



Compliments of:



**MOTOROLA
SOLUTIONS**

**Radio Solutions
Channel Partner**



706-896-0000

MOTOTRBO AUDIO CONFIGURATION GUIDE

VERSION 1.01
19-Feb-2016



HOW TO USE THIS GUIDE



Feature Name

Single sentence summary


Full description

Link to video (if available)


Version

Radio Compatibility:

- Standard (solid outline)
- Optional (dotted outline)
- Not available (strikethrough)



INTELLIGENT AUDIO




Summary:



- Your radio monitors background noise and adjusts the speaker volume, so you don't have to.

Detail:

- Intelligent Audio is a receive-only feature that enhances the audibility of voice calls.
- It uses the radio or accessory's microphone to monitor levels of background noise. When it detects that the radio is in a loud environment, the speaker volume is automatically increased. When in a quiet environment, the volume is automatically reduced.
- The radio's volume can still be adjusted using the volume knob, but this feature eliminates the need for continual adjustment.
- Accessories are not required, but selected accessories are supported.



SL7500
XPR7550IS
XPR7500
XPR7300
XPB6500IS
XPR6500
XPR6300
XPR6100
XPR5500
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~~XPR2500~~
SL300
CM3000
CM2000
CP2000

 YOUR CALLS, ALWAYS AT THE PERFECT VOLUME  V2.2

NOTE: ONLY DIGITAL FEATURES ARE LISTED



INTELLIGENT AUDIO



Summary:

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- Accessories are not required and selected accessories are supported.



SL 7500

XPR 7550 IS

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YOUR CALLS, ALWAYS AT THE PERFECT VOLUME

V 2.0



INTELLIGENT AUDIO - CONFIGURATION



Summary:

- Enable / Disable using CPS, a Programmable Button or the Radio Menu

Options:

Disabled: Disables the Intelligent Audio Response feature. The audio volume will follow the volume knob position. It will not be automatically adjusted with ambient noise level.

Normal: The noise threshold of the intelligent audio follows the volume knob position. Once the ambient noise is above the noise threshold, the audio volume is boosted.

Notes

1. This feature is supported in Digital mode only.
2. Many, but not all, accessories support Intelligent Audio
3. For those systems which utilize the 13W external speaker attached to a mobile radio, it may or may not be possible to place the external speaker for optimal performance of Intelligent Audio.

The screenshot displays the 'Intelligent Audio' configuration interface, divided into two main sections: 'Audio Profile' and 'Microphone'.

Audio Profile Section:

- Intelligent Audio Response:** Set to 'Normal' (highlighted with a red box).
- Environment:** Set to 'Default'.
- Preference:** Set to 'Default'.
- AF Suppressor:** Unchecked.
- Noise Suppressor:** Set to 'Basic'.
- Trill Enhancement:** Unchecked.

Microphone Section:

- Mic Selection Rule:** Set to 'Default'.
- Analog Mic AGC:** Checked.
- Digital Mic AGC:** Checked.
- Analog Mic Gain (dB):** Set to 5.
- Digital Mic Gain (dB):** Set to 9.
- VOX Sensitivity:** Set to 'Level 2'.
- Hot Mic Source:** Set to 'Accessory'.



USER-SELECTABLE AUDIO PROFILES



Summary:

- Your radio's audio characteristics can be tuned to suit your preference and your workplace.

Detail:

- Everyone's hearing is different. Depending on age and work history, you may have reduced sensitivity to certain frequencies. It doesn't help when your work environment has variable background noise.
- This feature allows you to customize the audio of the radio to suit your preference and work environment. You can select from two different "ambience" settings and six different audio profiles.
- This feature was introduced in software release 2.4.



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USAP - CONFIGURATION



Summary:

- Configure using CPS or the Radio Menu

Options:

Environment:

- **Default:** When set to Default, this feature is disabled.
- **Loud:** For loud environments: increases volume and noise suppression
- **Work Group:** For quiet environments: enables feedback suppression

Preference:

- **Default:** When set to Default, this feature is disabled.
- **Level 1:** Mild compensation, for users exposed to industrial noise
- **Level 2:** Moderate compensation, for users exposed to industrial noise
- **Level 3:** Maximum compensation, for users exposed to industrial noise
- **Treble Boost:** For a “brighter” sound
- **Mid Boost:** For a more “nasal” tone – similar to legacy radios
- **Bass Boost:** For a deeper sound

Notes

1. The “Loud” profile is selected and the radio volume is turned up to full, some audio distortion will be heard.

The screenshot displays the USAP configuration interface, divided into two main sections: **Audio Profile** and **Microphone**.

