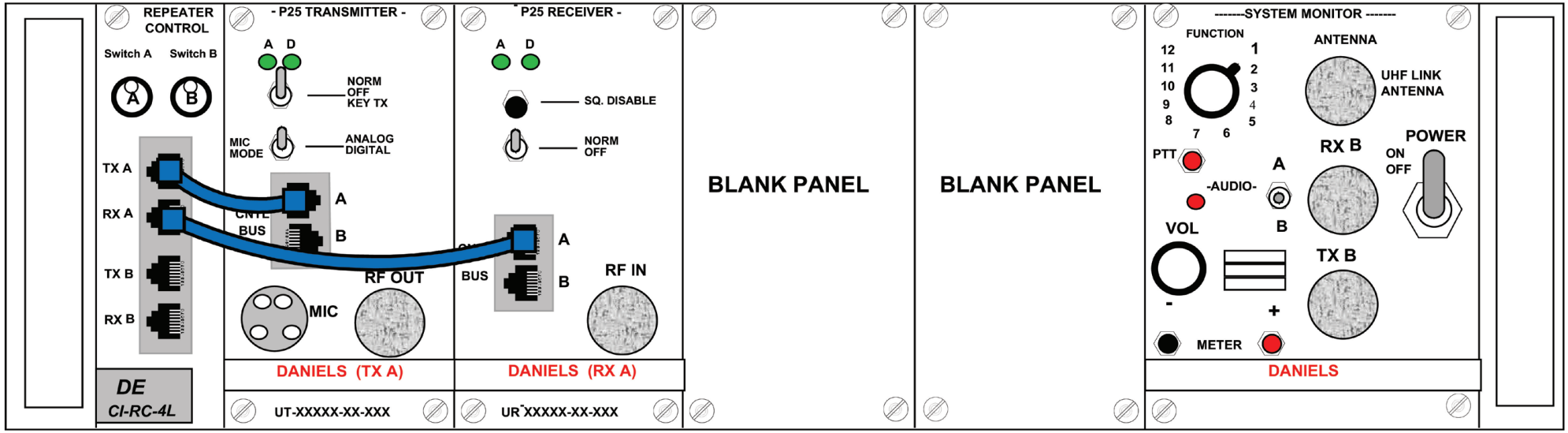
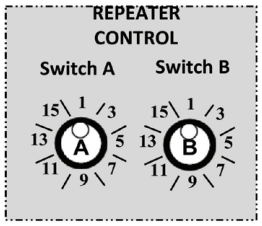
4248 - UHF REPEATER SWITCH SETTINGS



4248 - UHF REPEATER CONFIGURATION:

- Set up **UHF Omni-Directional** antenna and attach one end of the coaxial cable to the base of the UHF antenna mount. *(See Antenna Instructions in User's Guide for detailed setup information)*
- Attach the other end of **UHF** coaxial cable to the appropriate connector on the bulkhead mount located on the back of the fiberglass box.
- Connect the power cable to the batteries using the provided **POLARIZED** fused cable.
- Turn the **POWER** switch to the "**ON**" position on the "**System Monitor Module**".
- Keep the power switches on both the "**TX A and RX A**" modules in the "**NORM**" position.
- Keep the "**MIC Mode**" on the "**TX A**" in the "**ANALOG**" position.
- Keep the **speaker audio OFF** by switching the **A/B Speaker switch** on the **System Monitor** to the "**Center**" position
- Test with two UHF handhelds to verify the repeater is operating correctly. *(NIRSC recommends testing with the field units or ICP if possible before leaving the site.)*

Note: No tones are available on the NIRSC UHF Repeaters unless specified by the field and programmed by NIRSC before shipment.

