Pairing Guide for the

G1 SCBA XR Edition, NFPA 2025 ONLY *

Motorola APX NEXT & N70 Series™

APX NEXT
APX NEXT XE
APX NEXT XN
APX N70
APX N70 XE

* This guide will be revised for G1 NFPA 2013 & 2018 SCBA when those models become supported.

⚠ WARNING

CAREFULLY READ AND FOLLOW ALL APPLICABLE MOTOROLA AND G1 SCBA MANUALS FOR THE PRODUCTS REFERRED TO HEREIN (INCLUDING ALL INSTRUCTIONS, WARNINGS AND CAUTIONS). WHERE THERE ARE CONFLICTS IN INFORMATION, THE MANUALS SUPERCEDE ALL INFORMATION AND STEPS LISTED IN THIS GUIDE. FAILURE TO FOLLOW THIS WARNING MAY RESULT IN SERIOUS INJURY OR DEATH.

Overview and Important Information

This **G1 SCBA Radio Pairing Guide** is offered in good faith to G1 SCBA owners as a **job aid** to assist them to successfully pair and connect their 3rd Party radio devices to their G1 SCBA.

It provides guidance as to:

- Radio configuration settings which are required for pairing, connecting, and operating your radio with a G1 SCBA.
- Common audio routing options available to you, to choose from, however options may vary depending on your radio model, accessories, radio feature licenses, etc.
- Suggestions based on testing results and from feedback from other customer experiences.

There are additional options, choices, features, and settings available for your radio that are not covered in this guide.

MSA customer support associates will make a best effort to answer or get answers to questions specific to paring and operation of the G1 SCBA where applicable.

Selection of specific options and configurations is the responsibility of the end user based on their specific radio products, operational procedures, and organizational needs.

This document is not a manual for programming or for using the radio. Please, refer to, and always defer to the manuals and support options provided by your radio vendor and manufacturer. Always work with your radio programming engineer to program and test your radios.

Motorola APX NEXT/N70 Configuration Suggested Settings

Motorola APX NEXT/N70 Radio Configuration

The purpose of this section is to provide required, optional, and suggested radio settings.

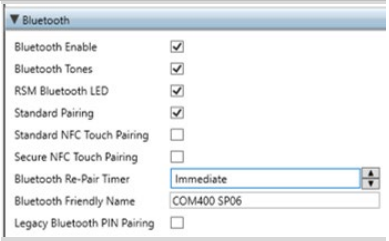
Step 1. Update Motorola CPS (Customer Programming Software) and **Radio Firmware to the minimum of version R04.00.00 for APX NEXT and R32.00.00 for APX N70** or to the versions advised by your radio vendor and manufacturer.

Step 2. Open Motorola Code Plug Software

Step 3. (A) Select "Radio Wide" in the Navigation Panel on the left
(B) Jump to the Bluetooth section.

Step 4. In the "Bluetooth" sub-section (expand it if the section is collapsed) and set:

- Bluetooth Enable: YES
- Bluetooth Tones: YES
- RSM Bluetooth LED: YES
- Standard Pairing: YES
- Bluetooth Re-Pair Timer: Immediate
- Bluetooth Friendly Name: (Ensure value is less than 16 characters)



Step 5 & Step 6 refer to a common setup. The buttons are highly customizable & differ between APX NEXT/N70 models. Consult to your rradio's manual, the CPS Help menu, radio engineer, vendor, or manufacturer, for alternative button options.

Step 5. (A) In the Navigation Panel, expand "Radio Ergonomics Configuration"
(B) Expand "Controls", and then select "Buttons"

Step 6. Under the "Conventional Feature" column, set:

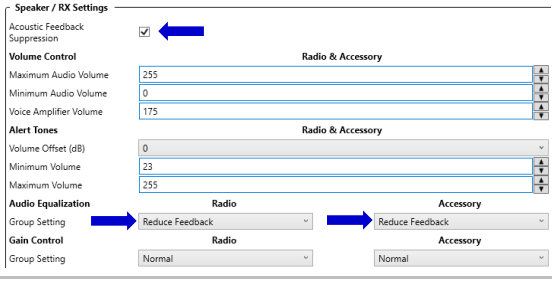
- Side Middle Button (1-dot) : Bluetooth On/Off
- Side Bottom Button (2-dot): Bluetooth Audio Reroute

Name	Conventional Feature
Top Button	Emergency
Side Top Button	Monitor
Side Middle Button	Bluetooth On/Off
Side Bottom Button	Bluetooth Audio Reroute
Speaker Grille Button	ViQi: Voice Control

BT Mic Protocols have inherently low gain compared to wired mics; Increasing it: +12db is a maximum, which can squelch. We recommend starting at +6dB, testing and adjusting. Optimization may vary per firefighter. **+6dB to +10dB has tested optimal**.