Audio Profile Section:

- Intelligent Audio Response:** Set to **Normal** (dropdown menu).
- Environment:** Set to **Default** (dropdown menu, highlighted with a red box).
- Preference:** Set to **Default** (dropdown menu, highlighted with a red box).
- AF Suppressor:** Disabled (checkbox).
- Noise Suppressor:** Set to **Basic** (dropdown menu).
- Trill Enhancement:** Disabled (checkbox).

Microphone Section:

- Mic Selection Rule:** Set to **Default** (dropdown menu).
- Analog Mic AGC:** Enabled (checkbox).
- Digital Mic AGC:** Enabled (checkbox).
- Analog Mic Gain (dB):** Set to **5** (spinner control).
- Digital Mic Gain (dB):** Set to **9** (spinner control).
- VOX Sensitivity:** Set to **Level 2** (dropdown menu).
- Hot Mic Source:** Set to **Accessory** (dropdown menu).



ACOUSTIC FEEDBACK SUPPRESSOR



Summary:

- Your radio blocks acoustic feedback from other radios to eliminate unpleasant “howling”.

Detail:

- Audio Feedback Suppressor is a receive-only feature that improves the overall ability to communicate in the presence of acoustic feedback.
- If you’ve ever been near to a colleague when making a group call, you’re familiar with the acoustic feedback that can result: the audio coming out of the speaker feeds back into the microphone until nobody can hear anything except an unpleasant “howling” noise.
- The latest MOTOTRBO software alleviates this irritating problem. Using a sophisticated software algorithm, your radio is able to recognize the audio feedback from nearby radios and discard it. Now you never need to step away from your colleagues to make a call. And you can trust that your radio will allow your clients to enjoy their peace and quiet.
- This feature was introduced in software release 2.2A



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YOU’LL NEVER NEED TO STEP AWAY TO MAKE A CALL

V 2.2



AF SUPPRESSOR - CONFIGURATION



Summary:

- Enable / Disable using CPS, a Programmable Button or the Radio Menu

Options:

Checked: The AF Suppressor feature is enabled.

Unchecked: The AF Suppressor feature is disabled.

Notes:

1. This feature is supported in Digital mode only.
2. The AF Suppressor is most beneficial to work groups who are within ear-shot of each other.
3. In noisy environments the AF Suppressor acts as a secondary noise suppressor and applies additional attenuation to the audio. Some impact to audio quality should be expected in noisy environments.

The screenshot displays the configuration interface for the AF Suppressor. It is divided into two main sections: 'Audio Profile' and 'Microphone'.

Audio Profile Section:

- Intelligent Audio Response: Disabled (dropdown)
- Environment: Default (dropdown)
- Preference: Default (dropdown)
- AF Suppressor: ☒** (highlighted with a red box)
- Noise Suppressor: Basic (dropdown)
- Trill Enhancement: ☐

Microphone Section:

- Mic Selection Rule: Default (dropdown)
- Mic Distortion Control: ☒
- Analog Mic AGC: ☒
- Digital Mic AGC: ☒
- Analog Mic Gain (dB): 5 (slider)
- Digital Mic Gain (dB): 9 (slider)
- VOX Sensitivity: Level 2 (dropdown)
- Hot Mic Source: Accessory (dropdown)



NOISE SUPPRESSION



Summary:

- Your radio removes unwanted background noise.

Detail:

- The AMBE+2™ vocoder (AMBE = Advanced Multi-Band Exciter) is the industry standard algorithm for converting speech into a narrowband digital data stream. It recognises the sounds made by the human voice and renders them as a set of highly-optimised codes. It allows digital radio to be extremely efficient, and as a side benefit, it helps remove some of the background noise from transmissions.



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INCREASED CLARITY

V 1.00



ENHANCED NOISE SUPPRESSION



Summary:

- Your radio gives you more options to filter out background noise, so you're heard more clearly.

Detail:

- All MOTOTRBO radios have basic noise cancellation, which provides effective suppression of background noise in a wide range of user environments.
- Enhanced Noise Suppression provides two new configurations: "Enhanced" and "Enhanced Auto".
 - **"Enhanced"** applies exceptionally effective suppression of background noise for environments that are consistently noisy.
 - **"Enhanced Auto"** adapts the amount of suppression based on the volume of ambient noise detected, and is ideally suited for users who move between quiet and loud environments. In a noisy situation, the maximum noise suppression is applied. In a quiet situation, only a little noise suppression is applied, and maximum speech detail is retained.
- Although Enhanced Noise Cancellation is not as effective as dual-microphone noise cancellation methods, it does not require an accessory, so can be more cost-effective.
- This feature was introduced in software release 2.5.
- You must purchase a license to use this feature.