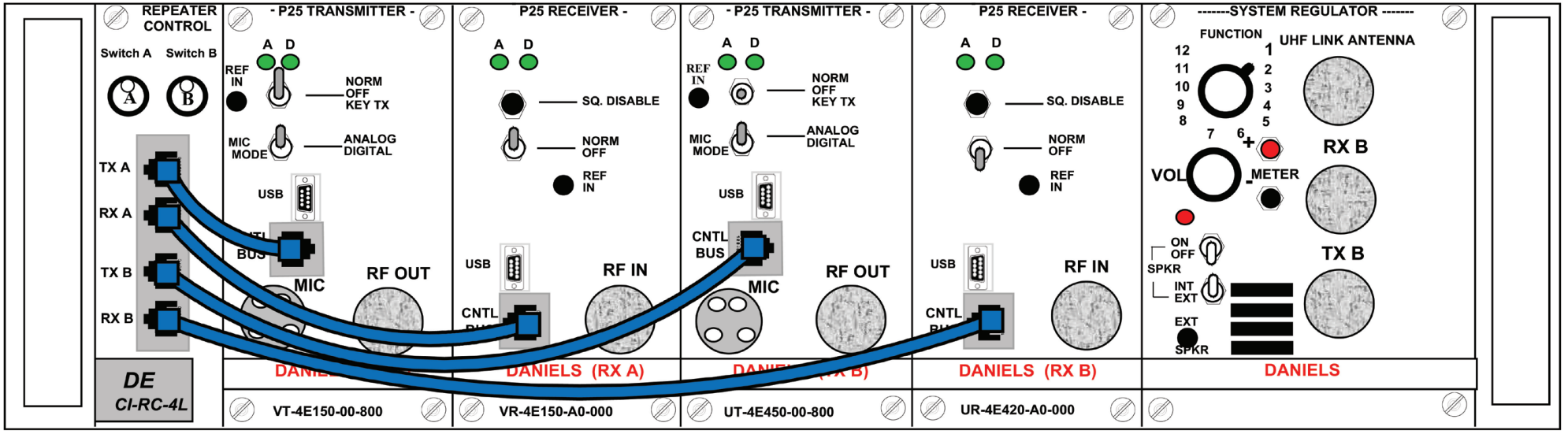


Close-Up View
Switch A, Switch B
Repeater Control Module

Enabling Internal Speaker for Troubleshooting
• **Enable the speaker Audio A** by switching the Speaker **A/B switch** located on the **System Monitor**, to the "**A**" position.

System Monitor Switch Functions (4248 -UHF Repeater Configuration)	
2	+13.8 V (Supply Voltage)
3	+9.5 V Regulated
1, 4-12	NIRSC Technician Testing
Revised 2017	

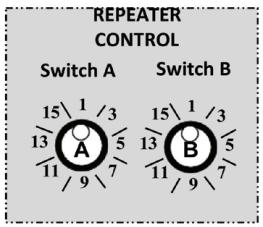
4312 - VHF REPEATER SWITCH SETTINGS (E - MODELS ONLY)



4312 - VHF REPEATER CONFIGURATION: *(E-Models Only)*

- Set up the **VHF Directional antenna** and attach the coaxial cable to the appropriate VHF antenna base mount. *(See Antenna Instructions in User's Guide for detailed setup information)*
- Attach the other end of the VHF coaxial cable to the appropriate connector on the bulkhead mount located on the back of the fiberglass box.
- Connect the power cable to the batteries using the provided **POLARIZED** fused cable. Once power cable is connected, all modules are active. *(No master power switch)*
- Keep the power switches on both the "**TX A**" and "**RX A**" in the "**NORM**" position.
- Keep the power switches on both the "**TX B and RX B**" modules in the "**OFF**" position. *(Stand-alone Repeater Configuration - No Linking)*
- Keep the "**MIC Mode**" on the "**TX A**" in the "**ANALOG**" position.
- Keep the **speaker audio off** by switching the **Speaker switch** on the **System Regulator** to the "**OFF**" position
- Select the **assigned tone** by turning **Switch A knob**, located on the top portion of the **Repeater Control Module**, to assigned tone. *(See Switch A - Tone Selection Table)* *(This is a 16 Position Knob, Position 1 is straight up)*
- Test with two VHF handhelds to verify the repeater is operating correctly. *(NIRSC recommends testing with the field units or ICP if possible before leaving the site.)*

Note: Selecting a tone will enable the tone on both the TX A and RX A Modules.
The Communications Duty Officer (CDO) will assign the appropriate tone for each incident.