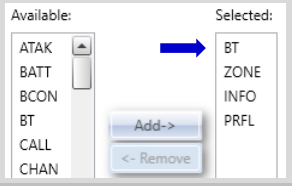
Step 7. Optimize BT Mic Gain:
(A) Under "Radio Ergonomics Configuration" & "Radio Profiles" select desired profile
(B) "Audio Settings" → "Microphone TX Settings" → "Audio Equalization"

Step 8. Reduce feedback for firefighters in close proximity:
(A) Under "Radio Ergonomics Configuration" and "Radio Profiles" select the desired profile
(B) "Audio Settings" → "Speaker / RX Settings" → "Audio feedback suppression"
(C) Set the Radio and Accessory to "Reduce Feedback"



Repeat Step 7 and Step 8 for each radio profile, as desired.

Step 9. Adding the BT menu to the Home Screen:
(A) Under "Radio Ergonomics Configuration" → "Controls"
(B) Select "Menu Items"
(C) Ensure the "BT" menu item is added to the "Selected" List
(Moving the "BT" item to the top two priority features will allow easy access to the Bluetooth menu)

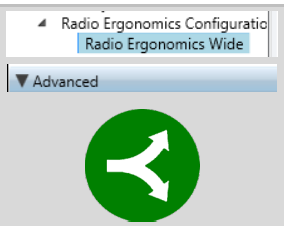


Step 10. (A) Go to "Radio Ergonomics Configuration" → "Radio Ergonomics Wide"

(B) Click the "Advanced" link at the top to jump to the "Advanced" sub-section and expand it.

(C) Choose the settings for the desired PTT and Speaker Option

Proceed to "OPTION 1" for radios WITH a Remote Speaker Mic (RSM)
Proceed to "OPTION 2" for radios WITHOUT a Remote Speaker Mic (RSM)



OPTION 1: RSM Large Button as PTT button and Default Incoming Audio to RSM

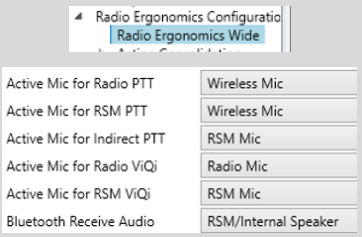
This option is for Radios WITH a Remote Speaker Mic (RSM), which Allows Speaker Volume control.
And will operate with: (A) the RSM's large button as PTT button, and
(B) Default Incoming Audio to the RSM.

Under "Radio Ergonomics Configuration" → "Radio Ergonomics Wide" → "Advanced"

(A) For the "**Active Mic for Radio PTT**" setting: Select "**Wireless Mic**"

(B) For the "**Active Mic for RSM PTT**" setting: Select "**Wireless Mic**"

(C) For the "**Bluetooth Receive Audio**" setting: Select "**RSM/Internal Speaker**"



OPTION 2: Radio PTT Button with Incoming Audio to the G1 Lapel Mic

This option is for Motorola APX NEXT/N70 Radios WITHOUT a Remote Speaker Mic (RSM).
And will operate with: (A) Radio's PTT Button, and
(B) Default Incoming Audio to the G1 Speaker Module

Step 1. Under "Radio Ergonomics Configuration" → "Radio Ergonomics Wide" → "Advanced"

For the "**Active Mic for Radio PTT**" setting: Select "**Wireless Mic**".

Step 2. For the "**Bluetooth Receive Audio**" setting: Select "**Bluetooth Speaker**".

Active Mic for Indirect PTT - If you have purchased and configured Radio/RSM hardware capable of using Emergency Call Button features, you may see an option to select an "**Active Mic for Indirect PTT**" in your Motorola CPS programming software.