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FLEXIBLE, AFFORDABLE NOISE CANCELLATION

NEW
FEATURE

V 2.5



NOISE SUPPRESSION - CONFIGURATION



Summary:

- Configure using CPS or the Radio Menu

Options:

- **Disabled:** The feature is disabled.
- **Basic:** Basic noise suppression is applied. Available to all radios.
- **Enhanced:** Advanced noise suppression is applied. This option is ideal for users who operate in environments with constant noise.
- **Enhanced Auto:** Advanced noise suppression is dynamically applied. In quiet environments the noise suppression is relaxed so that the audio is more natural sounding. In noisy environments, maximum noise suppression is applied.

Notes

1. “Enhanced and “Enhanced Auto” options are available for purchase.
2. Languages which include guttural sounds will be impacted by noise suppression. For these languages disabling the Noise Suppressor will improve the audio quality.
3. For users in extremely noisy environments, Basic, Enhanced and Enhanced Auto noise suppression may not effectively remove all ambient noise.
4. Maintaining an SNR (Speech to Noise Ratio) of at least 5 dB is critical for clear, intelligible transmissions.

The screenshot displays two configuration screens from a radio interface. The top screen, titled 'Audio Profile', features several settings: 'Intelligent Audio Response' is set to 'Disabled'; 'Environment' is set to 'Default'; 'Preference' is set to 'Default'; 'AF Suppressor' is unchecked; 'Noise Suppressor' is set to 'Basic' and is highlighted with a red rectangular border; and 'Trill Enhancement' is unchecked. The bottom screen, titled 'Microphone', shows: 'Mic Selection Rule' set to 'Default'; 'Mic Distortion Control' checked; 'Analog Mic AGC' checked; 'Digital Mic AGC' checked; 'Analog Mic Gain (dB)' set to 5; 'Digital Mic Gain (dB)' set to 9; 'VOX Sensitivity' set to 'Level 2'; and 'Hot Mic Source' set to 'Accessory'.



INDUSTRIAL NOISE CANCELLATION



Summary:

- Your INC RSM cancels high level industrial noise, so you can communicate clearly.

Detail:

- Wherever you work – with noisy plant machinery, aircraft engine noise, blast of a smelting furnace or sirens from emergency services – industrial noise cancelling helps you communicate effectively and helps listeners hear clearly.
- INC RSM's innovative technology eliminates industrial sounds of machinery, sirens etc and extracts your voice and sends it to your radio for transmission. Using two microphones, a DSP sampling the audio band extracts your voice from the noise especially at high levels of noise.
- Cleaning the RSM could not be easier, brush debris from the RSM head, rinse it under warm water from a tap and shake dry.

Notes:

- INC RSM available on XPR 6000/7000 series.



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I HEAR YOU, NOT THE NOISE



TRILL ENHANCEMENT



Summary:

- Your radio reproduces more languages with better accuracy.

Detail:

- The AMBE+2™ vocoder (AMBE = Advanced Multi-Band Exciter) is the industry standard algorithm for converting speech into a narrowband digital data stream. It recognises the sounds made by the human voice and renders them as a set of highly-optimised codes. It allows digital radio to be extremely efficient, and as a side benefit, it helps remove some of the background noise from transmissions.
- However, the algorithm does not reproduce some languages very well. In particular, the “trill” or rolling “rrrr” sound in the Latin languages is transformed into a flattened “r”.
- This feature applies additional audio processing in the transmitting radio to enhance the sharpness of the trill. In this way, speech is more intelligible, but there is minimal impact to the way voice is transmitted: Non-MOTOTRBO radios in the system will receive the benefit of the enhanced transmissions however they will not be able to respond with a similar level of audio clarity.
- This feature was first introduced in software release 2.4



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INCREASED FIDELITY FOR MORE LANGUAGES

V 2.4



TRILL ENHANCEMENT- CONFIGURATION



Summary:

- Enable / Disable using CPS, a Programmable Button or the Radio Menu

Options:

Checked: The Trill Enhancement feature is enabled.

Unchecked: The Trill Enhancement feature is disabled.

Notes:

1. This feature is supported in Digital mode only.
2. This feature is only beneficial to languages which include the Alveolar Trill such as Italian, Spanish, etc.