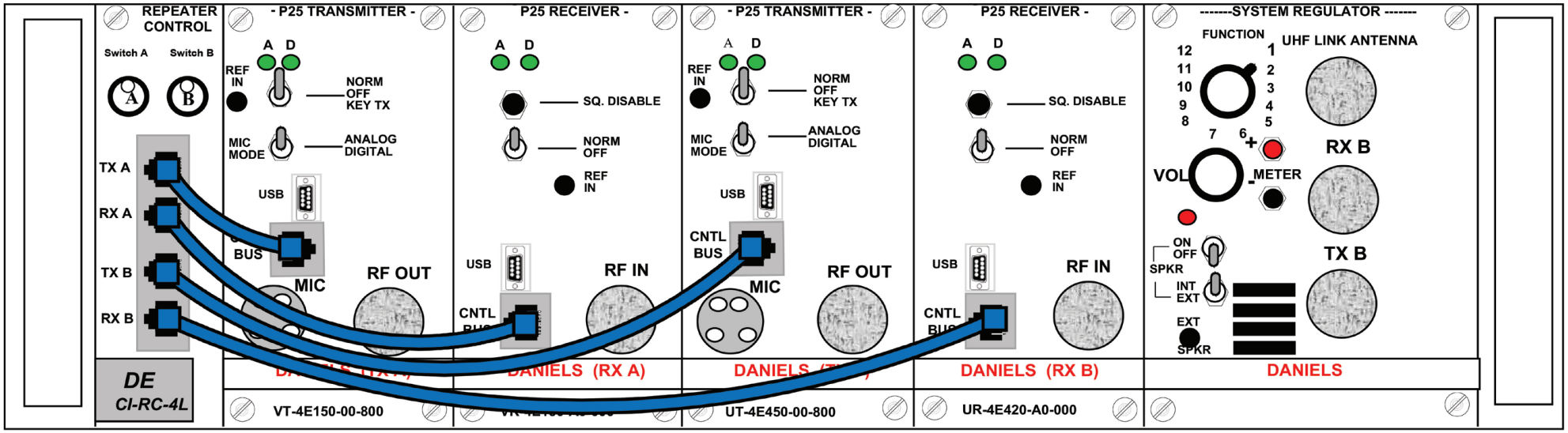


Close-Up View
Switch A, Switch B
Repeater Control Module

Switch A - Tone Selection Table
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

System Regulator Switch Functions (4312 -VHF Repeater/Link Configuration) E-Models Only	
1	+13.8 V (Supply Voltage)
2	+9.5 V Regulated
3	RX A Audio
5	RX B Audio
4, 6-12	NIRSC Technician Testing
Revised 2017	

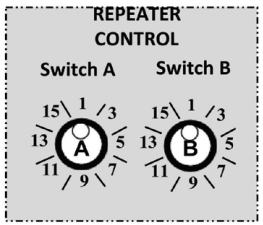
4312 - VHF REPEATER/LINK SWITCH SETTINGS (E - MODELS ONLY)



4312 - VHF REPEATER/LINK CONFIGURATION: *(E-Models Only)*

- Set up the **VHF antenna** and attach the coax to the appropriate VHF base and connector on the bulkhead mount located on the back of the fiberglass box. *(See Antenna Instructions in User's Guide)*
- Set up the **UHF antenna** and attach the coax to the appropriate UHF base and connector on the bulkhead mount located on the back of the fiberglass box.
- Connect the power cable to the batteries using the provided **POLARIZED** fused cable. Once power cable is connected, all modules are active. *(No master power switch)*
- Keep the power switches on both the "**TX A**" **and** "**RX A**" in the "**NORM**" position.
- Keep the power switches on both the "**TX B and RX B**" modules in the "**OFF**" position. *(Stand-alone Repeater Configuration - No Linking)*
- Keep the "**MIC Mode**" on the "**TX A**" in the "**ANALOG**" position.
- Keep the **speaker audio off** by switching the **Speaker switch** on the **System Regulator** to the "**OFF**" position
- Select the **assigned tone** by turning **Switch A knob**, located on the top portion of the **Repeater Control Module**, to assigned tone. *(See Switch A - Tone Selection Table)*
  (This is a 16 Position Knob, Position 1 is straight up)
- Select the **assigned UHF Frequency** by turning the **Switch B knob** to **assigned UHF Frequency**. *(See Switch B - UHF Link Frequency Selection Table)*
  (This is a 16 Position Knob, Position 1 is straight up)
  (See Antenna Instructions in User's Guide)

Note: Selecting a tone will enable the tone on both the TX A and RX A Modules. The Communications Duty Officer (CDO) will assign the appropriate tone and UHF Frequency for each incident.



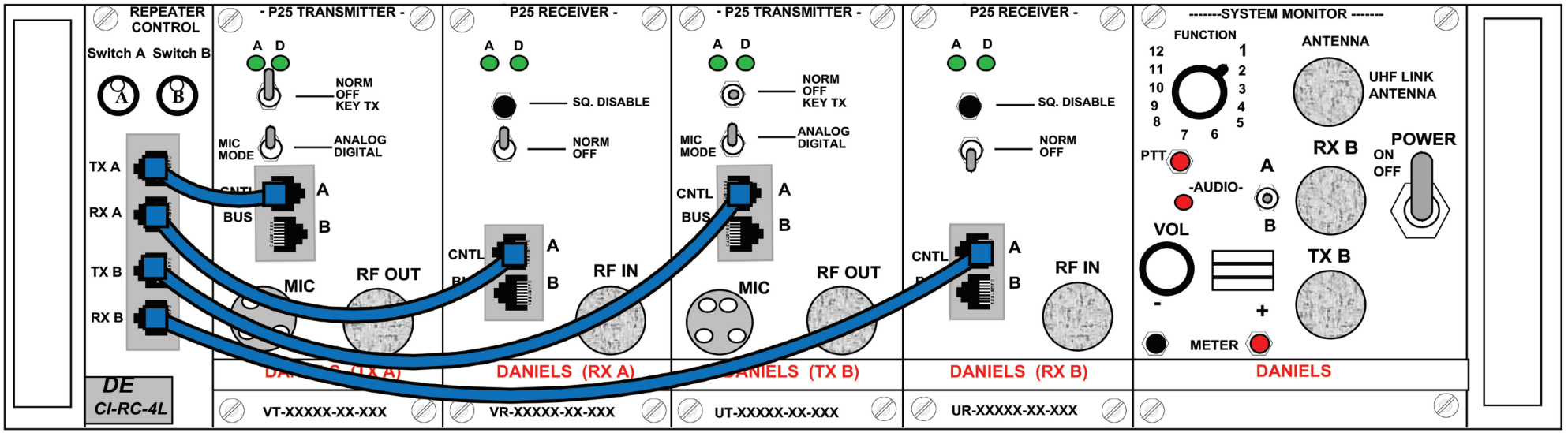
Close-Up View
Switch A, Switch B
Repeater Control Module