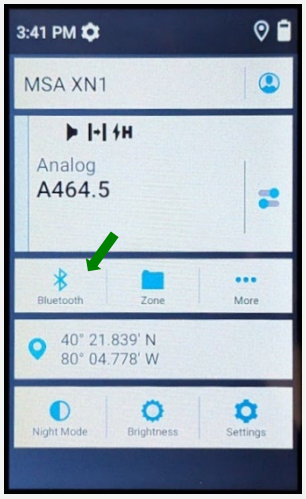
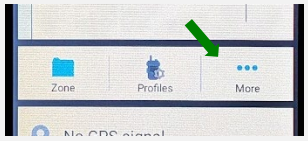
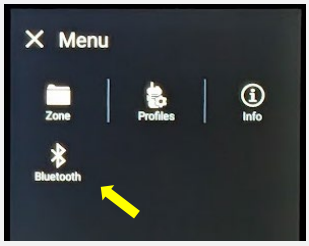
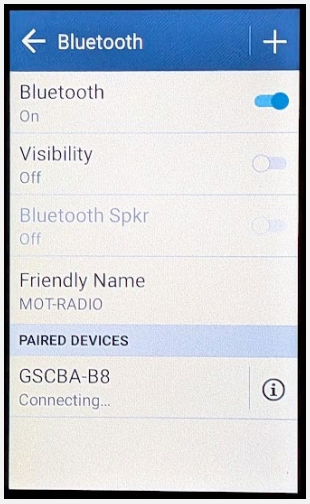
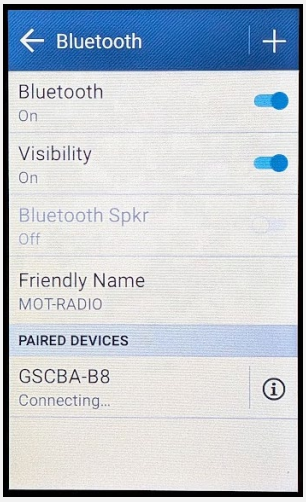
In cases where the department has opted to use an emergency call button, MSA recommends setting this feature to "**RSM Mic**".

It is **NOT recommended** to set "Active Mic for Indirect PTT" to "Wireless Mic", based on consideration that, in an emergency call situation, there is an increased potential for conditions that inhibit communication through the G1 microphone, and the firefighter may be in a position that makes egress, troubleshooting, or switching to the radio mic more difficult.

Motorola APX NEXT/N70 Screen Navigation

Navigating: Motorola APX NEXT/N70 Radio Screens

If Bluetooth is not on Home Screen

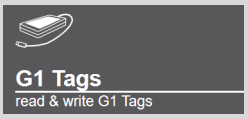
Selecting Bluetooth Menu	If "Bluetooth" is NOT on Main Screen	Turn Bluetooth On	Turn Visibility On
	 		
Step 1: Turn on the Radio with the volume knob; or if the screen is asleep, wake it using the radio's "Sleep/Wake" button (short press). **Select "Bluetooth"** to enter the Bluetooth settings menu page.	When Bluetooth Menu is NOT on Main Screen: **Select** "**… More**" to open the menu items not configured to the main screen. **Navigate to and select "Bluetooth"** to enter the Bluetooth settings menu page.	**Step 2:** In the Bluetooth Menu Page, Select the "Bluetooth" Bar to turn On the Bluetooth functionality.	**Step 3:** In the Bluetooth Menu Page, Select the "Visibility" Bar to turn On the Radio's visibility to other Bluetooth Devices. **This step is only mandatory for the tag creation with A2 as described on page 8 step 6**

Creating a G1 SCBA Configuration Tag (G1 Bluetooth Settings)

The purpose of this section is to: (1) enable the Bluetooth radio on the G1 SCBA and
(2) set Bluetooth Pair Save behavior based on the department's preference.