The screenshot displays two configuration screens from a radio's menu. The top screen, titled 'Audio Profile', has a blue header and contains the following settings: 'Intelligent Audio Response' set to 'Disabled', 'Environment' set to 'Default', 'Preference' set to 'Default', 'AF Suppressor' as an unchecked checkbox, 'Noise Suppressor' set to 'Basic', and 'Trill Enhancement' which is checked and highlighted with a red rectangular border. The bottom screen, titled 'Microphone', also has a blue header and contains: 'Mic Selection Rule' set to 'Default', 'Mic Distortion Control' checked, 'Analog Mic AGC' checked, 'Digital Mic AGC' checked, 'Analog Mic Gain (dB)' set to 5, 'Digital Mic Gain (dB)' set to 9, 'VOX Sensitivity' set to 'Level 2', and 'Hot Mic Source' set to 'Accessory'.

Audio Profile	
Intelligent Audio Response	Disabled
Environment	Default
Preference	Default
AF Suppressor	<input type="checkbox"/>
Noise Suppressor	Basic
Trill Enhancement	<input checked="" type="checkbox"/>

Microphone	
Mic Selection Rule	Default
Mic Distortion Control	<input checked="" type="checkbox"/>
Analog Mic AGC	<input checked="" type="checkbox"/>
Digital Mic AGC	<input checked="" type="checkbox"/>
Analog Mic Gain (dB)	5
Digital Mic Gain (dB)	9
VOX Sensitivity	Level 2
Hot Mic Source	Accessory



MICROPHONE SELECTION



Summary:

- Your radio activates the microphone you need.

Detail:

- The Microphone Selection Rule allows you to choose which microphone is enabled when you press the PTT button.
- You can choose to have the accessory microphone enabled when the side-button PTT is pressed or you can choose to have the internal microphone enabled whenever the side-button PTT is pressed.



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MIC SELECTION - CONFIGURATION



Summary:

- Configure using CPS

Options:

Default: When an Accessory is connected to the radio the Accessory PTT button and the radio side-button PTT both activate the microphone on the Accessory. The Internal microphone on the radio is never active.

External PTT Only: When an Accessory is connected to the radio, the Accessory PTT button activates the Accessory microphone. The radio side-button PTT is disabled (a.k.a “side-button lock-out”).

Mic Follow PTT: When an Accessory is connected to the radio, the Accessory PTT button activates the Accessory microphone. The radio side-button PTT activates the internal microphone.

Notes:

1. The Mic Selection Rule only applies when an Accessory is connected to the radio. The radio side-button PTT will always activate the internal microphone whenever an Accessory is not connected to the radio.

The screenshot displays the 'Audio Profile' and 'Microphone' configuration sections of the CPS interface. The 'Audio Profile' section includes settings for 'Intelligent Audio Response' (Disabled), 'Environment' (Default), 'Preference' (Default), 'AF Suppressor' (unchecked), 'Noise Suppressor' (Basic), and 'Trill Enhancement' (unchecked). The 'Microphone' section includes 'Mic Selection Rule' (Default, highlighted with a red box), 'Mic Distortion Control' (checked), 'Analog Mic AGC' (checked), 'Digital Mic AGC' (checked), 'Analog Mic Gain (dB)' (5), 'Digital Mic Gain (dB)' (9), 'VOX Sensitivity' (Level 2), and 'Hot Mic Source' (Accessory).

Audio Profile	
Intelligent Audio Response	Disabled
Environment	Default
Preference	Default
AF Suppressor	<input type="checkbox"/>
Noise Suppressor	Basic
Trill Enhancement	<input type="checkbox"/>

Microphone	
Mic Selection Rule	Default
Mic Distortion Control	<input checked="" type="checkbox"/>
Analog Mic AGC	<input checked="" type="checkbox"/>
Digital Mic AGC	<input checked="" type="checkbox"/>
Analog Mic Gain (dB)	5
Digital Mic Gain (dB)	9
VOX Sensitivity	Level 2
Hot Mic Source	Accessory



MICROPHONE DISTORTION CONTROL



Summary:

- Your radio adjusts its microphone to match your voice, so your call is never distorted.

Detail:

- This is a transmit-only feature. It improves voice quality when the user is speaking loudly into the microphone, and works alongside the standard AGC (Automatic Gain Control) of the radio.
- The radio continuously monitors the quality of the speech data as it is being processed. When it detects early signs of audio distortion, perhaps by someone speaking loudly over background noise, the radio reduces the sensitivity of the microphone until the distortion disappears.
- Microphone Distortion Control is a natural extension of the Automatic Gain Control (AGC) feature, as it monitors and controls distortion of the transmit audio.
- This feature was introduced in software release 2.2A



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CRISP AUDIO, HOWEVER LOUDLY YOU SPEAK

V 1.00



MIC DISTORTION CONTROL - CONFIGURATION



Summary:

- Enable / Disable using CPS, a Programmable Button or the Radio Menu

Options:

Checked: The Mic Distortion Control feature is enabled.

