yes" and press the "OK" softkey.
12. **RX Tone Type:** Default is set to "CCS".
 To change setting, press the "Edit" softkey and scroll up/down to select "CCS or DCS" and press the "OK" softkey.
13. **RX Tone:** Default is set to "None".
 To change setting, press the "Edit" softkey and scroll up/down to select desired tone from list and press the "OK" softkey.
14. **TX Tone Type:** Default is set to "CCS".
 To change setting, press the "Edit" softkey and scroll up/down to select "CCS or DCS" and press the "OK" softkey.
15. **TX Tone:** Default is set to "None".
 To change setting, press the "Edit" softkey and scroll up/down to select desired tone from list and press the "OK" softkey.
16. **Chan. Spacing:** Default is set to "12.5Khz". Narrowband
 To change setting, press the "Edit" softkey and scroll up/down to select either "12.5Khz or 15Khz" and press the "OK" softkey.
17. **ANI Type:** Default is set to "None".
 To change setting, press the "Edit" softkey and scroll up/down to select either "None, 5-Tone, or DTMF" and press the "OK" softkey.
18. **Selcall Type:** Default is set to "None".
 To change settings, press the "Edit" softkey and scroll up/down to select "None, 2-Tone, or 5-Tone" and press the "OK" softkey.
19. Once all parameters are entered, press the "Exit" softkey. (See Figure 8)
 Display will show "Save Changes Permanently?", press the "Yes" softkey key to save all the entered channel parameters.

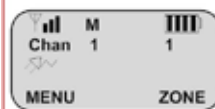


Figure 1

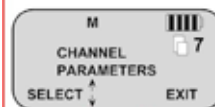


Figure 2

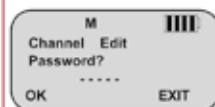


Figure 3

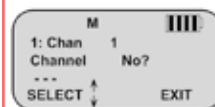


Figure 4

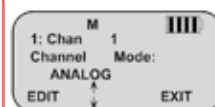


Figure 5

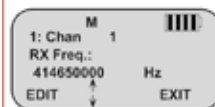


Figure 6

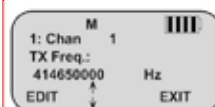


Figure 7

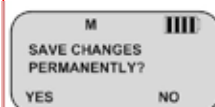


Figure 8

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION MIDLAND PORTABLE RADIO SETTINGS/OPTIONS GUIDE Page 2 of 4, Version 2014

CHANGING ZONES

To change groups, press the "**Zone**" softkey. Enter the zone number via the key pad and press the "**OK**" softkey. (See Figure 1)

OR

Press the "**Zone**" softkey. Press the UP/Down keypad keys to desired zone and press the "**OK**" softkey. (See Figure 2)

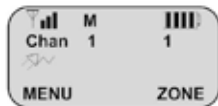


Figure 1

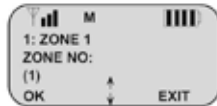


Figure 2

ENABLING/DISABLING SCAN

To Enable Scan - Press the "**Scan**" softkey. The display will indicate the radio is scanning by a "Z" icon in the upper right corner.

To Disable Scan - Press the "**Scan**" softkey.

Note: Pressing the "Menu" softkey while scanning will also disable scan.

If no channels are in the scan list, the user will get the following error "Enter Scan List" on the display.

ADD/REMOVE CHANNEL FROM SCAN LIST

To Add a Channel - Press the "**Menu**" softkey, scroll down to "**Channel Parameter**" using the up/down softkeys and press the "**Select**" softkey.

Scroll down to "**Channel Scan**" and press the "**Select**" softkey.

Scroll down/up to desired channel and press the "**Select**" softkey. Scroll to "**Add to List**", "**1st Priority**" or "**2nd Priority**" and press the "**OK**" softkey.

Press the "**Exit**" softkey, and continue adding more channels to the scan list.

Once complete, press "**Exit**" twice to close scan edit list.

To Remove a Channel - Repeat the process and select "**Remove**".

TX POWER SELECTION

Press the "**F1**" side button to cycle between

HI/MID/LOW power settings.

Note: H= HI Power/ M=Medium Power/ L=Low Power (See Figures 3, 4 and 5)



Figure 3



Figure 4



Figure 5

LOCKING KEYPAD

Press the "**Lock**" softkey once to lock key pad.

Press the "**Lock**" softkey once more then press the "**Unlock**" softkey to unlock keypad.

SQUELCH ADJUSTMENT

Press and hold the "**F2 Squelch**" button to open the "**Squelch Adjust**" parameter. (See Figure 6)

Adjust the squelch setting by using the up/down softkeys and press the "**OK**" softkey.

Note: Setting squelch to the far left, completely opens the squelch sensitivity setting (Open Squelch). (See Figure 7)



Figure 6



Figure 7

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

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1. Turn power **ON** by turning the ON/OFF Volume Knob clockwise.
The LCD will indicate the current channel label.
 2. Select a zone number by pressing the appropriate the **"Zone"** softkey. Enter the zone number via the key pad and press the **" OK"** softkey.
OR
Press the **"Zone"** softkey. Press the UP/Down keypad keys to desired zone and press the **" OK"** softkey.
 3. Select a channel by turning the Channel Select Knob to one of the 16 available positions.
 4. Adjust the volume by pressing the **" F2 Squelch"** button once to open the squelch and set the volume to desired level, press the **" F2 Squelch"** key once more to close Squelch. The radio will display **" CHANNEL MONITOR ON or OFF"**. To exit, press the **" Exit"** softkey or wait 3 seconds and the radio will return to it's default operating display.
The radio is now ready to operate on that current group and channel.
- Note:** Holding down the **"F2 Squelch"** button will open the **"Squelch Adjust"** parameter of the radio. This setting allows the user to adjust the squelch setting for each individual channel. To ext, press the **"Exit"** softkey or wait 3 seconds and the radio will return to it's default operating display.
6. To transmit, press and hold the Push-To-Talk (**PTT**) button on the side of the radio.
Note: The Transmit Indicator Light should glow red while transmitting.
If not, the battery may be low or the channel is **RX** only or busy.
 7. Pause 1 second and talk in a normal voice into the microphone.
Note: Try to shield the microphone from wind and other loud background noises for clearer transmissions.
 8. Release the PTT to stop transmitting and receive incoming transmissions.



Figure 1: Front View Midland

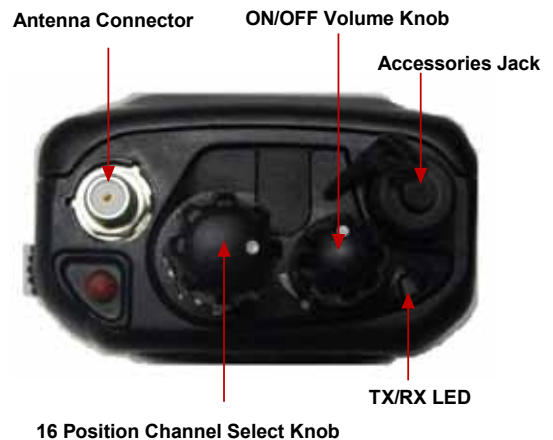


Figure 2: Top View Midland

NATIONAL INTERAGENCY INCIDENT COMMUNICATIONS DIVISION

MIDLAND RADIO CLONING INSTRUCTIONS

Page 4 of 4, Version 2013

1. Turn both radios ON.
2. Attach each end of the cloning cable to each Accessories Jack on top of the radio. *(See Figure 8)*
There is no master or slave connections on the cloning cable.
Note: The Master radio will clone from it's current group into the Slaves current group, verify the Master and the Slave radios are in the appropriate groups before cloning.
3. On the Master radio, select "Menu" using the left radio softkey. *(See Figure 1)*
Scroll down to "Channel Parameters" via the up/down arrow softkeys and press the "Select" softkey. *(See Figure 2)*
Scroll down to "Cloner" and press the "Select" softkey. *(See Figure 3)*
Select "Single Zone" via the up/down arrow softkeys and press the "Select" softkey. *(See Figure 4)*
Press the "Prog" softkey to send the clone over to the Slave radio. *(See Figure 5)*
The Master radio will communicate with the slave radio and write the cloned group. *(See Figure 6)*
4. Once the cloning is successful, press the "Exit" softkey three times to exit out of the programming/cloning mode. *(See Figure 7)*

Midland Cloning Cable



Figure 8: Midland Cloning Connections

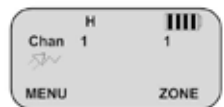


Figure 1



Figure 2



Figure 3

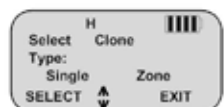


Figure 4

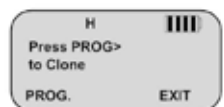


Figure 5

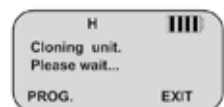


Figure 6

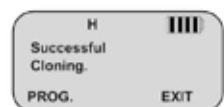


Figure 7

APPENDIX C

RADIO PROGRAMMING POCKET GUIDES

These diagrams are also available for download online at:

[Http://www.nifc.gov/NIICD/documents.html](http://www.nifc.gov/NIICD/documents.html)

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DPH KING RADIO QUICK PROGRAM GUIDE

Version 2012



- Select a group and channel needed to program.**
Select a group by pressing the "#" key followed by a 2-digit group number and press the "ENT" key.
- Program Access**
 - Insert programming plug into radio side connector.
 - Press and hold the master switch on plug.
 - While pressing the master switch, press and hold the "FCN" key for about 3 secs.
 - LCD should display "-- -- ID". (Note: NIICD radio password is "000000")
 - Enter the SIX-DIGIT password and press the "ENT" key to enter program mode.
 - If the correct password was entered, the LCD will display "PRG CH00".
- Programming a Channel (ANALOG ONLY)**
Once in the Program Mode, press a 2-digit channel number to program with the keypad.

"PRG CH 01"	Channel 01 Settings is currently selected.
"PRG RX CII 01N"	Press # to toggle between Narrow/Wide Band and press the "FCN" key.
"PRG RX TX 170.47500"	Press CLR and enter new RX Frequency and press the "ENT" key.
"PRG RX TX MODE-A"	Change RX Mode with "PRI" key to "A" for Analog and press the "ENT" key.
"PRG RX CG 000.0"	Press "CLR" and enter new RX Code Guard and press "ENT" key.
"PRG RX ID CII 0659"	RX NAC, DIGITAL ONLY, press the "ENT" key to skip to next field.
"PRG RX ID SQL-NRMI"	Change "Squelch" with "PRI" key to "NRM" and press the "ENT" key.
"PRG TX 170.47500"	Press "CLR" and enter new TX Frequency and press the "ENT" key.
"PRG TX TX MODE-A"	Change TX Mode with "PRI" key to "A" for Analog and press the "ENT" key.
"PRG TX CG 103.5"	Press "CLR" and enter new TX Code Guard and press the "ENT" key.
"PRG TX ID CII 0659"	RX NAC, DIGITAL ONLY, press the "ENT" key to skip to next field.
"PRG TX ID TG00001"	TX NAC, DIGITAL ONLY, press the "ENT" key to skip to next field.
"PRG CHAN 1"	Talk Group ID, DIGITAL ONLY, press the "ENT" key to skip to next field.
	Channel Label, press "ENT" to bring up the first programming field (PRG CH 01N).
- Channel Programming is complete.** At this point the user may select another channel to program or exit the program mode by cycling power to the radio.

DPH SETTINGS & OPTIONS

ADD Channel to Scan List
Select CH with CH knob and press the "ENT" key.
"SCN" will appear in upper display.

DELETE Channel from Scan List
Select CH with CH knob and press the "CLR" key.
"SCN" will be removed from the upper display.
Note: Scan must be disabled to add/delete CH's from scan list.

ADD PRI Scan Channel
Select CH, Press "PRI" key, PRI will appear in display.
Priority Mode B, C or D must be enabled to change PRI Channel via the keypad.
Note: See DPH Help Files for more information.

Changing Groups: (See Step 1 on Front Page)

III/LOW Power Selection
Select LO Power by toggling the LO/III Switch to the up position. (Towards the back of the radio)

Select III Power by toggling the LO/III Switch to the down position. (Towards the front of the radio)

TX User Selectable Tones
To Enable Tone, press number on keypad to select.