Step 1. Launch the MSA A2 Software

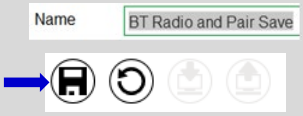
Step 2. Select the "G1 Tags" Tile on the A2 Dashboard (Under the "G1 Devices" column)



Step 3. Select tag type: "G1 Configurations"

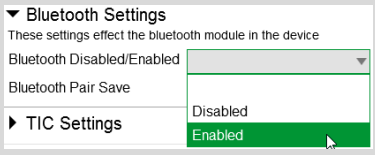
Step 4. Select the Add (+) icon (top-right) to create the configuration template, which will be used to change these 2 settings.

Note: This tag can be written without saving a template, but a template can be saved using the Save Icon (top-right) if a template Name is filled in.



Step 5. Enabling the G1 SCBA's Bluetooth Radio:

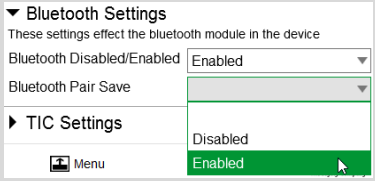
(A) Expand the "Bluetooth Settings" section.
(B) Change "Bluetooth Disabled/Enabled" setting to "Enabled".



Step 6. Preference Choice: "Bluetooth Pair Save" setting options:)

(A) Require Radio Pairing Tag in every SCBA is turned on, choose "Disabled"
(B) To retain the Radio Pairing on the SCBA until "clearing the pair" *, choose "Enabled"

** - defined on the "Removing Radio Pairing Info from the G1 SCBA" page.*



Step 7. Writing the G1 Configuration Tag:

(A) Place RFID Tag on the RFID Reader / Writer
(B) Select the Write G1 Tag icon (top-right side of A2 application)

Step 8. Applying the G1 Configuration Tag to the G1 SCBA(s):

(A) Power on the G1 SCBA
(B) **Press & hold** either of the **green** Control Module buttons to activate the RFID mode. *For iTic Control modules: Press & Hold Both Green Buttons.*
(C) Place Bluetooth Pairing Save Tag over G1 Power Module RFID Target.

The G1 SCBA is now configured with the settings:
- G1 Bluetooth is now enabled - G1 Bluetooth Pair Save (as chosen).

The G1 SCBA is now ready to accept a Radio Pairing tag.

Repeat this "Step 8" for each SCBA to apply these 2 settings.

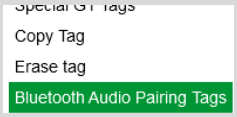
Creating a G1 SCBA Motorola APX NEXT/N70 Radio Pairing Tag

The purpose of this section is to use MSA A2 Software to "see" a "discoverable" (BT visible) radio in A2, select it, read it's BT address, and write it to a tag, for a radio-specific "Bluetooth Audio Pairing Tag".

Step 1. Launch the MSA A2 Software

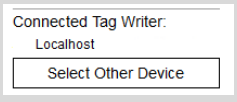
Step 2. Select the "G1 Tags" Tile on the A2 Dashboard ("G1 Devices" column)

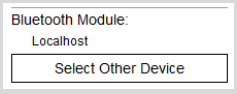
Step 3. Select tag type: "Bluetooth Audio Pairing Tags"



Step 4. Ensure the PC's Bluetooth is enabled, and selected for use in A2, and that your RFID Reader/Writer is connected and ready.

- Both modules appear in lower left of the A2 screen. (Generally as "localhost")
- If either is not visible or not selectable under "Select Other device": disconnect and reconnect the hardware
- Restart the A2 Service if necessary.





Step 5. Turn on the APX NEXT/N70 Radio using the volume knob.

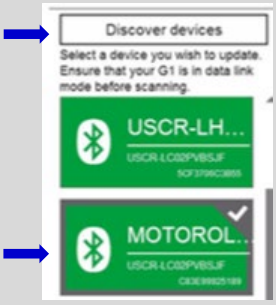
Step 6. Making the APX NEXT/N70 Radio Discoverable, & Discovering it in A2:

(A) On the Home Screen select "Bluetooth" ← *Refer to "Motorola APX NEXT/N70 Screen Navigation." Page.*

(B) In the Bluetooth Menu Page, Select the "Bluetooth" Bar to turn On the Bluetooth functionality

(C) Select the "Visibility" Bar to turn On the Radio's visibility.

(D) Click the discovered Motorola APX NEXT/N70 Radio in A2 to select it.