Switch A - Tone Selection Table
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

Switch B - UHF Link Frequency
Position 1 - L1 RPTR Access
Position 2 - L2 RPTR Access
Position 3 - L3 RPTR Access
Position 4 - L4 RPTR Access
Position 5 - L5 RPTR Access
Position 6 - L6 RPTR Access
Position 7 - L7 RPTR Access
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 1 - Simplex
Position 16 - Special 2 - Simplex

System Regulator Switch Functions (4312 -VHF Repeater/Link Configuration) E-Models Only	
1	+13.8 V (Supply Voltage)
2	+9.5 V Regulated
3	RX A Audio
5	RX B Audio
4, 6-12	NIRSC Technician Testing
Revised 2017	

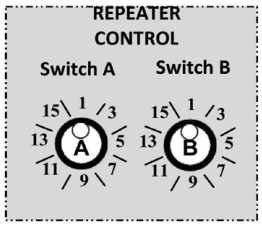
4312 - VHF REPEATER SWITCH SETTINGS



4312 - VHF REPEATER CONFIGURATION:

- Set up the **VHF Omni-Directional** antenna and attach one end of the coaxial cable to the base of the VHF antenna base mount. *(See Antenna Instructions in User's Guide)*
- Attach the other end of the **VHF** coaxial cable to the appropriate connector on the bulkhead mount located on the back of the fiberglass box.
- Connect the power cable to the batteries using the provided **POLARIZED** fused cable.
- Turn the **Power Switch** to the "**ON**" position on the **System Monitor Module**.
- Keep the power switches on both the "**TX A**" **and** "**RX A**" in the "**NORM**" position.
- Keep the power switches on both the "**TX B and RX B**" modules in the "**OFF**" position. *(Stand-alone Repeater Configuration - No Linking)*
- Keep the "**MIC Mode**" on the "**TX A**" in the "**ANALOG**" position.
- Keep the **speaker audio OFF** by switching the **A/B Speaker switch** on the **System Monitor** to the "**Center**" position
- Select the **assigned tone** by turning **Switch A knob**, located on the top portion of the **Repeater Control Module**, to assigned tone. *(See Switch A - Tone Selection Table)*
  (This is a 16 Position Knob, Position 1 is straight up)
- Test with two VHF handhelds to verify the repeater is operating correctly. *(NIRSC recommends testing with the field units of ICP if possible before leaving the site.*

Note: Selecting a tone will enable the tone on both the TX A and RX A Modules.
The Communications Duty Officer (CDO) will assign the appropriate tone for each incident.