To Disable Tone, press the number "0" on keypad.
Note: NIICD Radios TX User Tones are Disabled.

Disable/Enable Keypad
To Disable, press and hold "FCN" key.
To Enable, press and hold "FCN" key.

Bold= Flashing DPH NIICD Radios ONLY.



DPH KING RADIO QUICK PROGRAM GUIDE

Version 2012



- Select a group and channel needed to program.**
Select a group by pressing the "#" key followed by a 2-digit group number and press the "ENT" key.
- Program Access**
 - Insert programming plug into radio side connector.
 - Press and hold the master switch on plug.
 - While pressing the master switch, press and hold the "FCN" key for about 3 secs.
 - LCD should display "-- -- ID". (Note: NIICD radio password is "000000")
 - Enter the SIX-DIGIT password and press the "ENT" key to enter program mode.
 - If the correct password was entered, the LCD will display "PRG CH 00".
- Programming a Channel (ANALOG ONLY)**
Once in the Program Mode, press a 2-digit channel number to program with the keypad.

"PRG CH 01"	Channel 01 Settings is currently selected.
"PRG RX CII 01N"	Press # to toggle between Narrow/Wide Band and press the "FCN" key.
"PRG RX TX 170.47500"	Press CLR and enter new RX Frequency and press the "ENT" key.
"PRG RX TX MODE-A"	Change RX Mode with "PRI" key to "A" for Analog and press the "ENT" key.
"PRG RX CG 000.0"	Press "CLR" and enter new RX Code Guard and press "ENT" key.
"PRG RX ID CII 0659"	RX NAC, DIGITAL ONLY, press the "ENT" key to skip to next field.
"PRG RX ID SQL-NRMI"	Change "Squelch" with "PRI" key to "NRM" and press the "ENT" key.
"PRG TX 170.47500"	Press "CLR" and enter new TX Frequency and press the "ENT" key.
"PRG TX TX MODE-A"	Change TX Mode with "PRI" key to "A" for Analog and press the "ENT" key.
"PRG TX CG 103.5"	Press "CLR" and enter new TX Code Guard and press the "ENT" key.
"PRG TX ID CII 0659"	RX NAC, DIGITAL ONLY, press the "ENT" key to skip to next field.
"PRG TX ID TG00001"	TX NAC, DIGITAL ONLY, press the "ENT" key to skip to next field.
"PRG CHAN 1"	Talk Group ID, DIGITAL ONLY, press the "ENT" key to skip to next field.
	Channel Label, press "ENT" to bring up the first programming field (PRG CH 01N).
- Channel Programming is complete.** At this point the user may select another channel to program or exit the program mode by cycling power to the radio.

DPH SETTINGS & OPTIONS

ADD Channel to Scan List
Select CH with CH knob and press the "ENT" key.
"SCN" will appear in upper display.

DELETE Channel from Scan List
Select CH with CH knob and press the "CLR" key.
"SCN" will be removed from the upper display.
Note: Scan must be disabled to add/delete CH's from scan list.

ADD PRI Scan Channel
Select CH, Press "PRI" key, PRI will appear in display.
Priority Mode B, C or D must be enabled to change PRI Channel via the keypad.
Note: See DPH Help Files for more information.

Changing Groups: (See Step 1 on Front Page)

III/LOW Power Selection
Select LO Power by toggling the LO/III Switch to the up position. (Towards the back of the radio)

Select III Power by toggling the LO/III Switch to the down position. (Towards the front of the radio)

TX User Selectable Tones
To Enable Tone, press number on keypad to select.

To Disable Tone, press the number "0" on keypad.
Note: NIICD Radios TX User Tones are Disabled.

Disable/Enable Keypad
To Disable, press and hold "FCN" key.
To Enable, press and hold "FCN" key.

Bold= Flashing DPH NIICD Radios ONLY.

1. Program Access

Press the 4-Way Navigation Key to the right until "FPP" softkey is displayed. Press the "FPP" softkey to proceed into programming mode. Radio will prompt for "Password", press the "OK" softkey to enter program mode. Once desired zone is reached, press the "VIEW" softkey to select that zone channel information.

2. Programming a Channel (ANALOG Only)

Once the zone is selected, select the desired channel, by pressing the 4-Way Nav. key left or right. Press the "View" softkey to change that particular channel information. Press the "Edit" softkey to change the "TX" frequency, press the "OK" key when done. Press the 4-Way key to the right to enter the RX frequency. Press the "Edit" softkey to change the "RX" frequency, press the "OK" key when done. Press the 4-Way key to the right several times until "RX Type" is displayed. Press the "Edit" softkey to change the RX type, press the 4-way key up/down to toggle between "ANALOG", "MIXED" or "DIGITAL", select "ANALOG" and press the "OK" key when done. Press the 4-way key to the right several times until "Bandwidth" is displayed. Press the "Edit" softkey to change the Bandwidth, press the 4-Way key up/down to toggle between "12.5KHz", "20.0KHz", or "25.0KHz", select "12.5KHz" for narrowband and press the "OK" key. Once all the programming parameters have been entered for that channel, press the "Done" softkey and select another channel to program or press the "HOME" key to exit programming mode.

Note: Do not change TX/RX DPL, or TX/RX NAC for analog channels, these parameters are used for digital channel only.

NITC0 XTS 2500/5000 Radios ONLY

MOTOROLA XTS 2500/5000 SETTINGS AND OPTIONS

CHANGING ZONES/GROUPS

1. To change zones/groups, press the "ZONE" softkey from the default screen/display.
2. Select the desired zone/group by scrolling right/left with the 4-Way Navigation Switch.
(or direct enter a 2 digit zone/group number via the key)
3. Once a desired zone/group is selected, press the "HOME" button to make that zone/group active.

ENABLE/DISABLE SCAN/PRIORITY SCAN

1. To Enable Scan, place the 3-Position Rotary/Toggle Switch to the "B" or "C" position. LCD will indicate the radio is in scan mode, by displaying an () icon on the upper LCD.
2. To Disable Scan, place the 3-Position Rotary/Toggle Switch to the "A" position.
NOTE: If no channels are in the Scan List, the radio will beep and indicate empty scan list on the LCD when scan is enabled.

ADD/REMOVE CHANNELS FROM SCAN/PRIORITY LIST

1. To add a channel to the Scan List, press the "PROG" softkey from the default screen/display.
2. Press the "SCAN" softkey to enter into the scan list programming mode.
3. Select the desired channel to scan with the top 16 Channel Select Knob.
4. Press the "SEL" softkey once to enter that selected channel in the scan list. LCD will indicate the channel is in the scan list, by displaying an () icon on the upper LCD.
5. Press the "SEL" softkey once more to enter that selected channel as the scan priority 1 channel. LCD will indicate the radio is PRI 1 by displaying an () icon on the upper part of the LCD.
6. Press the "SEL" softkey once more to enter that selected channel as the scan priority 2 channel. LCD will indicate the radio is PRI 2 by displaying an () icon on the upper part of the LCD.
7. Press the "SEL" softkey once more to remove the channel from the scan list completely. Or press the "DEL" softkey to remove the channel from the scan list.
8. Press the "HOME" button to return to the main screen.

(See Motorola XTS 2500/5000 Help Files for more Detail)



1. Program Access

Press the 4-Way Navigation Key to the right until "FPP" softkey is displayed. Press the "FPP" softkey to proceed into programming mode. Radio will prompt for "Password", press the "OK" softkey to enter program mode. Once desired zone is reached, press the "VIEW" softkey to select that zone channel information.

2. Programming a Channel (ANALOG Only)

Once the zone is selected, select the desired channel, by pressing the 4-Way Nav. key left or right. Press the "View" softkey to change that particular channel information. Press the "Edit" softkey to change the "TX" frequency, press the "OK" key when done. Press the 4-Way key to the right to enter the RX frequency. Press the "Edit" softkey to change the "RX" frequency, press the "OK" key when done. Press the 4-Way key to the right several times until "RX Type" is displayed. Press the "Edit" softkey to change the RX type, press the 4-way key up/down to toggle between "ANALOG", "MIXED" or "DIGITAL", select "ANALOG" and press the "OK" key when done. Press the 4-way key to the right several times until "Bandwidth" is displayed. Press the "Edit" softkey to change the Bandwidth, press the 4-Way key up/down to toggle between "12.5KHz", "20.0KHz", or "25.0KHz", select "12.5KHz" for narrowband and press the "OK" key. Once all the programming parameters have been entered for that channel, press the "Done" softkey and select another channel to program or press the "HOME" key to exit programming mode.

Note: Do not change TX/RX DPL, or TX/RX NAC for analog channels, these parameters are used for digital channel only.

NITC0 XTS 2500/5000 Radios ONLY

MOTOROLA XTS 2500/5000 SETTINGS AND OPTIONS

CHANGING ZONES/GROUPS

1. To change zones/groups, press the "ZONE" softkey from the default screen/display.
2. Select the desired zone/group by scrolling right/left with the 4-Way Navigation Switch.
(or direct enter a 2 digit zone/group number via the key)
3. Once a desired zone/group is selected, press the "HOME" button to make that zone/group active.

ENABLE/DISABLE SCAN/PRIORITY SCAN

1. To Enable Scan, place the 3-Position Rotary/Toggle Switch to the "B" or "C" position. LCD will indicate the radio is in scan mode, by displaying an () icon on the upper LCD.
2. To Disable Scan, place the 3-Position Rotary/Toggle Switch to the "A" position.
NOTE: If no channels are in the Scan List, the radio will beep and indicate empty scan list on the LCD when scan is enabled.

ADD/REMOVE CHANNELS FROM SCAN/PRIORITY LIST

1. To add a channel to the Scan List, press the "PROG" softkey from the default screen/display.
2. Press the "SCAN" softkey to enter into the scan list programming mode.
3. Select the desired channel to scan with the top 16 Channel Select Knob.
4. Press the "SEL" softkey once to enter that selected channel in the scan list. LCD will indicate the channel is in the scan list, by displaying an () icon on the upper LCD.
5. Press the "SEL" softkey once more to enter that selected channel as the scan priority 1 channel. LCD will indicate the radio is PRI 1 by displaying an () icon on the upper part of the LCD.
6. Press the "SEL" softkey once more to enter that selected channel as the scan priority 2 channel. LCD will indicate the radio is PRI 2 by displaying an () icon on the upper part of the LCD.
7. Press the "SEL" softkey once more to remove the channel from the scan list completely. Or press the "DEL" softkey to remove the channel from the scan list.
8. Press the "HOME" button to return to the main screen.

(See Motorola XTS 2500/5000 Help Files for more Detail)

1. Select a group and channel needed to program.
 2. Program Access
Press the "ENTER" key to bring up the Main Menu Screen. Scroll up/down using the "O" and "D" keys to select "PROGRAM" and press "ENTER" key. Enter a 6-Digit Password if requested and press "ENTER". (NIPC Password is "000000")
 3. Programming a Channel (ANALOG Only)
 - o Scroll down to "CHANNEL" and press "ENTER". To start programming the channel parameters.
 - o Scroll down to "TAG" and press "ENTER". Change the channel name using keypad and press "ENTER".
 - o Scroll down to "MODE" and press "ENTER". Select "ANALOG" and press "ENTER".
 - o Scroll down to "BW" and press "ENTER". Select either "25KHz" or "12.5KHz" and press "ENTER".
Note: 25KHz= Wideband, 12.5KHz= Narrowband
 - o Scroll down to "ENCRYPT" and press "ENTER". Select "DISABD" and press "ENTER".
 - o Scroll down to "RX" and press "ENTER". Enter the RX frequency using keypad and press "ENTER".
 - o Scroll down to "RX SQMID" and press "ENTER". Select either NOISE, DCS, CTCSS, or NONE.
Note: "NOISE" uses Squelch level to open RX. "DCS" use DCS code to open RX. "CTCSS" uses CTCSS to open RX and "None" opens RX squelch at all times.
 - o Scroll down to "TX" and press "ENTER". Enter the TX frequency using keypad and press "ENTER".
 - o Scroll down to "TX SQMID" and press "ENTER". Select either DCS, CTCSS, or NONE.
Note: "DCS" sends DCS code on TX carrier, "CTCSS" send CTCSS tone on TX carrier, and "None" sends no tones.
 - o Scroll down to "LO PWR" and press "ENTER". Select either "0.1", "0.5", "1.0", "2.0" or "5.0" and press the "ENTER" key.
 - o Scroll down to "HI PWR" and press "ENTER". Select either "0.1", "0.5", "1.0", "2.0" or "5.0" and press the "ENTER" key.
- If screen reads "SAVE CHANNEL", select "YES". If not, Channel information was stored and you can select another Channel and continue programming or press "ESC" a few times to reach main screen.