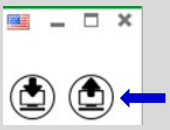
Step 7.

Writing the Bluetooth Audio Pairing Tag:

(A) Place RFID Tag on the RFID Reader / Writer.

(B) Select the Write G1 Tag icon (top-right side of A2).

(C) Click "OK" on the "Tag was successfully written" dialog.



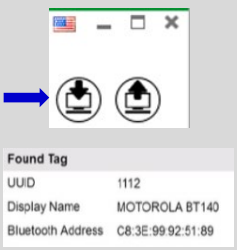
Hovering will show "Write Tag" or "Read Tag".

Step 8. Verifying the Information Written to the Tag:

(A) Place RFID Tag on the RFID Reader / Writer

(B) Select the Read G1 Tag icon (top-right side of A2 application)

(C) Confirm the tag's Bluetooth Address matches the Radio.



The Radio Pairing tag is now created for this radio. See next page for using it.

Pairing G1 & Radio

Pairing a G1 SCBA and Motorola APX NEXT/N70 Radio

The purpose of this section is to pair a radio with a G1 SCBA using the radio-specific "Bluetooth Audio Pairing Tag".

"Pairing" is registering 2 Bluetooth devices with one-another so they can be connected. "Paring" does not mean "connecting".

Step 1. Turn on the Motorola APX NEXT/N70 Radio using volume knob.

Step 2. In the radio Bluetooth Menu, verify the radio has

(A) **Bluetooth On** and is the

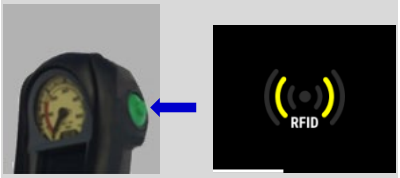
(B) **Bluetooth Visibility is On**.

← *Refer to the "**Motorola APX NEXT/N70 Screen Navigation**" page for details.*

Step 3. Power on the G1 SCBA.

Step 4. **Press & hold** either of the green Control Module buttons to activate the RFID mode.

*For iTic Control Modules: Press & Hold **Both** Green Buttons.*



Step 5. Register the Radio to the G1 SCBA:

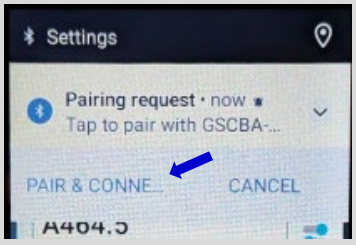
Place the Radio's RFID Pairing Tag over the G1 Power Module RFID Target.

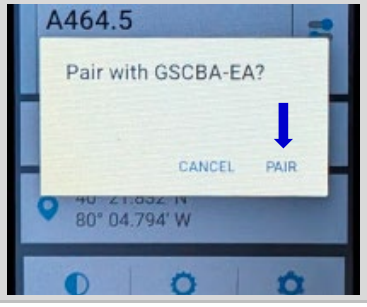
Step 6. Pair the Radio:

(A) A pairing request banner will appear on the radios display, Press "Pair & Connect" to acknowledge the request.

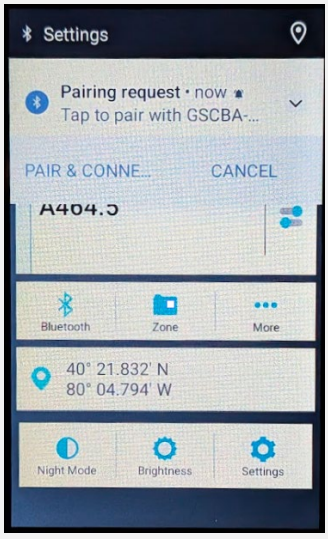
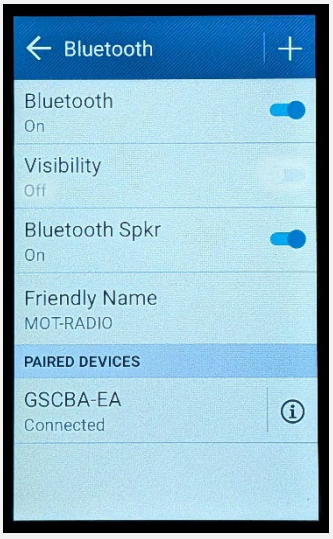
(B) The pairing message Pop-Up will now appear with BT Device Info, Press "Pair" to confirm pairing request.