Close-Up View
Switch A, Switch B
Repeater Control Module

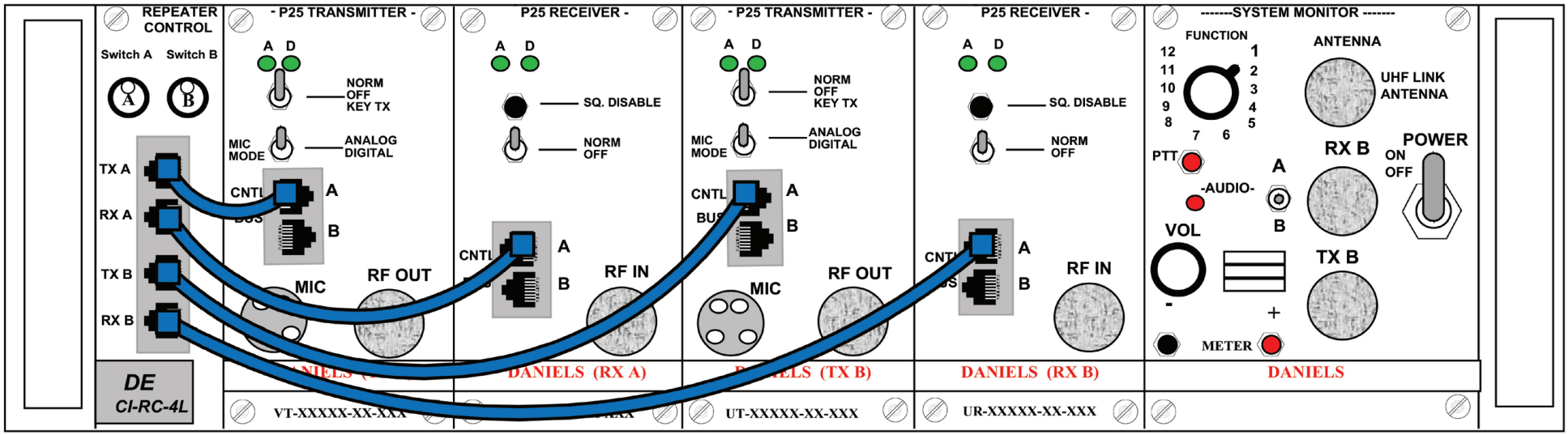
Switch A - Tone Selection Table
Position 1 - Tone 1 (110.9)
Position 2 - Tone 2 (123.0)
Position 3 - Tone 3 (131.8)
Position 4 - Tone 4 (136.5)
Position 5 - Tone 5 (146.2)
Position 6 - Tone 6 (156.7)
Position 7 - Tone 7 (167.9)
Position 8 - Tone 8 (103.5)
Position 9 - Tone 9 (100.0)
Position 10 - Tone 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

Enabling Internal Speaker for Troubleshooting

- **Enable the speaker Audio A** by switching the Speaker **A/B switch** located on the **System Monitor**, to the "**A**" position.
- **Enable the speaker Audio B** by switching the Speaker **A/B switch** located on the System Monitor, to the "**B**" position.

System Monitor Switch Functions (4312 -VHF Repeater Configuration)	
2	+13.8 V (Supply Voltage)
3	+9.5 V Regulated
1, 4-12	NIRSC Technician Testing
Revised 2017	

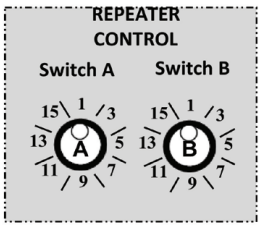
4312 - VHF REPEATER/LINK SWITCH SETTINGS



4312 - VHF REPEATER/LINK CONFIGURATION:

- Set up the **VHF Omni-Directional** antenna and attach the coaxial cable to the appropriate antenna base and bulkhead connector located on the back of the fiberglass box
- Set up the **UHF antenna** and attach the coaxial cable to the appropriate antenna base and bulkhead connector located on the back of the fiberglass box. *(See Antenna Instructions in User's Guide)*
- Connect the power cable to the batteries using the provided **POLARIZED** fused cable.
- Turn the **Power Switch** to the "**ON**" position on the **System Monitor Module**.
- Keep the power switches on both the "**TX A**" and "**RX A**" in the "**NORM**" position.
- Keep the power switches on both the "**TX B and RX B**" modules in the "**OFF**" position. *(Stand-alone Repeater Configuration - No Linking)*
- Keep the "**MIC Mode**" on the "**TX A**" in the "**ANALOG**" position.
- Keep the **speaker audio OFF** by switching the **A/B Speaker switch** on the **System Monitor** to the "**Center**" position
- Select the **assigned tone** by turning **Switch A knob**, located on the top portion of the **Repeater Control Module**, to assigned tone. *(See Switch A - Tone Selection Table)*
  Selecting a tone will enable the tone on both the TX A and RX A Modules. (This is a 16 Position Knob, Position 1 is straight up)
- Select the **assigned UHF Frequency** by turning the **Switch B knob** to **assigned UHF Frequency**. *(See Switch B - UHF Link Frequency Selection Table)*

Note: Selecting a tone will enable the tone on both the TX A and RX A Modules. The Communications Duty Officer (CDO) will assign the appropriate tone and UHF Frequency for each incident.