Unchecked: The Mic Distortion Control feature is disabled.

Notes:

1. The benefit of this feature will be most obvious in loud environments where the microphone input levels are much higher than the nominal input levels.
2. This feature is supported in Digital mode only.

The screenshot displays two configuration sections from a radio's menu. The top section, 'Audio Profile', includes settings for Intelligent Audio Response (Disabled), Environment (Default), Preference (Default), AF Suppressor (unchecked), Noise Suppressor (Basic), and Trill Enhancement (unchecked). The bottom section, 'Microphone', includes Mic Selection Rule (Default), Mic Distortion Control (checked and highlighted with a red box), Analog Mic AGC (checked), Digital Mic AGC (checked), Analog Mic Gain (5 dB), Digital Mic Gain (9 dB), VOX Sensitivity (Level 2), and Hot Mic Source (Accessory).

Section	Setting	Value
Audio Profile	Intelligent Audio Response	Disabled
	Environment	Default
	Preference	Default
	AF Suppressor	<input type="checkbox"/>
	Noise Suppressor	Basic
	Trill Enhancement	<input type="checkbox"/>
Microphone	Mic Selection Rule	Default
	Mic Distortion Control	<input checked="" type="checkbox"/>
	Analog Mic AGC	<input checked="" type="checkbox"/>
	Digital Mic AGC	<input checked="" type="checkbox"/>
	Analog Mic Gain (dB)	5
	Digital Mic Gain (dB)	9
	VOX Sensitivity	Level 2
	Hot Mic Source	Accessory



AUTOMATIC GAIN CONTROL (AGC)

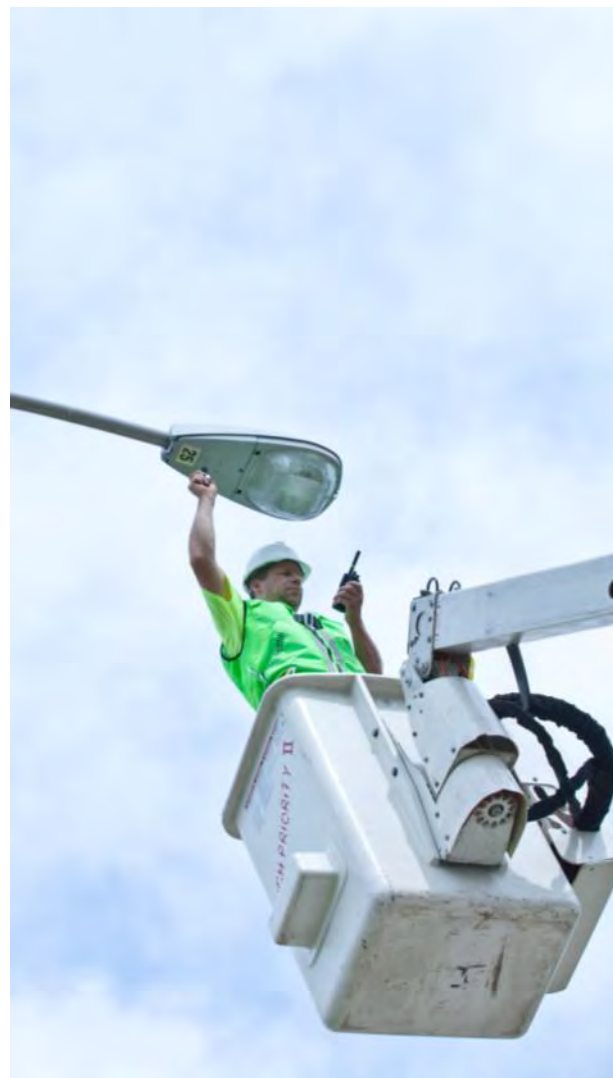


Summary:

- Everyone can be heard clearly, whether they whisper or shout into the microphone.

Detail:

- The DMR vocoder delivers excellent voice quality even when there is high background noise and poor signal conditions – but to produce optimal voice quality, the input level into the vocoder must fall within a specific range: This is difficult, as each user has their own individual style: some hold the microphone close to their mouth; some speak loudly over background machinery, and some use a visor microphone or RSM that doesn't even face their mouth.
- To address this, MOTOTRBO digital employs Automatic Gain Control (AGC) in the audio transmit path. Its primary function is to produce the best voice quality possible under real life conditions. IMPRES audio builds on this technology to deliver optimal voice quality over an even greater input range.
- A secondary function of AGC is to produce uniform speech loudness at the receiving radio: soft talkers, shouters and users who turn away from the microphone will still come through loud and clear.