More Detail on next page.





Pair Request Screens

Pair Request Received	Confirm Pairing Request	Bluetooth Speaker Setting
		
Step 1: When a Pair Request is received by the radio, a **banner** will display on the top of the screen. **Press "Pair & Connect"** to acknowledge the request.	**Step 2:** The pairing message **Pop-Up** will now appear with BT Device Info, Press **"Pair" to confirm** pairing request.	**Bluetooth Speaker Setting:** **"OFF"** → Incoming Audio is routed to the **Radio/RSM Speaker**. *(Volume adjustable at radio/RSM)* **"ON"** → Incoming Audio is routed to the **G1 Speaker Module**.

Notes:

- Visible Menu availability is customizable: Re-programming may be required to make desired menus visible.
- For radio models not depicted, consult the product's documentation for info and appropriate procedures.

The G1 SCBA & Motorola Radio is now paired and ready for use.

- After a successful pairing *(unless the Facepiece is already donned, and the regulator is open)* the G1 SCBA will **not** remain connected to the radio.
  - It will have paired, beeped, and disconnected.
  - The radio is available for non-Bluetooth use.
- When the end user restarts the radio (so it is visible), dons the facepiece, turns on the G1 regulator, and breathes (as described in the next section), the G1 SCBA will automatically connect to this paired radio.

Using Paired G1 & Radio

Using the G1 SCBA and Motorola APX NEXT/N70 Radio

The purpose of this section is to describe how to initiate the connection between the paired G1 SCBA and radio.

Step 1. Turn on the Motorola APX NEXT/N70 Radio using volume knob.

Step 2. Don the G1 SCBA and securely attach the G1 Facepiece to your face.

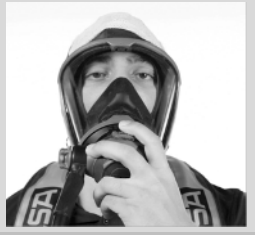
A poor facepiece seal can cause improper microphone performance, such as intermittent audio.

Step 3. Turn on the G1 SCBA via pressurization.

- The G1 SCBA will try to establish a Bluetooth connection to the **currently paired radio** for up to 8 minutes.
- When found, it will quickly connect and disconnect, (and is now ready to automatically activate when breathing.)

If the connection is not established, repeat the pairing process described in the previous section.

Step 4. Begin breathing (with the regulator attached).
The radio and SCBA will connect automatically (approx. 20 seconds).



All SCBA voice communication will now go from the SCBA through the portable radio.

Use Notes & Tips:

- Turn on the radio just ***before*** you turn on the G1 SCBA.
- If the regulator is shut off, The G1 SCBA will not remain connected to the radio. The radio can be used by itself (no Bluetooth connection) when the regulator is shut off. The G1 SCBA will automatically reconnect to the radio when breathing on the G1 regulator (as described above) resumes.
- Verify both the incoming and outgoing audio functionality after breathing resumes.

The purpose of these sections is to describe how to "un-pair" the G1 SCBA & Radio, so they will no longer connect.

The **Best practice** is to **clear the pairing information from both devices**—the radio & the G1 SCBA.

Clearing G1 SCBA Pair

Clearing Radio Pairing Info from the G1 SCBA

There are 3 methods for removing stored Radio pairing information from the G1 SCBA.

- All 3 methods are effective on G1 SCBAs configured with "Bluetooth Pair Save" being "Disabled"
- The "**Battery Removal Method**" is a popular method, however, **"Bluetooth Pair Save" setting MUST BE set to "Disabled".**

Method 1 – Battery Removal *(Only effective when the G1 "Bluetooth Pair Save" setting is "Disabled")*

Step 1. Remove G1 SCBA Battery

Bluetooth audio pair info is cleared from the G1 SCBA.

Next → "Clearing Radio Pairing Info from the Motorola APX Radio" in the next section.