NITC/D Racal Radios ONLY

RACAL SETTINGS AND OPTIONS

ADD/REMOVING A CH FROM SCAN LIST

1. Select a Channel to Add to Scan List with the channel select knob.
2. To Add, briefly press & release the "D" key, when released a box "C" will enclose the "C" in the display.
3. To Remove, briefly press & release the "O" key. The box "C" will be removed from the "C" in the display.

ADD PRIORITY SCAN CHANNEL

1. Press the "ENTER" key for bring up the Main Menu, and select "PROGRAM".
2. Scroll down to "SCAN" and press the "ENTER" key.
3. Scroll down to "P1" and Press "ENTER". Select channel by using CH Select Knob and press "ENT".
4. Press "ESC" key a few times to return to main screen.

*Note: To Enable Scan, top toggle switch must be in position B.
To Enable Priority Scan, toggle switch must be in position A.
To Disable Scan/Pri Scan, toggle switch must be in position C.*

CHANGE ZONES

1. Press the "ENTER" key to bring up the Main Menu Screen.
2. Scroll down to "SELECT" and press the "ENTER" key.
3. Scroll down to "ZONE" and press "ENTER". Scroll to the desired zone and press "ENTER", then press "ESC" a few times to reach the main screen.

DISABLE/ENABLE KEYPAD

1. Press and hold the "O" key while pressing and holding the "ENTER" key. Display will show "Keys Disabled", "Side Enabled".
2. Repeat the process, display shows "Keys Disabled, Side Disabled"
3. To Enable all, repeat the process on more time.

HI/LOW POWER SELECTION

1. Press the programmed power selection side button to toggle between HI and LOW Power.

Note: Third side button from the top is programmed as the HI/LOW Power Switch.

(See RACAL Help Files for more Details)

1. Select a group and channel needed to program.
 2. Program Access
Press the "ENTER" key to bring up the Main Menu Screen. Scroll up/down using the "O" and "D" keys to select "PROGRAM" and press "ENTER" key. Enter a 6-Digit Password if requested and press "ENTER". (NIPC Password is "000000")
 3. Programming a Channel (ANALOG Only)
 - o Scroll down to "CHANNEL" and press "ENTER". To start programming the channel parameters.
 - o Scroll down to "TAG" and press "ENTER". Change the channel name using keypad and press "ENTER".
 - o Scroll down to "MODE" and press "ENTER". Select "ANALOG" and press "ENTER".
 - o Scroll down to "BW" and press "ENTER". Select either "25KHz" or "12.5KHz" and press "ENTER".
Note: 25KHz= Wideband, 12.5KHz= Narrowband
 - o Scroll down to "ENCRYPT" and press "ENTER". Select "DISABD" and press "ENTER".
 - o Scroll down to "RX" and press "ENTER". Enter the RX frequency using keypad and press "ENTER".
 - o Scroll down to "RX SQMID" and press "ENTER". Select either NOISE, DCS, CTCSS, or NONE.
Note: "NOISE" uses Squelch level to open RX. "DCS" use DCS code to open RX. "CTCSS" uses CTCSS to open RX and "None" opens RX squelch at all times.
 - o Scroll down to "TX" and press "ENTER". Enter the TX frequency using keypad and press "ENTER".
 - o Scroll down to "TX SQMID" and press "ENTER". Select either DCS, CTCSS, or NONE.
Note: "DCS" sends DCS code on TX carrier, "CTCSS" send CTCSS tone on TX carrier, and "None" sends no tones.
 - o Scroll down to "LO PWR" and press "ENTER". Select either "0.1", "0.5", "1.0", "2.0" or "5.0" and press the "ENTER" key.
 - o Scroll down to "HI PWR" and press "ENTER". Select either "0.1", "0.5", "1.0", "2.0" or "5.0" and press the "ENTER" key.
- If screen reads "SAVE CHANNEL", select "YES". If not, Channel information was stored and you can select another Channel and continue programming or press "ESC" a few times to reach main screen.

NITC/D Racal Radios ONLY

RACAL SETTINGS AND OPTIONS

ADD/REMOVING A CH FROM SCAN LIST

1. Select a Channel to Add to Scan List with the channel select knob.
2. To Add, briefly press & release the "D" key, when released a box "C" will enclose the "C" in the display.
3. To Remove, briefly press & release the "O" key. The box "C" will be removed from the "C" in the display.

ADD PRIORITY SCAN CHANNEL

1. Press the "ENTER" key for bring up the Main Menu, and select "PROGRAM".
2. Scroll down to "SCAN" and press the "ENTER" key.
3. Scroll down to "P1" and Press "ENTER". Select channel by using CH Select Knob and press "ENT".
4. Press "ESC" key a few times to return to main screen.

*Note: To Enable Scan, top toggle switch must be in position B.
To Enable Priority Scan, toggle switch must be in position A.
To Disable Scan/Pri Scan, toggle switch must be in position C.*

CHANGE ZONES

1. Press the "ENTER" key to bring up the Main Menu Screen.
2. Scroll down to "SELECT" and press the "ENTER" key.
3. Scroll down to "ZONE" and press "ENTER". Scroll to the desired zone and press "ENTER", then press "ESC" a few times to reach the main screen.

DISABLE/ENABLE KEYPAD

1. Press and hold the "O" key while pressing and holding the "ENTER" key. Display will show "Keys Disabled", "Side Enabled".
2. Repeat the process, display shows "Keys Disabled, Side Disabled"
3. To Enable all, repeat the process on more time.

HI/LOW POWER SELECTION

1. Press the programmed power selection side button to toggle between HI and LOW Power.

Note: Third side button from the top is programmed as the HI/LOW Power Switch.

(See RACAL Help Files for more Details)

1. Select a group and channel needed to program.

2. Program Access

Press the Large **Green** Multi-function key to bring up the Main Menu Screen. Scroll up/down using the **Blue** Multi-function keys to select "**PROGRAM**" and press "**ENT**" key. Enter a 6-Digit Password if requested and press "**ENT**". (*NIFC Password is "000000"*)

3. Programming a Channel (ANALOG Only)

- o Scroll down to "**CHANEL**" and press "**ENT**" to start programming the channel parameters.
- o Scroll down to "**TAG**" and press "**ENT**". Change the channel name using keypad and press "**ENT**".
- o Scroll down to "**MODE**" and press "**ENT**". Select "**ANALOG**" and press "**ENT**".
- o Scroll down to "**BW**" and press "**ENTER**". Select either "**25KHz**" or "**12.5KHz**" and press "**ENT**".

Note: 25KHz = Wideband, 12.5KHz = Narrowband

- o Scroll down to "**ENCRPT**" and press "**ENT**". Select "**DISABD**" and press "**ENT**".
- o Scroll down to "**RX**" and press "**ENTER**". Enter the RX frequency using keypad and press "**ENT**".
- o Scroll down to "**RX SQMID**" and press "**ENT**". Select either **NOISE**, **DCS**, **CTCSS**, or **NONE**.

Note: "NOISE" uses Squelch level to open RX. "DCS" uses DCS code to open RX. "CTCSS" uses CTCSS to open RX, and "None" opens RX squelch at all times.

- o Scroll down to "**TX**" and press "**ENT**". Enter the TX frequency using keypad and press "**ENT**".
- o Scroll down to "**TX SQMID**" and press "**ENT**". Select either **DCS**, **CTCSS**, or **NONE**.

Note: "DCS" sends DCS code on TX carrier, "CTCSS" send CTCSS tone on TX carrier, and "None" sends no tones.

- o Scroll down to "**LO PWR**" and press "**ENT**". Select either "**0.1**", "**0.5**", "**1.0**", "**2.0**" or "**5.0**" and press the "**ENTER**" key.
- o Scroll down to "**HI PWR**" and press "**ENT**". Select either "**0.1**", "**0.5**", "**1.0**", "**2.0**" or "**5.0**" and press the "**ENT**" key.

If screen reads "**SAVE CHANNEL**", select "**YES**". If not, Channel information was stored and you can select another Channel and continue programming or press "**ESC**" a few times to reach main screen.

DATRON SETTINGS AND OPTIONS

ADD/REMOVING A CHANNEL FROM SCAN LIST

1. Select a Channel to Add to Scan List with the channel select knob.
2. To Add, briefly press & release the 3rd Multi-function key from the left, when released a box "☐ " will enclose the "**C**" in the display.
3. To Remove, briefly press & release the 2nd Multi-function key from the left. The box "☐ " will be removed from the "**C**" in the display.

ADD PRIORITY SCAN CHANNEL

1. Press the Large **Green** Multi-function key for bring up the Main Menu, and select "**PROGRAM**".
2. Scroll down to "**SCAN**" and press "**ENT**".
3. Scroll down to "**PI**" and Press "**ENTER**". Select channel by using CH1 Select Knob and press "**ENT**".
4. Press "**ESC**" key a few times to return to main screen.

Note: To Enable Priority Scan, top toggle switch must be in position A.

To Disable Scan/Pri Scan, toggle switch must be in position C.

CHANGE ZONES

1. Press the large **Green** Multi-function key to bring up the Main Menu Screen.
2. Scroll down to "**SELECT**" and press "**ENT**".
3. Scroll down to "**ZONE**" and press "**ENT**". Scroll to the desired zone and press "**ENT**", then press "**ESC**" a few times to reach the main screen.

DISABLE/ENABLE KEYPAD

1. Press and hold the 1st Blue Multi function key while pressing and holding Large Green key. Display will show "**Keys Disabled**", "**Side Enabled**".
2. Repeat the process, display shows "**Keys Disabled, Side Disabled**".
3. To Unable all, repeat the process on more time.

HI/LOW POWER SELECTION

1. Press the programmed power selection side button to toggle between HI and LOW Power.

Note: Third side button from the top is programmed as the HI/LOW Power Switch.

(See Datron Help Files for more Details) NIICD Radios Only



1. Select a group and channel needed to program.

2. Program Access

Press the Large **Green** Multi-function key to bring up the Main Menu Screen. Scroll up/down using the **Blue** Multi-function keys to select "**PROGRAM**" and press "**ENT**" key. Enter a 6-Digit Password if requested and press "**ENT**". (*NIFC Password is "000000"*)

3. Programming a Channel (ANALOG Only)

- o Scroll down to "**CHANEL**" and press "**ENT**" to start programming the channel parameters.
- o Scroll down to "**TAG**" and press "**ENT**". Change the channel name using keypad and press "**ENT**".
- o Scroll down to "**MODE**" and press "**ENT**". Select "**ANALOG**" and press "**ENT**".
- o Scroll down to "**BW**" and press "**ENTER**". Select either "**25KHz**" or "**12.5KHz**" and press "**ENT**".

Note: 25KHz = Wideband, 12.5KHz = Narrowband

- o Scroll down to "**ENCRPT**" and press "**ENT**". Select "**DISABD**" and press "**ENT**".
- o Scroll down to "**RX**" and press "**ENTER**". Enter the RX frequency using keypad and press "**ENT**".
- o Scroll down to "**RX SQMID**" and press "**ENT**". Select either **NOISE**, **DCS**, **CTCSS**, or **NONE**.

Note: "NOISE" uses Squelch level to open RX. "DCS" uses DCS code to open RX. "CTCSS" uses CTCSS to open RX, and "None" opens RX squelch at all times.

- o Scroll down to "**TX**" and press "**ENT**". Enter the TX frequency using keypad and press "**ENT**".
- o Scroll down to "**TX SQMID**" and press "**ENT**". Select either **DCS**, **CTCSS**, or **NONE**.