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BETTER AUDIO IN REAL LIFE CONDITIONS

V 1.00



AGC - CONFIGURATION



Summary:

- Enable / Disable using CPS, a Programmable Button or the Radio Menu

Options:

Analog Mic AGC

Checked: The AGC feature is enabled for analog channels.

Unchecked: The AGC feature is disabled for analog channels.

Digital Mic AGC

Checked: The AGC feature is enabled for digital channels.

Unchecked: The AGC feature is disabled for digital channels.

Notes:

1. Enabling this feature overrides all the mic gain values. i.e. Mic Gain, Accessory Mic Gain, Front Mic Gain and Rear Mic Gain.
2. On VOX-enabled channels, disabling this feature and adjusting the Analog Accessory Mic Gain will affect VOX Sensitivity.
3. The AGC must be disabled if custom selection of the Mic Gain values is necessary. Custom values for the Mic Gain may be used to accommodate accessories with very higher to very lower input levels.

The screenshot displays the AGC configuration interface, divided into two main sections: 'Audio Profile' and 'Microphone'.

Audio Profile:

- Intelligent Audio Response: Disabled (dropdown)
- Environment: Default (dropdown)
- Preference: Default (dropdown)
- AF Suppressor: ☐
- Noise Suppressor: Basic (dropdown)
- Trill Enhancement: ☐

Microphone:

- Mic Selection Rule: Default (dropdown)
- Mic Distortion Control: ☒
- Analog Mic AGC: ☒ (highlighted with a red box)
- Digital Mic AGC: ☒ (highlighted with a red box)
- Analog Mic Gain (dB): 5 (slider)
- Digital Mic Gain (dB): 9 (slider)
- VOX Sensitivity: Level 2 (dropdown)
- Hot Mic Source: Accessory (dropdown)



MICROPHONE GAIN VALUES



Summary:

- Microphone gain can be adjusted to optimize audio for a wide-range of environments.

Detail:

- MOTOTRBO radios have been designed for use in a wide range of environments and can be used with a wide range of Motorola and third-party accessories.
- The microphone gain values can be used to optimize the audio input levels for a specific accessory or user environment. Adjustment of the gain values allows the radio to accommodate just about any customer need.



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CM200d

CP200d

OPTIMIZED AUDIO FOR ANY ENVIRONMENT

V 1.00



MICROPHONE GAIN - CONFIGURATION



Summary:

- Configure using CPS

Options:

Analog Mic Gain (dB)

Adjustable Value: Adjustable in 1 dB increments

Digital Mic Gain (dB)

Adjustable Value: Adjustable in 1 dB increments

Notes:

1. Mic gain values are ignored whenever the AGC is enabled.
2. The Microphone Gain values shown on this page apply only to the internal microphone.
3. The Mic Gain values for connected accessories is found on the "Accessories Tab" in CPS.

The screenshot displays the 'Audio Profile' and 'Microphone' configuration sections of the CPS interface. The 'Audio Profile' section includes settings for Intelligent Audio Response (Disabled), Environment (Default), Preference (Default), AF Suppressor (unchecked), Noise Suppressor (Basic), and Trill Enhancement (unchecked). The 'Microphone' section includes Mic Selection Rule (Default), Mic Distortion Control (checked), Analog Mic AGC (checked), Digital Mic AGC (checked), Analog Mic Gain (5 dB), Digital Mic Gain (9 dB), VOX Sensitivity (Level 2), and Hot Mic Source (Accessory). The Analog and Digital Mic Gain settings are highlighted with a red box.

Section	Setting	Value
Audio Profile	Intelligent Audio Response	Disabled
	Environment	Default
	Preference	Default
	AF Suppressor	<input type="checkbox"/>
	Noise Suppressor	Basic
	Trill Enhancement	<input type="checkbox"/>
Microphone	Mic Selection Rule	Default
	Mic Distortion Control	<input checked="" type="checkbox"/>
	Analog Mic AGC	<input checked="" type="checkbox"/>
	Digital Mic AGC	<input checked="" type="checkbox"/>
	Analog Mic Gain (dB)	5
	Digital Mic Gain (dB)	9
	VOX Sensitivity	Level 2
	Hot Mic Source	Accessory



VOICE OPERATED TRANSMISSION (VOX)