Close-Up View
Switch A, Switch B
Repeater Control Module

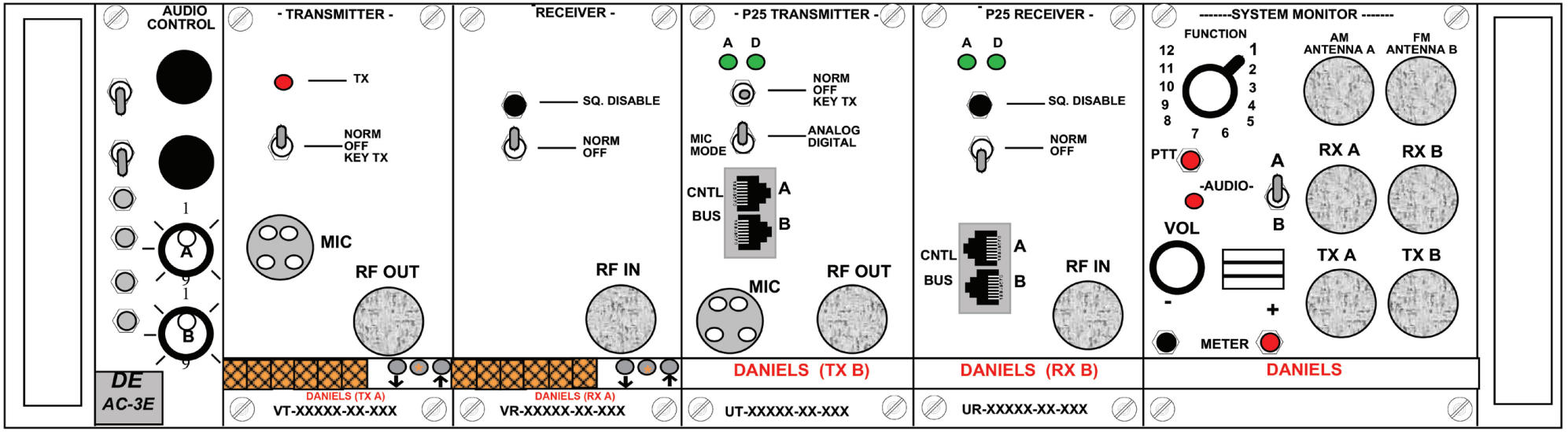
Switch A - Tone Selection Table
Position 1 - Tone 1 (110.9)
Position 2 - Tone 2 (123.0)
Position 3 - Tone 3 (131.8)
Position 4 - Tone 4 (136.5)
Position 5 - Tone 5 (146.2)
Position 6 - Tone 6 (156.7)
Position 7 - Tone 7 (167.9)
Position 8 - Tone 8 (103.5)
Position 9 - Tone 9 (100.0)
Position 10 - Tone 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

Switch B - UHF Link Frequency
Position 1 - L1 RPTR Access
Position 2 - L2 RPTR Access
Position 3 - L3 RPTR Access
Position 4 - L4 RPTR Access
Position 5 - L5 RPTR Access
Position 6 - L6 RPTR Access
Position 7 - L7 RPTR Access
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 1 - Simplex
Position 16 - Special 2 - Simplex

Enabling Internal Speaker for Troubleshooting
• **Enable the speaker Audio A** by switching the Speaker **A/B switch** located on the **System Monitor**, to the "**A**" position.
• **Enable the speaker Audio B** by switching the Speaker **A/B switch** located on the System Monitor, to the "**B**" position.

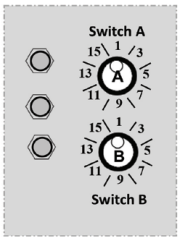
System Monitor Switch Functions (4312 -VHF Repeater/Link Configuration)	
2	+13.8 V (Supply Voltage)
3	+9.5 V Regulated
1, 4-12	NIRSC Technician Testing
Revised 2017	

4370 - AIRCRAFT RADIO SWITCH SETTINGS (BASE CONFIGURATION)



4370 - AIRCRAFT RADIO BASE CONFIGURATION:

- Set up the **VHF-AM antenna** and attach the coaxial cable to the appropriate AM antenna base mount. *(See Antenna Instructions in User's Guide)*
- Attach the other end of the **AM** coaxial cable to the appropriate connector on the bulkhead mount located on the back of the fiberglass box.
- Connect the power cable to the batteries using the provided **POLARIZED** fused cable. Once power is connected, all modules are active. *(No Master Power Switch)*
- Keep both "**CTCSS**" switches located on the **Audio Control Module** in the "**OFF**" (Down) position.
- Keep the **power switches** on both the "**TX A**" and "**RX A**" in the "**NORM**" position.
- Keep the **power switches** on both the "**TX B**" and "**RX B**" in the "**OFF**" position.
- Keep the **Audio Select Switch** on the **System Monitor Module** in the "**A**" position to activate the internal speaker.
- Place the **Function Switch** on the **System Monitory Module** to **Position #1** to direct audio to meter jacks.
- Connect the **external speaker** to the **Meter Jacks** on the **System Monitor Module**, observing the correct polarity.
- Select the **assigned AM frequency** for the "**TX A**" and "**RX A**" using the 16 position rotary **Switch A** on the **Audio Control Module**. *(Switch A - AM Frequency Selection)*
- Connect the provided **Microphone** to the "**MIC**" jack on the "**AM TX A Module**".
- Test through the Microphone and a field unit or AM handheld to verify proper operation.