Note: "DCS" sends DCS code on TX carrier, "CTCSS" send CTCSS tone on TX carrier, and "None" sends no tones.

- o Scroll down to "**LO PWR**" and press "**ENT**". Select either "**0.1**", "**0.5**", "**1.0**", "**2.0**" or "**5.0**" and press the "**ENTER**" key.
- o Scroll down to "**HI PWR**" and press "**ENT**". Select either "**0.1**", "**0.5**", "**1.0**", "**2.0**" or "**5.0**" and press the "**ENT**" key.

If screen reads "**SAVE CHANNEL**", select "**YES**". If not, Channel information was stored and you can select another Channel and continue programming or press "**ESC**" a few times to reach main screen.

DATRON SETTINGS AND OPTIONS

ADD/REMOVING A CHANNEL FROM SCAN LIST

1. Select a Channel to Add to Scan List with the channel select knob.
2. To Add, briefly press & release the 3rd Multi-function key from the left, when released a box "☐ " will enclose the "**C**" in the display.
3. To Remove, briefly press & release the 2nd Multi-function key from the left. The box "☐ " will be removed from the "**C**" in the display.

ADD PRIORITY SCAN CHANNEL

1. Press the Large **Green** Multi-function key for bring up the Main Menu, and select "**PROGRAM**".
2. Scroll down to "**SCAN**" and press "**ENT**".
3. Scroll down to "**PI**" and Press "**ENTER**". Select channel by using CH1 Select Knob and press "**ENT**".
4. Press "**ESC**" key a few times to return to main screen.

Note: To Enable Priority Scan, top toggle switch must be in position B.

To Disable Scan/Pri Scan, toggle switch must be in position C.

CHANGE ZONES

1. Press the large **Green** Multi-function key to bring up the Main Menu Screen.
2. Scroll down to "**SELECT**" and press "**ENT**".
3. Scroll down to "**ZONE**" and press "**ENT**". Scroll to the desired zone and press "**ENT**", then press "**ESC**" a few times to reach the main screen.

DISABLE/ENABLE KEYPAD

1. Press and hold the 1st Blue Multi function key while pressing and holding Large Green key. Display will show "**Keys Disabled**", "**Side Enabled**".
2. Repeat the process, display shows "**Keys Disabled, Side Disabled**".
3. To Unable all, repeat the process on more time.

HI/LOW POWER SELECTION

1. Press the programmed power selection side button to toggle between HI and LOW Power.

Note: Third side button from the top is programmed as the HI/LOW Power Switch.

(See Datron Help Files for more Details) NIICD Radios Only

MANUAL FREQUENCY ENTRY

1. Select Frequency Mode by pressing "CLR".
2. Enter desired frequency using digit keys on keypad, using the tuning dial, or using the "UP/DOWN" arrow keys.

Basic Operation

RECEIVING

1. Rotate "SQL" maximum clockwise, turn Power ON and adjust audio level.
2. Rotate "SQL" counterclockwise until noise is muted.
3. Set the desired frequency
Note: If "SQL" control is set too "tight", squelch may not open for weak signals.
4. Push the "ANI" side button to reduce pulse noise caused by engine ignitions or other outside interference.
5. The radio is ready to **RECEIVE** on that current Frequency.

TRANSMITTING

1. Set the desired frequency.
2. Press and hold the "PTT" to transmit.
3. Speak into mic at a normal voice level.
4. Release "PTT" to return to receive incoming transmissions.
Note: Try to shield the microphone from wind and other loud background noises for clearer transmissions.

(See ICOM Help Files for more detail information) NIICD Radios ONLY.

IC-A3 SETTINGS & OPTIONS

MEMORY CHANNEL SELECTION

1. Press the "MR" key to select memory mode.
2. Select desired memory channel using two digits (01-50) on the keypad or by rotating the channel knob.

Note: N1FC has preprogrammed 6 AM Frequencies in memory locations 1-6

PROGRAMMING A MEMORY CHANNEL

1. Set the desired frequency.
2. Press the "F" key then the "MR" key.
3. Select the memory channel (01-50) to be programmed using two digits on the keypad or rotating the channel knob.
4. Press "ENT" to enter the frequency in memory
or
5. Press "MR" to change the alpha/numeric label then pressing "ENT" to store the frequency and label into memory.

Note: Must know which keys correspond to alpha characters. When entering alpha characters, use up/down arrow keys to move cursor.

LOCK FUNCTION (DISABLE/ENABLE KEYPAD)

1. Press the "F" key then press the "7" key [KEY LOCK] to turn the function ON or OFF.
Note: A key icon appears in the display when Key Lock is on.

CLEARING MEMORY CONTENTS

1. Select a memory channel to be cleared.
2. Press "F" then press and hold "CLR" for 1 second. "-----" displays momentarily when memory is cleared.
Note: Programming over a memory channel also clears the programmed contents. Memory channel 1 cannot be cleared.



MANUAL FREQUENCY ENTRY

1. Select Frequency Mode by pressing "CLR".
2. Enter desired frequency using digit keys on keypad, using the tuning dial, or using the "UP/DOWN" arrow keys.

Basic Operation

RECEIVING

1. Rotate "SQL" maximum clockwise, turn Power ON and adjust audio level.
2. Rotate "SQL" counterclockwise until noise is muted.
3. Set the desired frequency
Note: If "SQL" control is set too "tight", squelch may not open for weak signals.
4. Push the "ANI" side button to reduce pulse noise caused by engine ignitions or other outside interference.
5. The radio is ready to **RECEIVE** on that current Frequency.

TRANSMITTING

1. Set the desired frequency.
2. Press and hold the "PTT" to transmit.
3. Speak into mic at a normal voice level.
4. Release "PTT" to return to receive incoming transmissions.
Note: Try to shield the microphone from wind and other loud background noises for clearer transmissions.

(See ICOM Help Files for more detail information) NIICD Radios ONLY.

IC-A3 SETTINGS & OPTIONS

MEMORY CHANNEL SELECTION

1. Press the "MR" key to select memory mode.
2. Select desired memory channel using two digits (01-50) on the keypad or by rotating the channel knob.

Note: N1FC has preprogrammed 6 AM Frequencies in memory locations 1-6

PROGRAMMING A MEMORY CHANNEL

1. Set the desired frequency.
2. Press the "F" key then the "MR" key.
3. Select the memory channel (01-50) to be programmed using two digits on the keypad or rotating the channel knob.
4. Press "ENT" to enter the frequency in memory
or
5. Press "MR" to change the alpha/numeric label then pressing "ENT" to store the frequency and label into memory.

Note: Must know which keys correspond to alpha characters. When entering alpha characters, use up/down arrow keys to move cursor.

LOCK FUNCTION (DISABLE/ENABLE KEYPAD)

1. Press the "F" key then press the "7" key [KEY LOCK] to turn the function ON or OFF.
Note: A key icon appears in the display when Key Lock is on.

CLEARING MEMORY CONTENTS

1. Select a memory channel to be cleared.
2. Press "F" then press and hold "CLR" for 1 second. "-----" displays momentarily when memory is cleared.
Note: Programming over a memory channel also clears the programmed contents. Memory channel 1 cannot be cleared.



MIDLAND RADIO QUICK PROGRAMMING GUIDE

Version 2012



1. Select a group and channel needed to program.

2. Programming a Channel (Analog Only)

- o Select "Menu" softkey, scroll up/down to "Channel Parameters" and press the "Select" softkey
- o Scroll up/down to "Channel" and press the "Select" softkey. Enter a 5-Digit password and press "OK".
Note: NIICD Password is "00000"
- o Scroll up/down to desired channel and press the "Select" softkey.
- o **Channel Mode:** Press "Edit", then press "C" several times to clear and enter a new RX Freq and press "OK".
- o **RX Freq:** Press "Edit", then press "C" several times to clear and enter a new RX Freq and press "OK".
- o **TX Freq:** Press "Edit", then press "C" several times to clear and enter a new TX Freq and press "OK".
- o **TX Power:** Press "Edit" and scroll up/down to select "Low, Medium, or High" and press "OK".
Note: NIICD Default is Medium (2 Watts)
- o **Channel Name:** Press "Edit", then press " " several times to clear and enter new name via the alphanumeric keypad and press "OK" when done.
- o **TX Timeout:** Press "Edit" and scroll up/down to select "No or Yes" and press "OK".
Note: NIICD Default is set to "Yes", timer is set to 120 seconds.
- o **RX Tone Type:** Press "Edit" and scroll up/down to select "CCS or DCS" and press "OK".
- o **RX Tone:** Press "Edit" and scroll up/down to select desired tone from list and press "OK".
- o **TX Tone Type:** Press "Edit" and scroll up/down to select "CCS or DCS" and press "OK".
- o **TX Tone:** Press "Edit" and scroll up/down to select desired tone from list and press "OK".
- o **Channel Spacing:** Press "Edit" and scroll up/down to select "12.5KHz or 15KHz" and press "OK".
Note: Narrowband is "12.5KHz", Wideband is "15KHz"
- o **ANI Type:** Press "Edit" and scroll up/down to select "None, 5-Tone, or DTMF" and press "OK".
- o **Seccall Type:** Press "Edit" and scroll up/down to select "None, 2-Tone, or 5-Tone" and press "OK".
- o Once all parameters are entered, press the "Exit" key. Press "Yes" when display shows "Save Changes Permanently?".

NITCD Midland Radios ONLY

MIDLAND SETTINGS AND OPTIONS

CHANGING ZONES

To change groups, press the "Zone" softkey. Enter the zone number via the keypad and press the "OK" softkey.

OR

Press the "Zone" softkey. Press the L/P/Down keypad keys to desired zone and press the "OK" softkey.

ENABLING/DISABLING SCAN

To Enable Scan - Press the "C" softkey. The display will indicate the radio is scanning by a "Z" icon in the upper right corner.

To Disable Scan - Press the "C" softkey.

Note: Pressing the "Menu" softkey while scanning will also disable scan.

ADD/REMOVE CHANNEL FROM SCAN LIST

To Add a Channel - Press the "Menu" softkey, scroll down to "Channel Parameter" using the up/down softkeys and press the "Select" softkey.

Scroll down to "Channel Scan" and press the "Select" softkey.

Scroll up/down to desired channel and press the "Select" softkey. Scroll to "Add to List", "1st Priority" or "2nd Priority" and press the "OK" softkey.

Press the "Exit" softkey, and continue adding more channels to the scan list.

Once complete, press "Exit" twice to close scan edit list.

To Remove a Channel - Repeat the process and select "Remove".

HI/MID/LOW Power Selection

Note: H= High Power/ M=Medium Power/ L=Low Power

Press the "FT" side button to cycle between HI/MID/LOW power settings.

LOCKING KEYPAD

Press the " " softkey once to lock keypad.

Press the " " softkey once more then press the "Unlock" softkey to unlock keypad.

(See Midland Help Files for more Detail)



MIDLAND RADIO QUICK PROGRAMMING GUIDE

Version 2012



1. Select a group and channel needed to program.

2. Programming a Channel (Analog Only)

- o Select "Menu" softkey, scroll up/down to "Channel Parameters" and press the "Select" softkey
- o Scroll up/down to "Channel" and press the "Select" softkey. Enter a 5-Digit password and press "OK".
Note: NIICD Password is "00000"
- o Scroll up/down to desired channel and press the "Select" softkey.
- o **Channel Mode:** Press "Edit", then press "C" several times to clear and enter a new RX Freq and press "OK".
- o **RX Freq:** Press "Edit", then press "C" several times to clear and enter a new RX Freq and press "OK".
- o **TX Freq:** Press "Edit", then press "C" several times to clear and enter a new TX Freq and press "OK".
- o **TX Power:** Press "Edit" and scroll up/down to select "Low, Medium, or High" and press "OK".
Note: NIICD Default is Medium (2 Watts)
- o **Channel Name:** Press "Edit", then press " " several times to clear and enter new name via the alphanumeric keypad and press "OK" when done.
- o **TX Timeout:** Press "Edit" and scroll up/down to select "No or Yes" and press "OK".
Note: NIICD Default is set to "Yes", timer is set to 120 seconds.
- o **RX Tone Type:** Press "Edit" and scroll up/down to select "CCS or DCS" and press "OK".
- o **RX Tone:** Press "Edit" and scroll up/down to select desired tone from list and press "OK".
- o **TX Tone Type:** Press "Edit" and scroll up/down to select "CCS or DCS" and press "OK".
- o **TX Tone:** Press "Edit" and scroll up/down to select desired tone from list and press "OK".
- o **Channel Spacing:** Press "Edit" and scroll up/down to select "12.5KHz or 15KHz" and press "OK".
Note: Narrowband is "12.5KHz", Wideband is "15KHz"
- o **ANI Type:** Press "Edit" and scroll up/down to select "None, 5-Tone, or DTMF" and press "OK".
- o **Seccall Type:** Press "Edit" and scroll up/down to select "None, 2-Tone, or 5-Tone" and press "OK".
- o Once all parameters are entered, press the "Exit" key. Press "Yes" when display shows "Save Changes Permanently?".