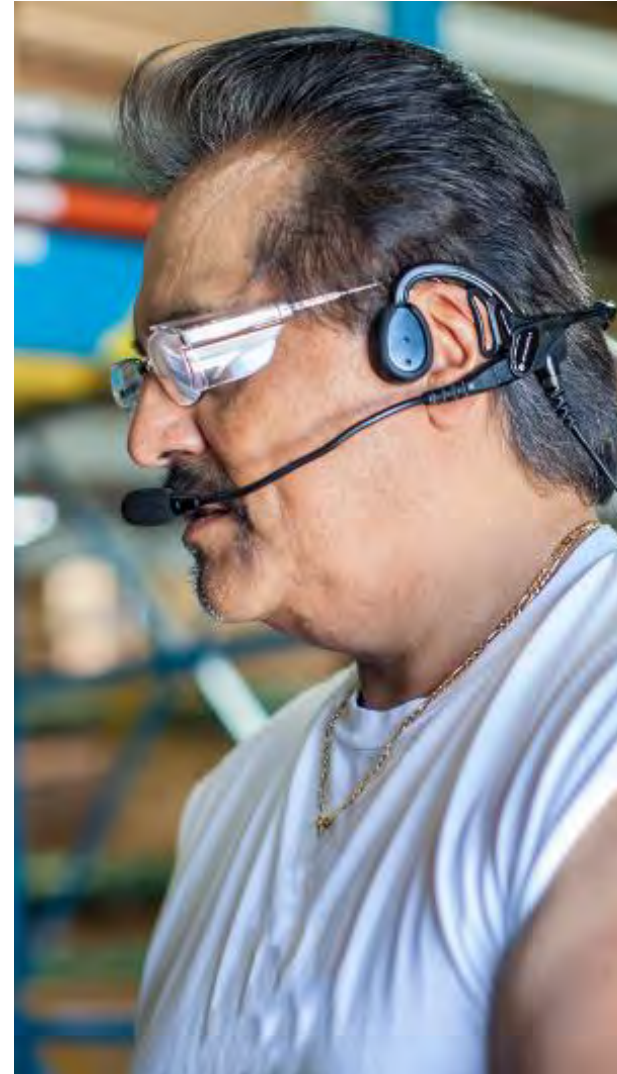


Summary:

- Voice activation allows your radio to be completely hands-free.

Detail:

- This feature allows your radio to start transmitting automatically as soon as it hears your voice. This is especially useful when you are operating machinery or driving a vehicle.
- The feature is designed to work with specific accessories that position the microphone close to your mouth.
- You should be aware that VOX will be activated by any voice, so if you are working in close proximity to another person, you may experience some inadvertent transmissions.
- If your radio is operating in a mode that delivers a Talk Permit Tone (TPT), you should start with a “trigger” word, then wait for the Talk Permit Tone before you speak.
- VOX is suspended whenever you press the PTT button on your radio, and can be resumed by pressing a pre-programmed button, changing the channel, or power-cycling the radio.



SL 7500

XPR 7550 IS

XPR 7500

XPR 7300

XPR 6580 IS

XPR 6500

XPR 6300

XPR 6100

XPR 5500

XPR 5300

XPR 4500

XPR 4300

XPR 3500

XPR 3300

XPR 2500

SL300

CM300d

CM200d

CP200d



BLUETOOTH AUDIO



Summary:

- Step away from your desk, step out of your driving seat, and still stay connected.

Detail:

- The Bluetooth Audio feature allows you to connect wireless audio accessories such as headsets, earpieces and push-to-talk buttons to your radio.
- You are free to roam up to 10 meters (30 feet) from your radio, but still stay connected to your colleagues.
- For users of mobile radios, you can step out of the cab, check the load of your truck, supervise the children in the back of the bus and deliver the package to the front door – all without losing connectivity.
- For users of portable radios, you can leave your radio on your desk, move freely around your office and still stay in touch.
- Bluetooth Audio also enables the use of specialised accessories, such as an in-ear earpiece for covert communications.



SL 7500

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XPR 6580 IS

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~~XPR 6100~~

XPR 5500

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XPR 4500

XPR 4300

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~~XPR 2500~~

~~SL300~~

~~CM300d~~

~~CM200d~~

~~CP200d~~

UNLEASHES YOU AND YOUR RADIO

V 2.0





SWITCH SPEAKER



Summary:

- You can switch audio from your headset to your radio's speaker without unplugging.

Detail:

- This feature allows you to direct the audio stream to either an attached accessory or to the radio speaker, without the need to detach the accessory.
- In some situations, you need to wear an earpiece or headset in the office, but take it off when you head outside.
- Previously, the radio's internal speaker would be muted whenever an audio accessory was attached to the radio.
- Now, with the Toggle Audio feature, you can send the audio in either direction without disconnecting the headset or earpiece. The feature is activated through the radio menu or by pressing a pre-programmed button.
- This feature was introduced in software release 2.4.