Method 2 – Use a "Reset Bluetooth Pairing" Tag

*If not yet created: In the A2 software, under "G1 Tags" tile → "Special G1 Tags" → Expand "Reset Tags" list → Select "**Reset Bluetooth Pairing**"*

Step 1. **Press & hold** either of the **green** Control Module buttons to access the RFID mode display.

Step 2. Place the "Reset Bluetooth Pairing" Tag over the G1 Power Module RFID Target.

Bluetooth audio pair info is cleared from the G1 SCBA.

Next → "Clearing Radio Pairing Info from the Motorola APX Radio" in the next section.

Method 3 – Pair New Radio (Replacement but not complete clearing)

Step 1. Pair a different Bluetooth Motorola APX NEXT & N70 Radio with the G1 SCBA using the new radio's Bluetooth Audio Pairing Tag, as described in the "Pairing a G1 SCBA and Motorola APX Radio" section.

Bluetooth audio pair info on the G1 SCBA is changed to the newly tagged radio pair. The previous radio remains in the G1s memory, it is not completely cleared.

Note: Technically, the previously paired radios remain in the "bonding list" memory but are no longer active. If the G1 stops accepting new radios with this method: Use Method 2 for a complete clear.

Next → "Clearing Radio Pairing Info from the Motorola APX NEXT & N70 Radio" in the next section.

Clearing APX Radio Pair

Clearing the Pairing Info from the Motorola APX NEXT/N70 Radio

Step 1. Touch the BT Menu tile.

Step 2. Under Paired Devices: Touch the "ⓘ" info icon next to the name.

Step 3. Touch the option to "**Forget**" the paired device.

Bluetooth audio pair info is cleared from the Motorola APX Radio.

If not done already: Clear the pairing info from the previously connected G1 SCBA's pair history using the process described in in the previous section: "Clearing Radio Pairing Info from the G1 SCBA".

Note : If G1 SCBA is cleared on the radio and the radio is tagged one more time, it can take up to a minute for the new pair request to be seen on the radio.

Troubleshooting

G1 SCBA & Motorola Radio Troubleshooting

Topic	Problem/Issue	Diagnosis	Possible Solution	Expected Result
Audio	Intermittent Audio	Facepiece may not be properly sealed	Adjust the facepiece until a proper seal is formed	Outgoing audio will function as expected
	Incoming and/or outgoing audio from G1 is not working	Bluetooth icon is visible on the Radio	Power the portable radio on and off to reset the auto connect.	Radio will automatically connect to G1 and emit an audible indication for success.
			If power cycling the radio does not result in a successful connect, clear the G1 & Radio pairing history and repair the G1 & Radio.	G1 & Radio will now connect and audio will function as expected
Pairing	Bluetooth pairing information lost from G1	Pairing information is cleared when the battery G1 battery is removed. (When G1 "Bluetooth Pair Save" is not set to enabled.)	G1 is configurable to retain pairing information across battery removals. Review instructions for "G1 SCBA Configuration Tag" and Bluetooth Paring Save settings.	Bluetooth pairing information will no longer be cleared on every battery removal.
	Radio will not pair with G1	Bluetooth is not enabled on the radio	Turn on Radio Bluetooth via the Bluetooth Menu	Bluetooth icon is visible on Radio while connected.
			Power the portable radio on and off to reset the auto connect.	
			If power cycling the radio does not result in a successful connect, clear the G1 & Radio pairing history. Repair the G1 & Radio.	
		G1 is not Bluetooth enabled, icon on control module is not seen	Enable Bluetooth on the G1 using a G1 Configuration tag that enables Bluetooth.	Bluetooth icon on the G1 control module will be: *Red* = enabled/unpaired OR enabled/paired, not connected *Green* = enabled/connected
		Radio is a non-Motorola APX NEXT/N70 Series Bluetooth Radio	G1 is compatible with Bluetooth Motorola APX NEXT/N70 Series Radios.	To use G1 Bluetooth audio, pair with Motorola APX NEXT/N70, NEXT XE , NEXT XN , N70 , or N70 XE model of Radios.
	Radio is paired to an incorrect G1	Radio and/or G1 was previously paired to a different radio or G1	Clear the pairing information on both the G1 & Radio. Pair desired G1 & Radio	Desired G1 and Radio will be paired together