Close-Up View
Switch A, Switch B
Audio Control Module

Manual AM Frequency Programming: (Channel 16 Only)

Note: Both the AM transmitter and AM receiver modules must be individually programmed.
The Communications Duty Officer (CDO) will assign the appropriate FAA-Issued AM Frequency.

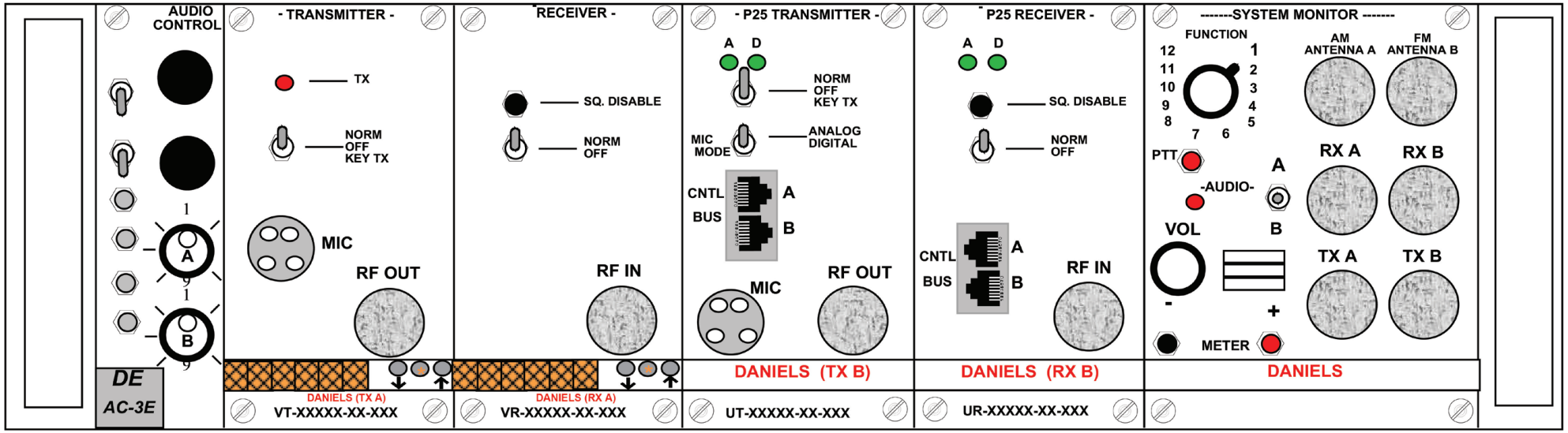
- Turn the rotary **Switch A** on the **Audio Control Module** to **Channel 16**.
- Unlock each unit by momentarily pressing the "*" button, then before the "**Locked**" display goes blank, press the "**Down**" button to unlock the unit.
- The display should now show "**Unlocked**".
- Wait for the display to go blank, momentarily press either "**UP**" or "**Down**" button to display current frequency.
- While the frequency is displayed, press and hold either the "**UP**" or "**Down**" until the assigned frequency is reached.
- Lock each unit by momentarily pressing the "*" button, then before the "**Unlocked**" display goes blank, press the "**UP**" button to lock the unit.
- The display should now show "**Locked**"
- The Aircraft Radio is now ready for base operation on that **AM programmed frequency**.

Switch A - AM Frequency List
Position 1 - Chanel 1
Position 2 - Channel 2
Position 3 - Channel 3
Position 4 - Channel 4
Position 5 - Channel 5
Position 6 - Channel 6
Position 7 - Channel 7
Position 8 - Channel 8
Position 9 - Channel 9
Position 10 - Channel 10
Position 11 - Channel 11
Position 12 - Channel 12
Position 13 - Channel 13
Position 14 - Channel 14
Position 15 - Channel 14
Position 16 - Programmable

Enabling Internal Speaker for Troubleshooting
• **Enable the speaker Audio A** by switching the Speaker A/B switch located on the **System Monitor**, to the "**A**" position.
• **Enable the speaker Audio B** by switching the Speaker A/B switch located on the **System Monitor**, to the "**B**" position.