NITCD Midland Radios ONLY

MIDLAND SETTINGS AND OPTIONS

CHANGING ZONES

To change groups, press the "Zone" softkey. Enter the zone number via the keypad and press the "OK" softkey.

OR

Press the "Zone" softkey. Press the L/P/Down keypad keys to desired zone and press the "OK" softkey.

ENABLING/DISABLING SCAN

To Enable Scan - Press the "C" softkey. The display will indicate the radio is scanning by a "Z" icon in the upper right corner.

To Disable Scan - Press the "C" softkey.

Note: Pressing the "Menu" softkey while scanning will also disable scan.

ADD/REMOVE CHANNEL FROM SCAN LIST

To Add a Channel - Press the "Menu" softkey, scroll down to "Channel Parameter" using the up/down softkeys and press the "Select" softkey.

Scroll down to "Channel Scan" and press the "Select" softkey.

Scroll up/down to desired channel and press the "Select" softkey. Scroll to "Add to List", "1st Priority" or "2nd Priority" and press the "OK" softkey.

Press the "Exit" softkey, and continue adding more channels to the scan list.

Once complete, press "Exit" twice to close scan edit list.

To Remove a Channel - Repeat the process and select "Remove".

HI/MID/LOW Power Selection

Note: H= High Power/ M=Medium Power/ L=Low Power

Press the "FT" side button to cycle between HI/MID/LOW power settings.

LOCKING KEYPAD

Press the " " softkey once to lock keypad.

Press the " " softkey once more then press the "Unlock" softkey to unlock keypad.

(See Midland Help Files for more Detail)

APPENDIX D

NIICD SYSTEM DIAGRAMS

These diagrams are also available for download online at:

[Http://www.nifc.gov/NIICD/documents.html](http://www.nifc.gov/NIICD/documents.html)

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COMMAND REPEATER WITH REMOTE KIT

- SUGGESTED EQUIPMENT:
1 EA 4312 COMMAND REPEATER KIT
1 EA 4330 REMOTE KIT
1 EA 4381 CMD/TAC RADIO KIT



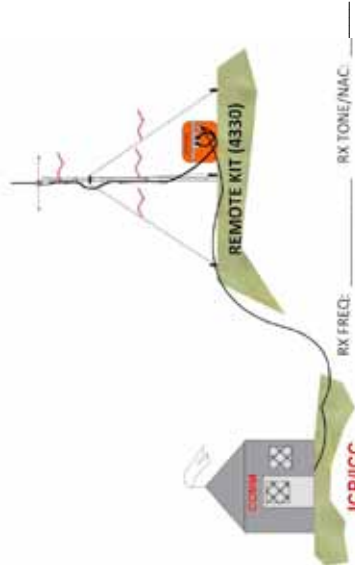
RX FREQ: _____ RX TONE/NAC: _____
TX FREQ: _____ TX TONE/ NAC: _____
KIT#: _____
LOCATION: _____
LAT.: _____ LONG.: _____
REMARKS: _____



RX FREQ: _____
RX TONE/NAC: _____
TX FREQ: _____
TX TONE/NAC: _____
GROUP #: _____
CHANNEL #: _____



INCIDENT OPERATIONS AREA



RX FREQ: _____ RX TONE/NAC: _____
TX FREQ: _____ TX TONE/ NAC: _____
GROUP #: _____ CHANNEL #: _____
KIT #: _____
LOCATION: _____
LAT.: _____ LONG.: _____
REMARKS: _____

DRAWING 1

INCIDENT:

UHF LOGISTICS REPEATER WITH TWO REMOTE KITS

- SUGGESTED EQUIPMENT:
1 EA 4248 LOGISTICS REPEATER KIT
1 EA 4244 LOGISTICS RADIO KIT
2 EA 4330 REMOTE KIT



RX FREQ: _____ RX TONE/NAC: _____

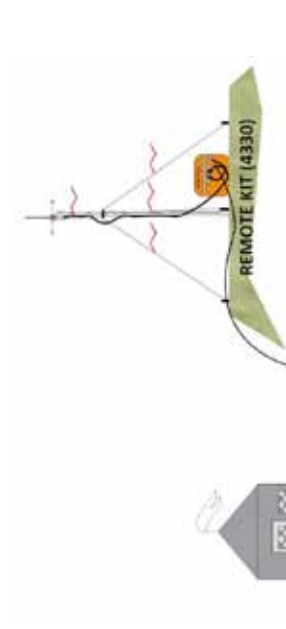
TX FREQ: _____ TX TONE/NAC: _____

KIT#: _____

LOCATION: _____

LAT.: _____ LONG.: _____

REMARKS: _____



RX FREQ: _____ RX TONE/NAC: _____

TX FREQ: _____ TX TONE/NAC: _____

GROUP #: _____ CHANNEL #: _____

KIT #: _____

LOCATION: _____

LAT.: _____ LONG.: _____

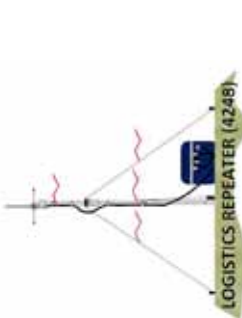
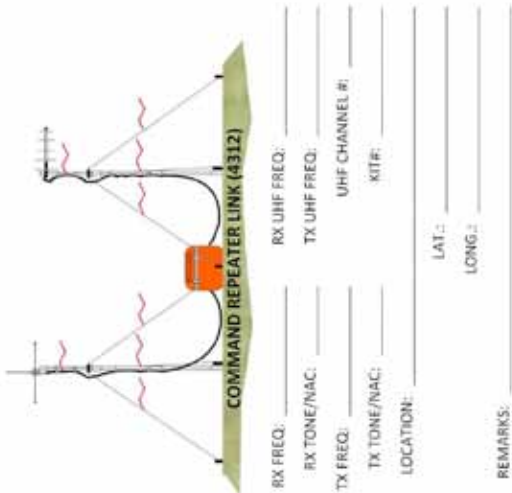
REMARKS: _____

DRAWING 2

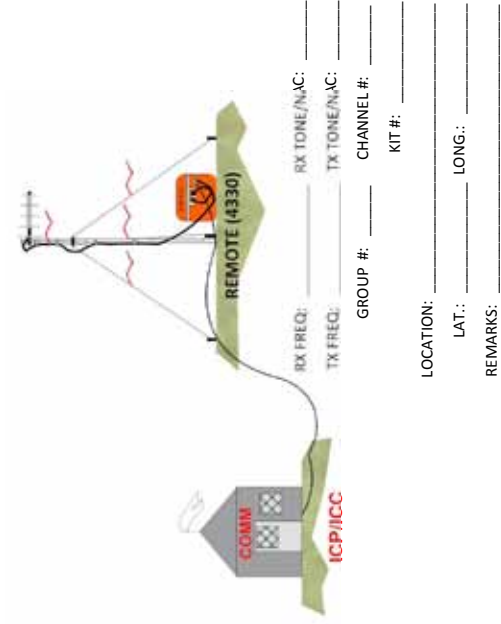
INCIDENT:

VHF COMMAND REPEATER LINKED THROUGH UHF LOGISTICS REPEATER

- SUGGESTED EQUIPMENT:
1 EA 4312 COMMAND REPEATER KIT
1 EA 4248 LOGISTICS REPEATER KIT
1 EA 4330 REMOTE KIT
1 EA 4381 CMD/TAC RADIO KIT



RX FREQ: _____ RX TONE/NAC: _____
TX FREQ: _____ TX TONE/NAC: _____
KIT#: _____
LOCATION: _____
LAT.: _____
LONG.: _____
REMARKS: _____



INCIDENT OPERATIONS AREA

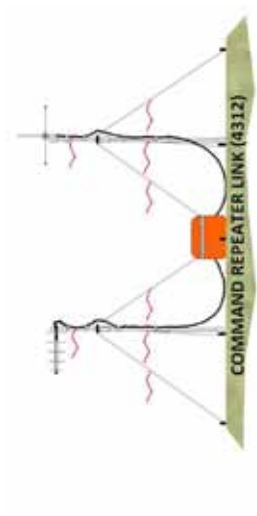
RX FREQ: _____
RX TONE/NAC: _____
TX FREQ: _____
TX TONE/NAC: _____
GROUP #: _____
CHANNEL #: _____

DRAWING 3

INCIDENT:

TWO VHF COMMAND REPEATERS LINKED VIA UHF SIMPLEX

- SUGGESTED EQUIPMENT:
2 EA 4312 COMMAND REPEATER KITS
1 EA 4381 CMD/TAC RADIO KIT
1 EA 4330 REMOTE KIT

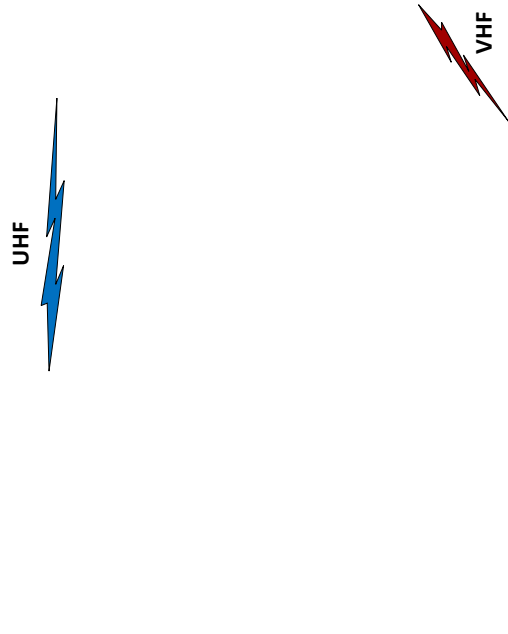


COMMAND REPEATER LINK (4312)

RX UHF FREQ: _____ RX TONE/NAC: _____
TX UHF FREQ: _____ TX TONE/NAC: _____
UHF CHANNEL #: _____ KIT#: _____

LOCATION: _____ LAT.: _____
LONG.: _____

REMARKS: _____

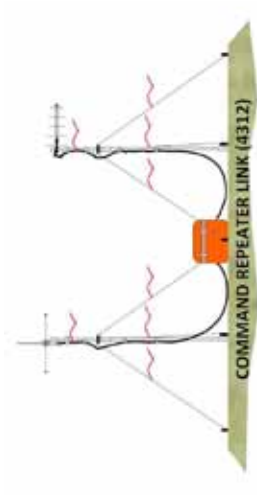


REMOTE KIT (4330)

RX FREQ: _____ RX TONE/NAC: _____
TX FREQ: _____ TX TONE/NAC: _____
GROUP #: _____ CHANNEL #: _____
KIT #: _____

LOCATION: _____ LAT.: _____
LONG.: _____

REMARKS: _____



COMMAND REPEATER LINK (4312)

RX FREQ: _____ RX UHF FREQ: _____
RX TONE/NAC: _____ TX UHF FREQ: _____
TX FREQ: _____ UHF CHANNEL #: _____
TX TONE/NAC: _____ KIT#: _____

