

R2.5 Enhanced Noise Suppressor & TX AGC Enhancements

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Compliments of:



MOTOROLA
SOLUTIONS

Radio Solutions
Channel Partner



Enhanced Noise Suppressor

- In high noise environments, normal noise suppression can distort speech intelligibility when the user's voice volume drops close to the 6 dB Signal-to-Noise Ratio (SNR) threshold.
- SINC monitors background noise levels and automatically adjusts the transparency of noise suppression as the noise level at the microphone increases close to threshold and improves audio quality and speech intelligibility.
- **Leverages the latest and most advanced audio processing technology for improved speech intelligibility in high noise environments.**
- **Predicts what clear voice would sound as if no background noise was present.**
- Configurable using MOTOTRBO CPS or through the radio menu: (configurable through the radio menu will be available in Connect Plus operation with the 2.6 firmware release)
- **Basic: Only legacy noise suppressor is enabled**
- **Enhanced: Legacy noise suppressor and Enhanced Noise Suppressor are enabled for use in constant noise environments**
- **Enhanced Auto: Legacy noise suppressor and Enhanced Noise Suppressor are enabled. Enhanced Auto Noise Suppressor automatically adjusts suppression levels when the user moves in and out of noisy areas**
- Operational on all MOTOTRBO Systems
- Subscriber license required (HKVN4373A)
- **Summary:**
- Enhances noise suppression and improves speech intelligibility in very high noise environments
- Available on MotoTRBO 2.0 Subscribers only and does not include the TRBO Lite product portfolio

CPS 12.X Noise Suppressor Options

The screenshot displays the 'General Settings' window of the CPS 12.X software. At the top, a blue header bar contains the text 'General Settings'. Below this, a row of navigation links includes 'Battery Saver', 'Alerts', 'Over-the-Air Programming', 'Persistent LRRP Requests', and 'Lone Worker'. The main settings area contains several controls: a 'Noise Suppressor' dropdown menu currently set to 'Disabled', a 'Trill Enhancement' dropdown menu with options 'Disabled', 'Basic', 'Enhanced', and 'Enhanced Auto', a 'Microp' label above a blue bar, a 'Mic Selection Rule' dropdown menu set to 'Default', and three checkboxes for 'Mic Distortion Control', 'Analog Mic AGC', and 'Digital Mic AGC', all of which are checked.

Setting	Value
Noise Suppressor	Disabled
Trill Enhancement	Disabled
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"/>

Additional Codeplug Setting:

AF Suppressor : 95dB Noise Environment=Disabled

50dB Noise Environment=Enabled

TX AGC Enhancement

- This enhancement is automatically added with the R2.5 firmware.
- The changes to the AGC are available in digital and analog modes of operation.
- The AGC changes will have no impact to the audio when the AGC is disabled.
- The configuration of the AGC will cause a slight decrease in the audio loudness. The impact to audio loudness will be 2dB – 3dB at most. This is expected.
- Additional effort is underway to provide the TX AGC enhancement to Legacy radios as well in a future MOL Firmware release.



SINC+ NOISE CANCELLATION



Single Input Noise Suppressor (SINC+) for Enhanced Noise Suppression

In high noise environments, normal noise suppression can distort speech intelligibility when the user's voice volume drops close to the 6 dB Signal-to-Noise Ratio (SNR) threshold. SINC+ is the latest and most advanced audio processing technology which automatically adjusts the transparency of noise suppression as the noise level increases close to threshold and improves audio quality and speech intelligibility.

SINC+ provides better noise suppression when combined with the existing noise suppressor. It offers enhanced noise suppression with a single microphone on the radio that would only be available with a dual microphone accessory.

SINC+ is configurable using MOTOTRBO CPS or through the Radio Menu. Choices are:

None: Noise suppressor is disabled

Basic: Only legacy noise suppressor is enabled

Enhance: Legacy noise suppressor and SINC+ are both enabled for use in constant noise environments

Enhance Auto: Legacy noise suppressor and SINC+ are enabled. SINC+ automatically adjusts suppression levels, when the user moves in and out of noisy areas.

HKVN4373 license is required to enable SINC+

Sample Audio Recordings

- **Includes:**

XPR7550 2.4 FW 50dB Ambient Noise Level - 

XPR7550 2.4 FW 95dB Ambient Noise Level - 

XPR7550 2.5 FW Basic Noise Suppressor 50dB Ambient Noise Level - 

XPR7550 2.5 FW Basic Noise Suppressor 95dB Ambient Noise Level - 

XPR7550 2.5 FW Disabled Noise Suppressor 50dB Ambient Noise Level - 

XPR7550 2.5 FW Disabled Noise Suppressor 95dB Ambient Noise Level - 

XPR7550 2.5 FW Enhanced Auto Noise Suppressor 50dB Ambient Noise Level - 

XPR7550 2.5 FW Enhanced Auto Noise Suppressor 95dB Ambient Noise Level - 

XPR7550 2.5 FW Enhanced Noise Suppressor 50dB Ambient Noise Level - 

XPR7550 2.5 FW Enhanced Noise Suppressor 95dB Ambient Noise Level - 



SINC+ NOISE CANCELLATION



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.
- SINC+ (enhanced Single-input Industrial Noise Cancellation) 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.
- SINC+ is very affordable, although not quite as effective as dedicated dual-microphone noise-cancellation accessories.
- This feature was introduced in software release 2.5. For each radio, you must purchase a license (HKVN4373) to use the feature.



SL 7500e
XPR 7500e
XPR 7300e
XPR 5500e
XPR 5300e
XPR 3500e
XPR 3300e

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

Direct Mode
Conventional
IP Site Connect
Capacity Plus
Capacity Max
Connect Plus

FLEXIBLE, AFFORDABLE NOISE CANCELLATION

NEW
FEATURE

V 2.51