SL 7500

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~~XPR 5300~~

~~XPR 4500~~

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XPR 3500

XPR 3300

XPR 2500

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~~CP200d~~

YOUR AUDIO, WHEREVER YOU NEED IT

V 2.4



IMPRES™ AUDIO



Summary:

- Your radio works seamlessly with your accessories to ensure that every call is heard perfectly.

Detail:

- Your MOTOTRBO radio contains a digital signal processor (DSP) that fine-tunes the audio signal from the microphone, enhancing clarity and reducing background noise. IMPRES™ audio accessories communicate their own unique set of audio parameters to the radio's DSP, to further optimize the audio processing.
- IMPRES technology also optimizes Automatic Gain Control (AGC) to compensate for variability of input level. Maybe some of your users don't speak directly into the microphone while they are operating machinery; maybe some others have to shout over heavy background noise, maybe others work in an environment that requires them to speak quietly. The IMPRES audio AGC optimizes the signal level so all these users are heard at a similar volume.
- A compatible IMPRES audio accessory is required.



SL 7500

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XPR 5500

XPR 5300

XPR 4500

XPR 4300

XPR 3500

XPR 3300

~~XPR 2500~~

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~~CP200d~~

I HEAR YOU, HOWEVER YOU SPEAK

V 1.00



WINDPORTING



Summary:

- Your RSM minimizes wind noise, so you can communicate clearly in difficult weather.

Detail:

- Wherever you work – in howling wind, driving rain, and severe weather – Windporting helps you communicate effectively and helps listeners hear clearly.
- Windporting technology eliminates the booming and howling sounds of wind blowing across your lapel microphone or remote speaker microphone. It also prevents water from clogging the microphone for clearer transmissions.
- Windporting is only available on selected accessories.



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XPR 3500

XPR 3300

~~XPR 2500~~

~~SL300~~

~~CM300d~~

~~CM200d~~

~~CP200d~~

I HEAR YOU, NOT THE WIND

V 1.00





WINDPORTING



Summary:

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Detail:

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~~XPR 4300~~

XPR 3500

XPR 3300

~~XPR 2500~~

~~SL300~~

~~CM300d~~

~~CM200d~~

~~CP200d~~

I HEAR YOU, NOT THE WIND

V 1.00





SUGGESTED CONFIGURATIONS



The following chart can be used to configure MOTOTRBO audio features based on the ambient audio environment.

Ambient Environment	Noise Supp	AGC	Profile	Environ	Intelligent Audio	AF Supp	Trill Enh
Typical	Basic	ON	Default	As Desired	As Desired	OFF	OFF
High Noise	Enhanced	ON	Loud	As Desired	As Desired	OFF	OFF
Mixed Noise (High and Low)	Enhanced Auto	ON	Loud	As Desired	As Desired	OFF	OFF
Acoustic Feedback	As per Ambient Env.	ON	WorkGroup	As Desired	As Desired	ON	OFF

Notes:

- 1) Enhanced and Enhanced Auto Noise Suppression settings should not be used with the NNTN8382 or NNTN8383 RSMs
- 2) When acoustic feedback is present, configure the Noise Suppressor as per the ambient noise environment.
- 3) The Audio Environment and Intelligent Audio settings should be configured as per the user's personal preference.



VERSION HISTORY



1.0	J. Barrus	Initial Release	8-Feb-2016
1.1	J. Barrus	Corrected typos, added configuration matrix	19-Feb-2016

Please send feedback to James Barrus: James.Barrus@motorolasolutions.com



ADDITIONAL INFORMATION



NEW PROFESSIONAL & COMMERCIAL RADIO VIDEOS

**CONFIGURE, ENABLE
AND OPTIMIZE YOUR
RADIO FEATURES**

WATCH THE TRAINING VIDEOS



A selection of training videos have been produced to show you how to configure these features.

They are available on the Motorola Solutions YouTube channel:

http://www.youtube.com/playlist?list=PL-qcM_OQqRgggcuaNUdp68piyNla8HFTV



PRODUCT TRAINING



LEARN MORE ABOUT
**MOTOTRBO™ CERTIFICATION
TRAINING**

CHECK OUT THE DATA SHEETS FOR DETAILS
LISTED BELOW, UNDER RELATED RESOURCES



<http://www.motorolasolutions.com/US-EN/Training+Home/Certification+Program>