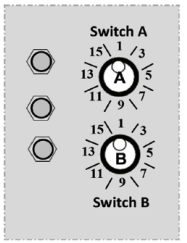
System Monitor Switch Functions (4370-Aircraft Radio Base Configuration)	
1	External Speaker
2	+13.8 V (Supply Voltage)
3	+9.5 V Regulated
4-12	NIRSC Technician Testing
Revised 2017	

4370 - AIRCRAFT RADIO SWITCH SETTINGS (LINK CONFIGURATION)



4370 - AIRCRAFT RADIO LINK CONFIGURATION:

- Set up the **VHF-AM antenna** and attach the coax to the appropriate antenna base and bulkhead connector located on the back of the fiberglass box.
- Set up the **UHF antenna** and attach the coax to the appropriate antenna base and bulkhead connector located on the back of the fiberglass box.
- Connect the power cable to the batteries using the provided **POLARIZED** fused cable. Once power is connected, all modules are active. *(No Master Power Switch)*
- Keep both "**CTCSS**" switches located on the **Audio Control Module** in the "**OFF**" (Down) position.
- Keep the **power switches** on both the "**TX A**", "**RX A**", "**TX B**" and "**RX B**" in the "**NORM**" position.
- Keep the **Audio Select Switch** on the **System Monitor Module** in the "**center**" position to **deactivate internal speaker**.
- Select the **assigned AM frequency** for the "**TX A**" and "**RX A**" using the 16 position rotary **Switch A** on the **Audio Control Module**. *(Switch A - AM Frequency Selection)*
  *Note: If the AM frequency is not listed, the user must program the AM frequency in Channel A-16 of both the "**TX A**" and "**RX A**". (See Manual AM Frequency Programming)*
- Select the **assigned UHF frequency** for the "**TX B**" and "**RX B**" using the 16 position rotary **Switch B** on the **Audio Control Module**. *(Switch B- UHF Frequency Selection)*
- Test with an AM and UHF radio to verify the A/C link is operating correctly. *(NIRSC recommends testing with the field units or helibase before leaving the sire.)*



Close-Up View
Switch A, Switch B
Audio Control Module

Note: Both the AM Frequency and UHF Frequency is assigned by the Communications Duty Officer (CDO).

Manual AM Frequency Programming: (Channel 16 Only)

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

- Turn the rotary **Switch A** on the **Audio Control Module** to **Channel 16**.
- Unlock each unit by momentarily pressing the "*" button, then before the "**Locked**" display goes blank, press the "**Down**" button to unlock the unit.
- The display should now show "**Unlocked**".
- Wait for the display to go blank, momentarily press either "**UP**" or "**Down**" button to display current frequency.
- While the frequency is displayed, press and hold either the "**UP**" or "**Down**" until the assigned frequency is reached.
- Lock each unit by momentarily pressing the "*" button, then before the "**Unlocked**" display goes blank, press the "**UP**" button to lock the unit.
- The display should now show "**Locked**"
- The Aircraft Radio is now ready for base operation on that **AM programmed frequency**.

Switch A - AM Frequency List
Position A1 - Channel 1
Position A2 - Channel 2
Position A3 - Channel 3
Position A4 - Channel 4
Position A5 - Channel 5
Position A6 - Channel 6
Position A7 - Channel 7
Position A8 - Channel 8
Position A9 - Channel 9
Position A10 - Channel 10
Position A11 - Channel 11
Position A12 - Channel 12
Position A13 - Channel 13
Position A14 - Channel 14
Position A15 - Channel 15
Position A16 - Programmable

Switch B - UHF Frequency List
Position B1 - A/C 1 Simplex
Position B2 - A/C 2 Simplex
Position B3 - A/C 3 Simplex
Position B4 - A/C 4 Simplex
Position B5 - A/C 5 Simplex
Position B6 - A/C 6 Simplex
Position B7 - A/C 7 Simplex
Position B8 - A/C 8 Simplex
Position B9 - A/C 9 (L8 Simp)
Position B10 - A/C 10 (L8 RPTR)
Position B11 - A/C 11 (L9 Simp)
Position B12 - A/C 12 (L9 RPTR)
Position B13 - A/C 13 (L10 Simp)
Position B14 - A/C 14 (L10 RPTR)
Position B15 - A/C 15 (L11 Simp)
Position B16 - A/C 16 (L11 RPTR)

Enabling Internal Speaker for Troubleshooting

- **Enable the speaker Audio A** by switching the Speaker A/B switch located on the **System Monitor**, to the "**A**" position.
- **Enable the speaker Audio B** by switching the Speaker A/B switch located on the **System Monitor**, to the "**B**" position.

System Monitor Switch Functions (4370-Aircraft Radio Link Configuration)	
1	External Speaker
2	+13.8 V (Supply Voltage)
3	+9.5 V Regulated
4-12	NIRSC Technician Testing
Revised 2017	