LOCATION: _____ LAT.: _____
LONG.: _____

REMARKS: _____



INCIDENT OPERATIONS AREA 1

RX FREQ: _____
RX TONE/NAC: _____
TX FREQ: _____
TX TONE/NAC: _____
GROUP #: _____
CHANNEL #: _____



INCIDENT OPERATIONS AREA 2

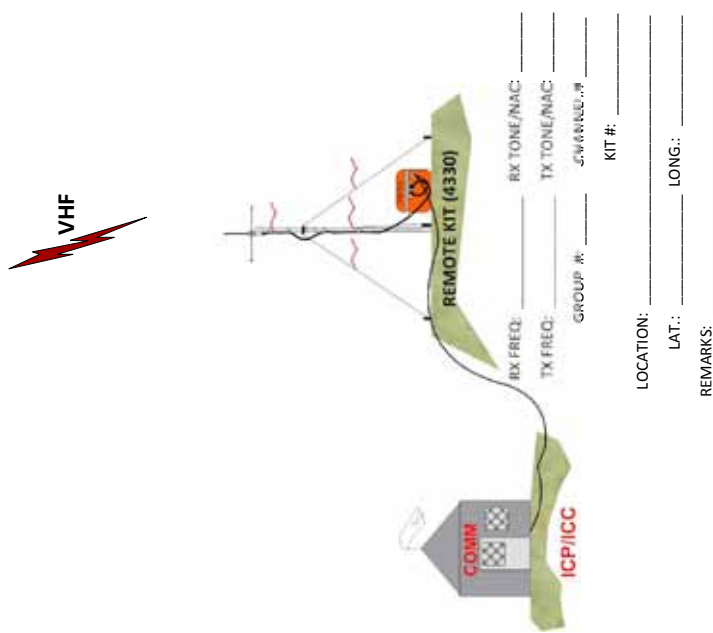
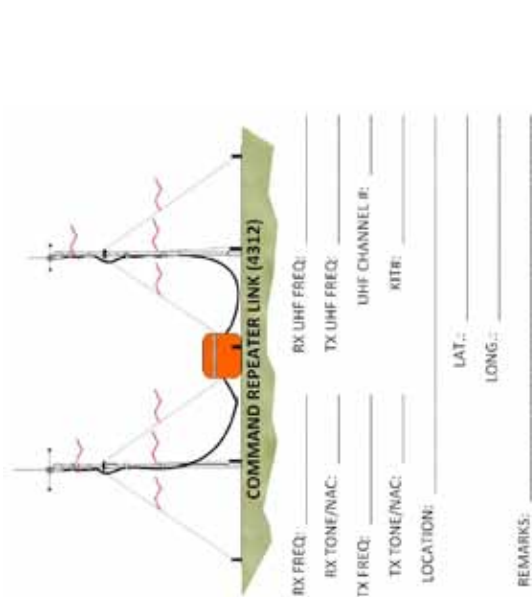
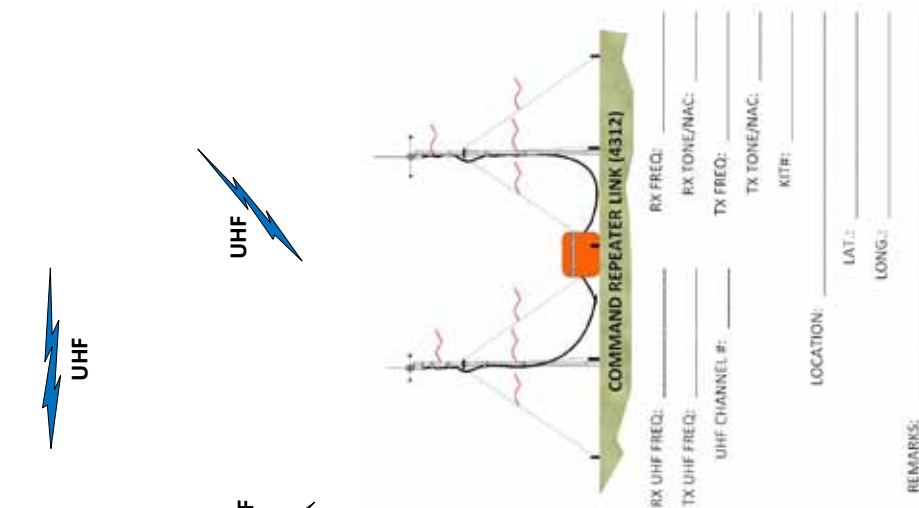
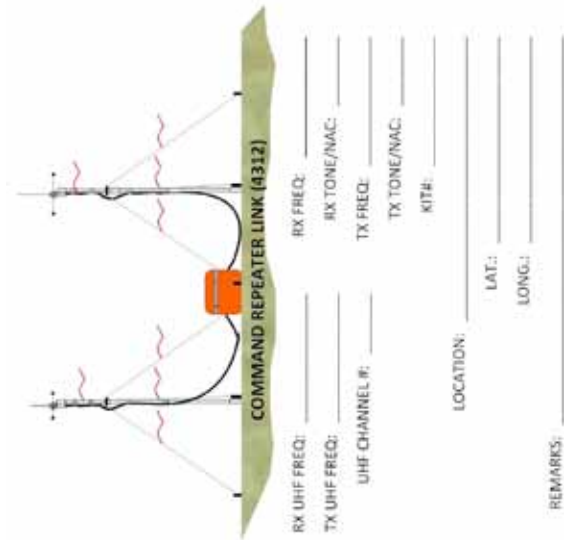
RX FREQ: _____
RX TONE/NAC: _____
TX FREQ: _____
TX TONE/NAC: _____
GROUP #: _____
CHANNEL #: _____

DRAWING 4

INCIDENT:

THREE VHF COMMAND REPEATERS LINKED VIA UHF SIMPLEX

SUGGESTED EQUIPMENT:
 3 EA 4312 COMMAND REPEATER KIT
 1 EA 4330 REMOTE KIT
 1 EA 4381 CMD/TAC RADIO KIT



RX FREQ: _____
 RX TONE/NAC: _____
 TX FREQ: _____
 TX TONE/NAC: _____
 GROUP #: _____
 CHANNEL #: _____

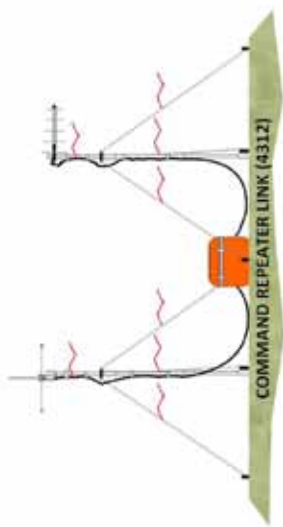
INCIDENT OPERATIONS AREA 1

INCIDENT:

DRAWING 5

TWO VHF COMMAND REPEATERS LINKED THROUGH UHF LOGISTICS REPEATER

SUGGESTED EQUIPMENT:
 2 EA 4312 COMMAND REPEATER KIT
 1 EA 4248 LOGISTICS REPEATER KIT
 1 EA 4330 REMOTE KIT
 1 EA 4381 CMD/TAC RADIO KIT

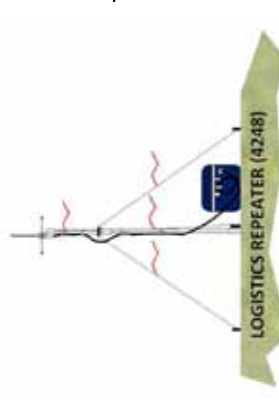


COMMAND REPEATER LINK (4312)

RX FREQ: _____ RX UHF FREQ: _____
 RX TONE/NAC: _____ TX UHF FREQ: _____
 TX FREQ: _____ UHF CHANNEL #: _____
 TX TONE/NAC: _____ KIT#: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

REMARKS: _____

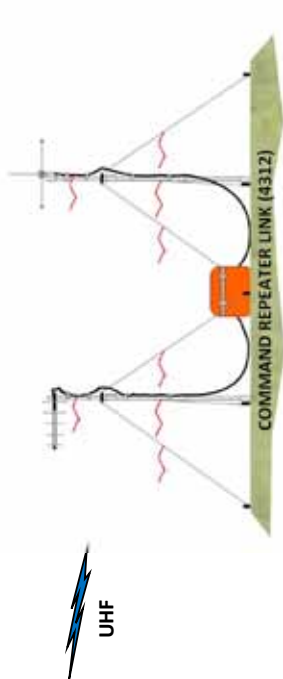


LOGISTICS REPEATER (4248)

RX FREQ: _____ RX TONE/NAC: _____
 TX FREQ: _____ TX TONE/NAC: _____
 KIT#: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

REMARKS: _____



COMMAND REPEATER LINK (4312)

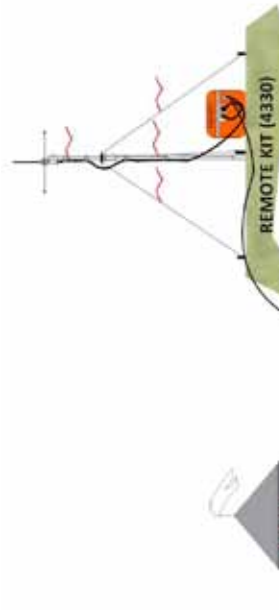
RX UHF FREQ: _____ RX FREQ: _____
 TX UHF FREQ: _____ RX TONE/NAC: _____
 UHF CHANNEL #: _____ TX FREQ: _____
 TX TONE/NAC: _____ KIT#: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

REMARKS: _____



VHF



REMOTE KIT (4330)

RX FREQ: _____ RX TONE/NAC: _____
 TX FREQ: _____ TX TONE/NAC: _____
 GROUP #: _____ CHANNEL #: _____
 KIT #: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

REMARKS: _____

RX FREQ: _____
 RX TONE/NAC: _____
 TX FREQ: _____
 TX TONE/NAC: _____
 GROUP #: _____
 CHANNEL #: _____



RX FREQ: _____
 RX TONE/NAC: _____
 TX FREQ: _____
 TX TONE/NAC: _____
 GROUP #: _____
 CHANNEL #: _____



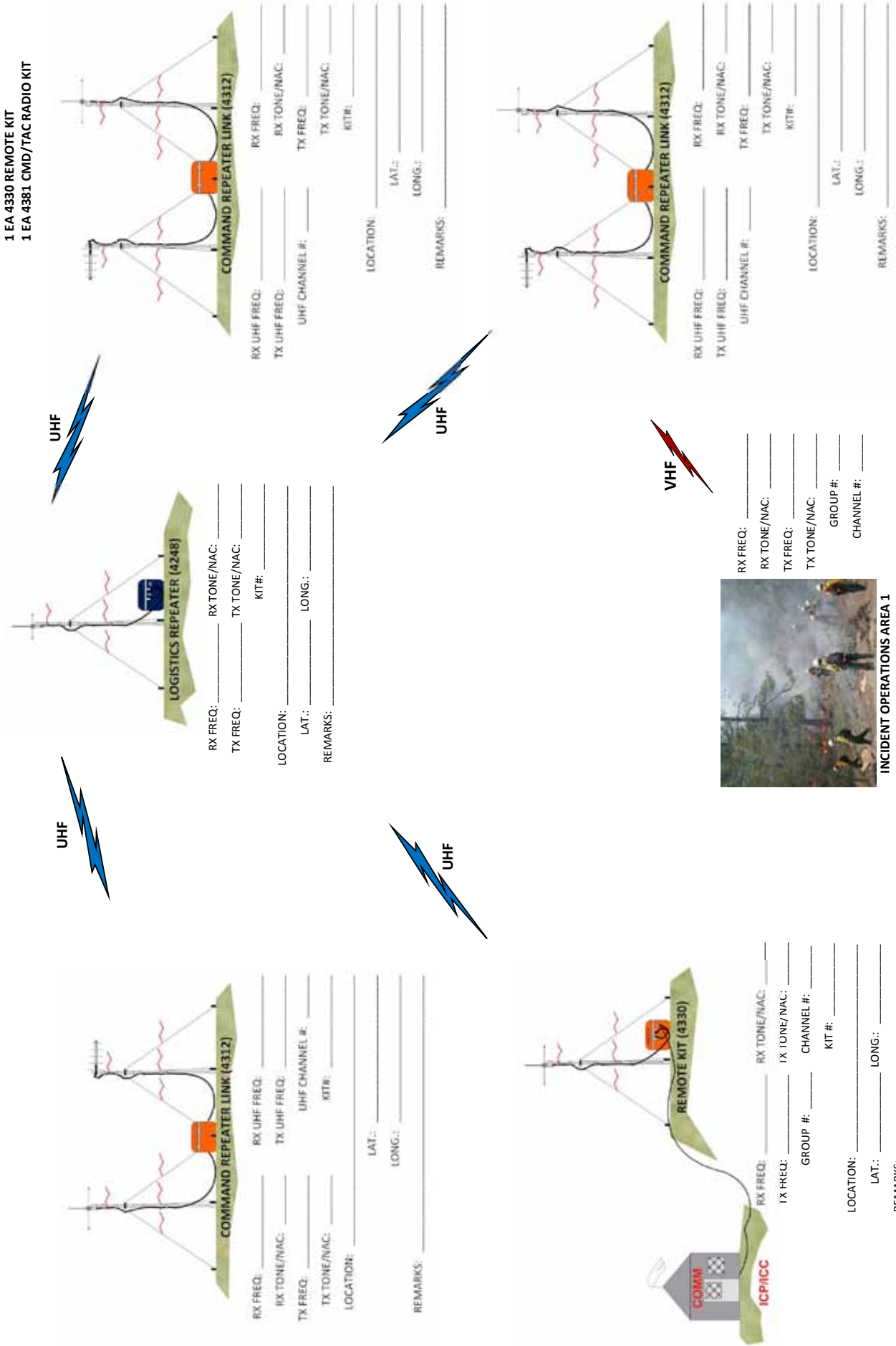
VHF

DRAWING 6

INCIDENT:

THREE VHF COMMAND REPEATERS LINKED THROUGH UHF LOGISTICS REPEATER

SUGGESTED EQUIPMENT:
 3 EA 4312 COMMAND REPEATER KIT
 1 EA 4248 LOGISTICS REPEATER KIT
 1 EA 4330 REMOTE KIT
 1 EA 4381 CMD/TAC RADIO KIT



INCIDENT OPERATIONS AREA 1

DRAWING 7

INCIDENT:

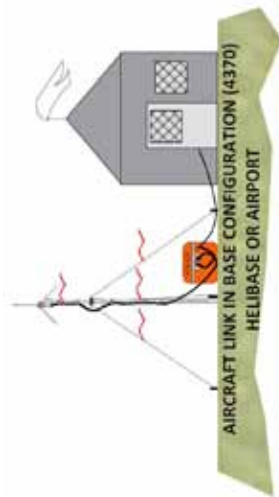
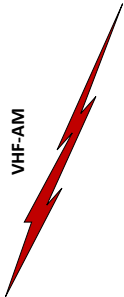
AIRCRAFT LINK SYSTEM (BASE CONFIGURATION) GROUND TO AIRCRAFT COMMUNICATIONS

SUGGESTED EQUIPMENT:
1 EA 4370 GROUND AIRCRAFT LINK KIT
(INCLUDES 4 EA ICOM AM HANDHELD RADIOS)



RX AM FREQ: _____
TX AM FREQ: _____

VHF-AM



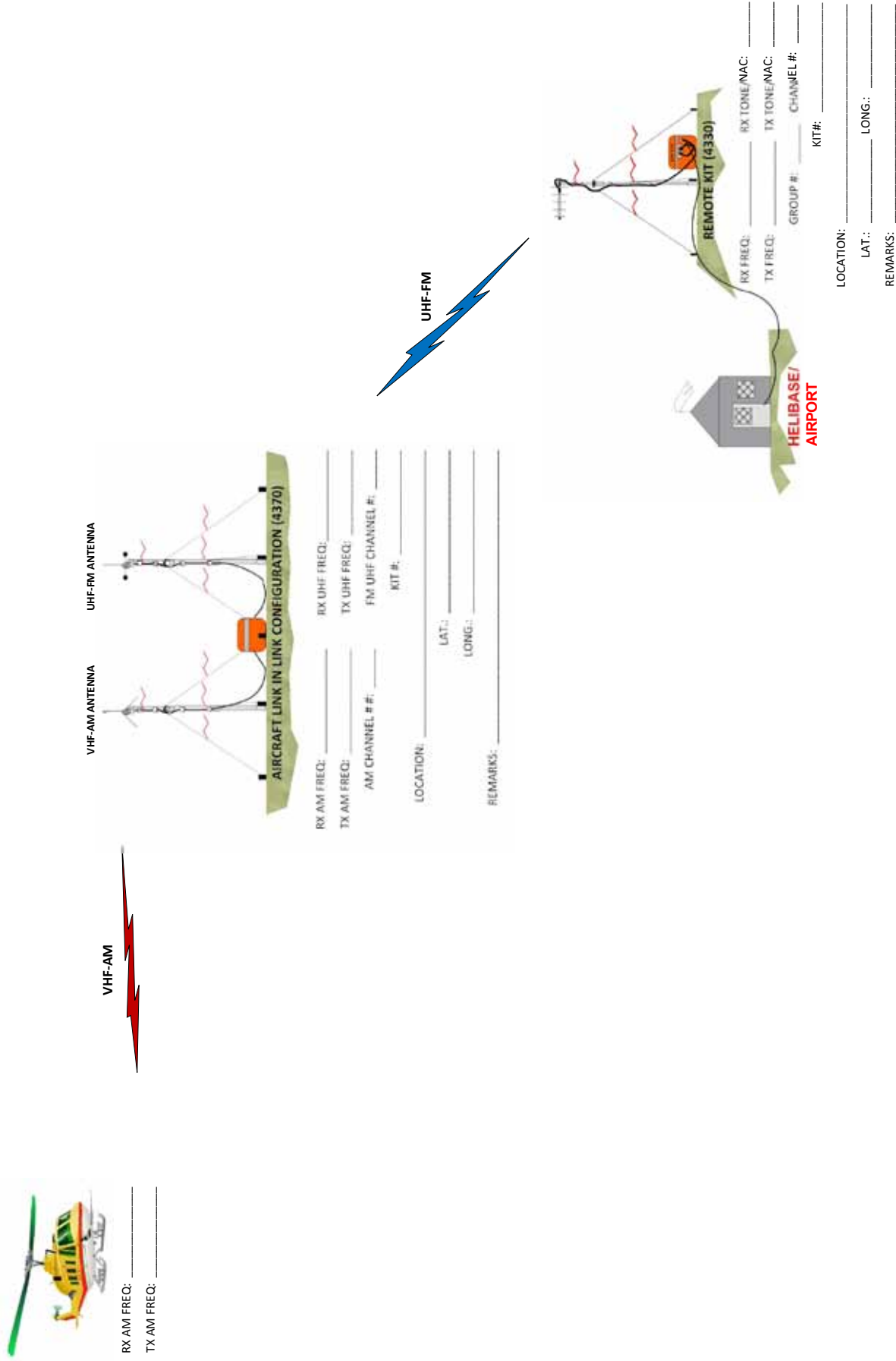
RX FREQ: _____
TX FREQ: _____
CHANNEL #: _____
KIT #: _____
LOCATION: _____
LAT.: _____ LONG.: _____
REMARKS: _____

INCIDENT:

DRAWING 8

AIRCRAFT LINK SYSTEM (LINK CONFIGURATION) WITH REMOTE AT HELIBASE

SUGGESTED EQUIPMENT:
 1 EA 4370 GROUND AIRCRAFT LINK KIT
 (INCLUDES 4 EA ICOM AM HANDHELD RADIOS
 1 EA 4330 REMOTE KIT

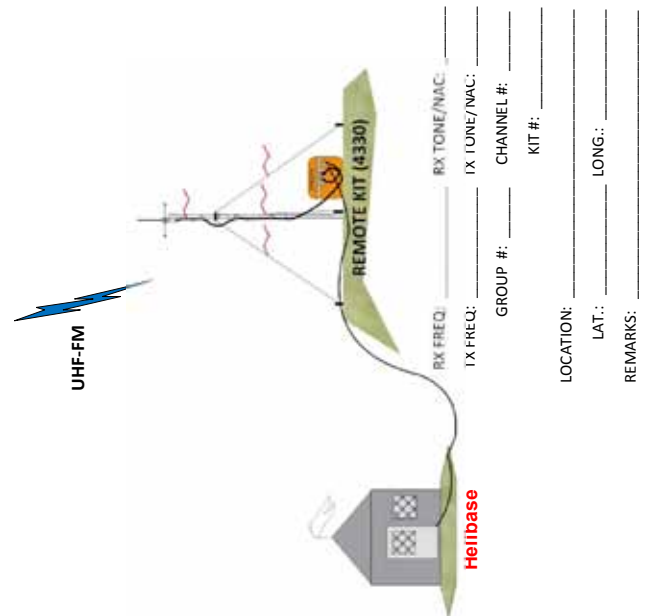
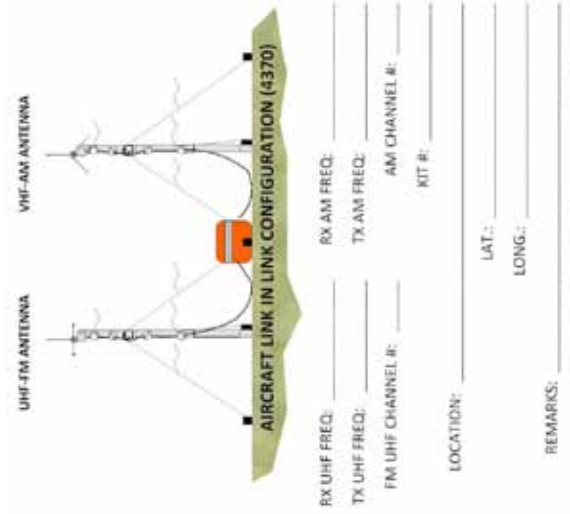
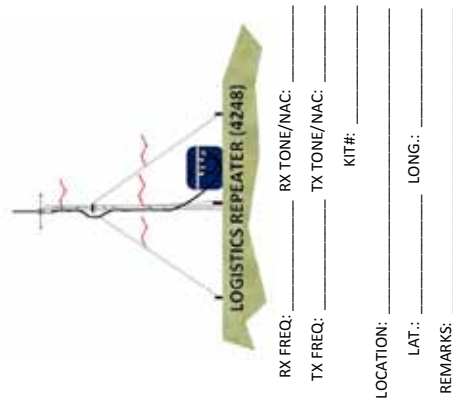
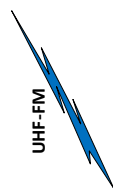
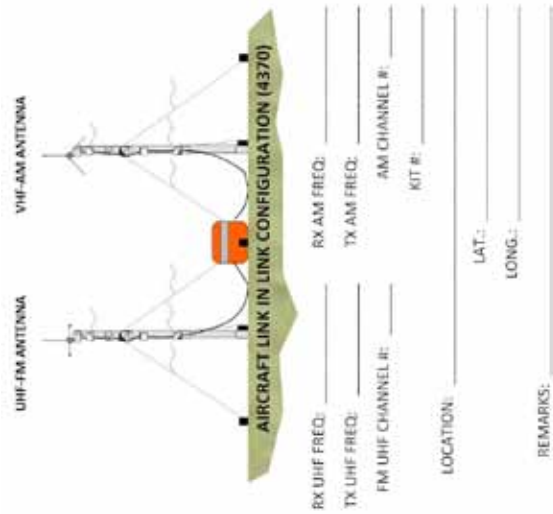


DRAWING 9

INCIDENT:

TWO AIRCRAFT LINKED SYSTEMS (LINK CONFIGURATION) THROUGH UHF LOGISTICS REPEATER

SUGGESTED EQUIPMENT:
2 EA 4370 GROUND AIRCRAFT LINK KIT
1 EA 4248 LOGISTICS RADIO KIT
1 EA 4330 REMOTE KIT

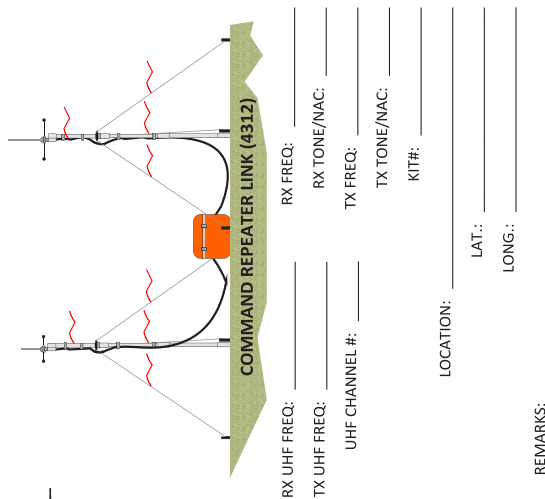
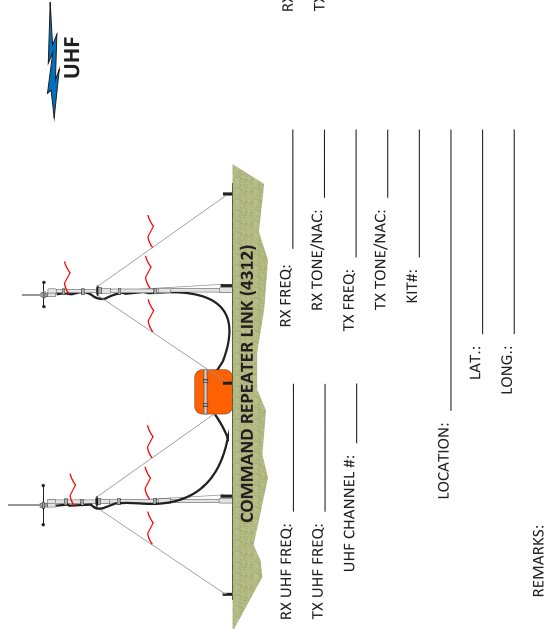
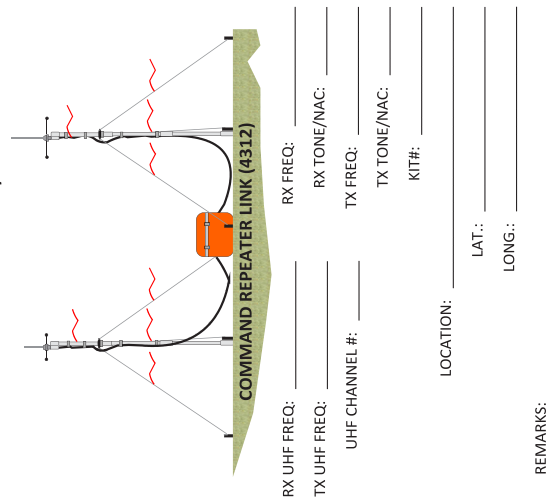
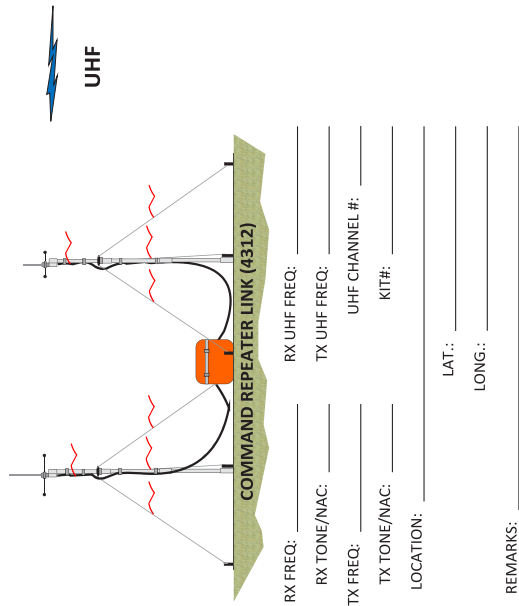
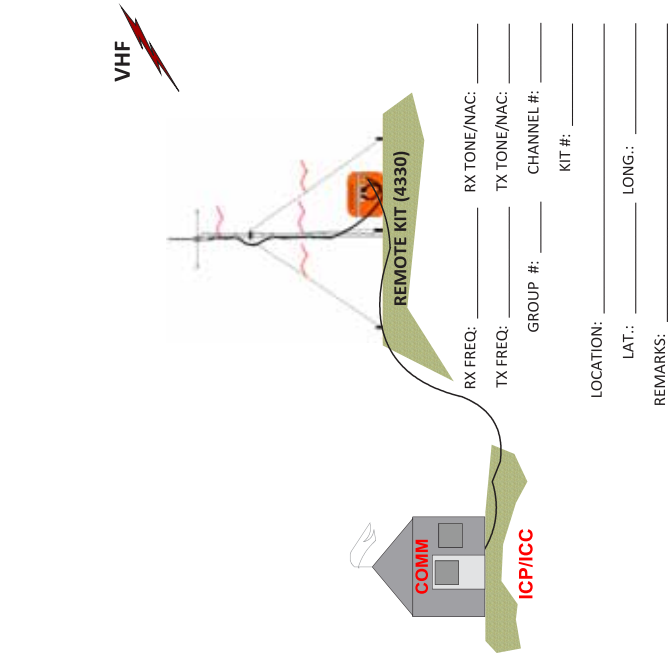


DRAWING 10

INCIDENT:

FOUR VHF COMMAND REPEATERS LINKED VIA UHF SIMPLEX

SUGGESTED EQUIPMENT:
 4 EA 4312 COMMAND REPEATER KITS
 1 EA 4330 REMOTE KIT
 1 EA 4381 CMD/TAC RADIO KIT

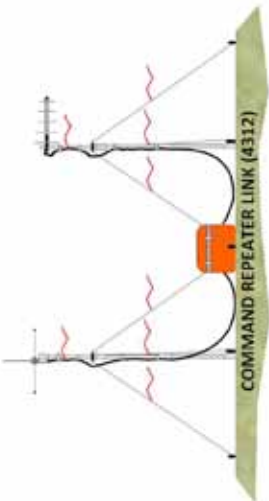


DRAWING 11

INCIDENT:

FOUR VHF COMMAND REPEATERS LINKED THROUGH UHF LOGISTICS REPEATER

SUGGESTED EQUIPMENT:
 4 EA 4312 COMMAND REPEATER KITS
 1 EA 4248 LOGISTICS REPEATER KIT
 1 EA 4330 REMOTE KIT

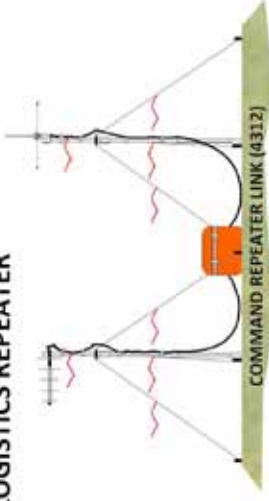


COMMAND REPEATER LINK (4312)

RX FREQ: _____ RX TONE/NAC: _____
 TX FREQ: _____ TX TONE/NAC: _____
 UHF CHANNEL #: _____ KIT#: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

REMARKS: _____

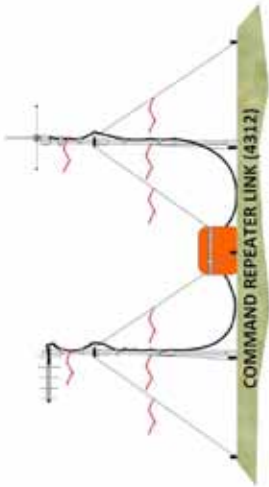


COMMAND REPEATER LINK (4312)

RX FREQ: _____ RX TONE/NAC: _____
 TX FREQ: _____ TX TONE/NAC: _____
 UHF CHANNEL #: _____ KIT#: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

REMARKS: _____

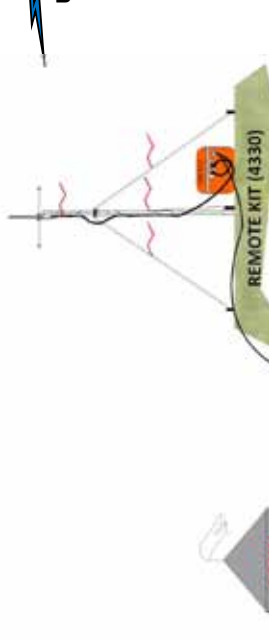


COMMAND REPEATER LINK (4312)

RX UHF FREQ: _____ RX FREQ: _____
 TX UHF FREQ: _____ TX TONE/NAC: _____
 UHF CHANNEL #: _____ TX FREQ: _____
 TX TONE/NAC: _____ KIT#: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

REMARKS: _____



REMOTE KIT (4330)

RX FREQ: _____ RX TONE/NAC: _____
 TX FREQ: _____ TX TONE/NAC: _____
 GROUP #: _____ CHANNEL #: _____
 KIT #: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

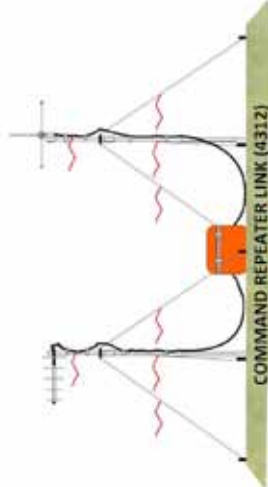
REMARKS: _____



LOGISTICS REPEATER (4248)

RX FREQ: _____ RX TONE/NAC: _____
 TX FREQ: _____ TX TONE/NAC: _____
 LOCATION: _____ KIT#: _____
 LAT.: _____ LONG.: _____

REMARKS: _____



COMMAND REPEATER LINK (4312)

RX UHF FREQ: _____ RX FREQ: _____
 TX UHF FREQ: _____ RX TONE/NAC: _____
 UHF CHANNEL #: _____ TX FREQ: _____
 TX TONE/NAC: _____ KIT#: _____

LOCATION: _____ LAT.: _____
 LONG.: _____

REMARKS: _____



DRAWING 12

INCIDENT:

BRANCHED SYSTEM WITH TWO VHF REPEATERS THROUGH LOGISTICS REPEATER

SUGGESTED EQUIPMENT:
 4 EA 4312 COMMAND REPEATER KITS
 2 EA 4248 LOGISTICS REPEATER KITS
 2 EA 4330 REMOTE KITS

BRANCH 1 SYSTEM

COMMAND REPEATER LINK (4312)

RX FREQ: _____ RX TONE/NAC: _____
 TX FREQ: _____ TX TONE/NAC: _____
 UHF CHANNEL #: _____ KIT#: _____

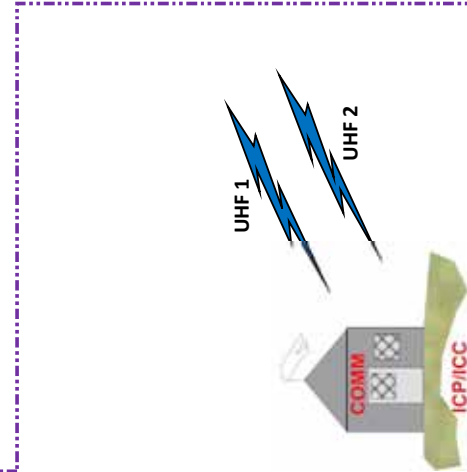
LOCATION: _____ LAT.: _____ LONG.: _____

REMARKS: _____

UHF 1

UHF 1

UHF 2



UHF 1

UHF 2

BRANCH 1(4248)

RX FREQ: _____ RX TONE/NAC: _____
 TX FREQ: _____ TX TONE/NAC: _____
 KIT#: _____

LOCATION: _____ LAT.: _____ LONG.: _____

REMARKS: _____

UHF 2

UHF 2

UHF 2

UHF 2

UHF 2

UHF 2

UHF 2

BRANCH 2 SYSTEM

COMMAND REPEATER LINK (4312)

RX UHF FREQ: _____ RX TONE/NAC: _____
 TX UHF FREQ: _____ TX TONE/NAC: _____
 UHF CHANNEL #: _____ KIT#: _____

LOCATION: _____ LAT.: _____ LONG.: _____

REMARKS: _____

COMMAND REPEATER LINK (4312)

RX UHF FREQ: _____ RX TONE/NAC: _____
 TX UHF FREQ: _____ TX TONE/NAC: _____
 UHF CHANNEL #: _____ KIT#: _____

LOCATION: _____ LAT.: _____ LONG.: _____

REMARKS: _____

DRAWING 13

INCIDENT:

NOTES

2014 NIRSC Users Guide
April 2014