

Technical Information Bulletin

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KPG-147NC Programming Software for KMC-51/52 speaker microphone

This Document covers the Setup and Programming of the KMC-51 /52 speaker microphone using KPG-147NC. In using this document you will be able to use the corresponding firmware and software to create a programming Radio Jig that you use to program the KMC-51/52 speaker microphone.

Required Items

1. Radio Jig- created from one of the following radios:
NX-200/300 – NEXEDGE Platform
2. Firmware – to create the Radio Jig - (Available for download from Online Support*)
NX-200_For_KMC-51_FIRM_SH01_REL00.hex

*Kenwood EMEA Online Support <https://emea.online.kenwood.com/>
3. KPG-147NC installed on computer - (Available on B2B Online support website with License ID)
4. KPG-36(A)(M)(U) programming cable
5. FPRO - (For loading Jig Firmware - found in root directory of KPG-95DG, 111, or 112)
6. Production Firmware (to revert Radio Jig to stock when done programming)
Note: if you have custom firmware make sure you have it prior to changing firmware so you may change your radio back to normal operation. Radios .dat file is not affected by this process.
7. KMC-51/52 Speaker microphone (KMC-51/52 to be programmed)




KMC-51M
(IP54/55 version)

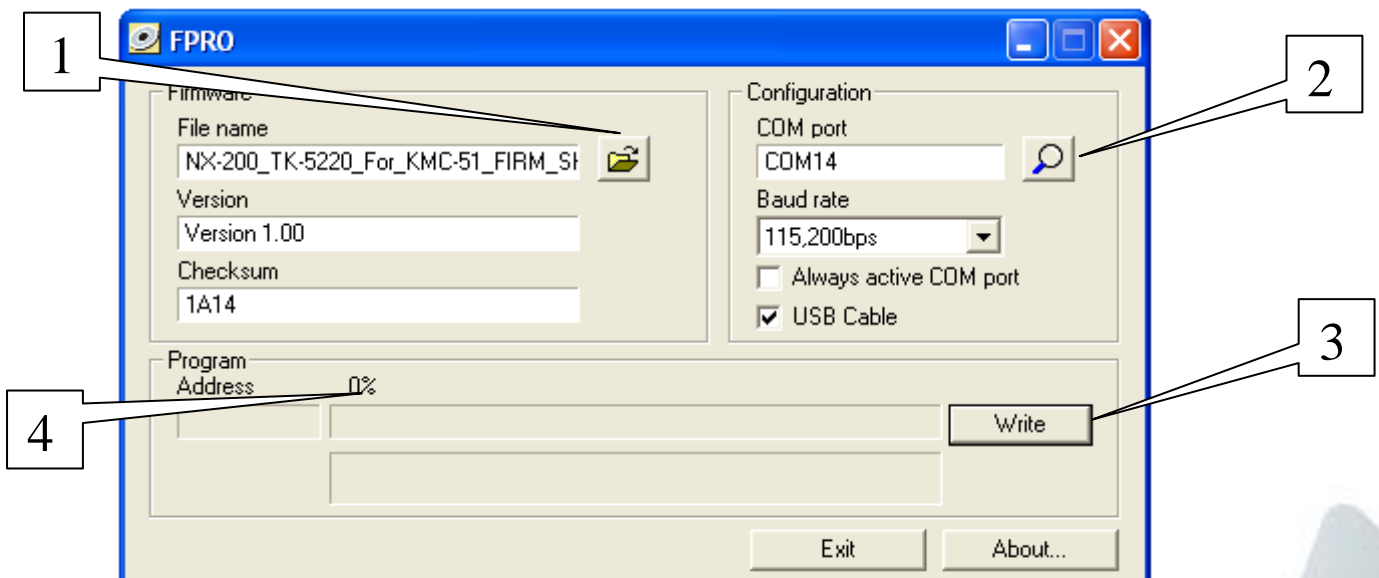


KMC-52W
(IP67 version)

Technical Information Bulletin

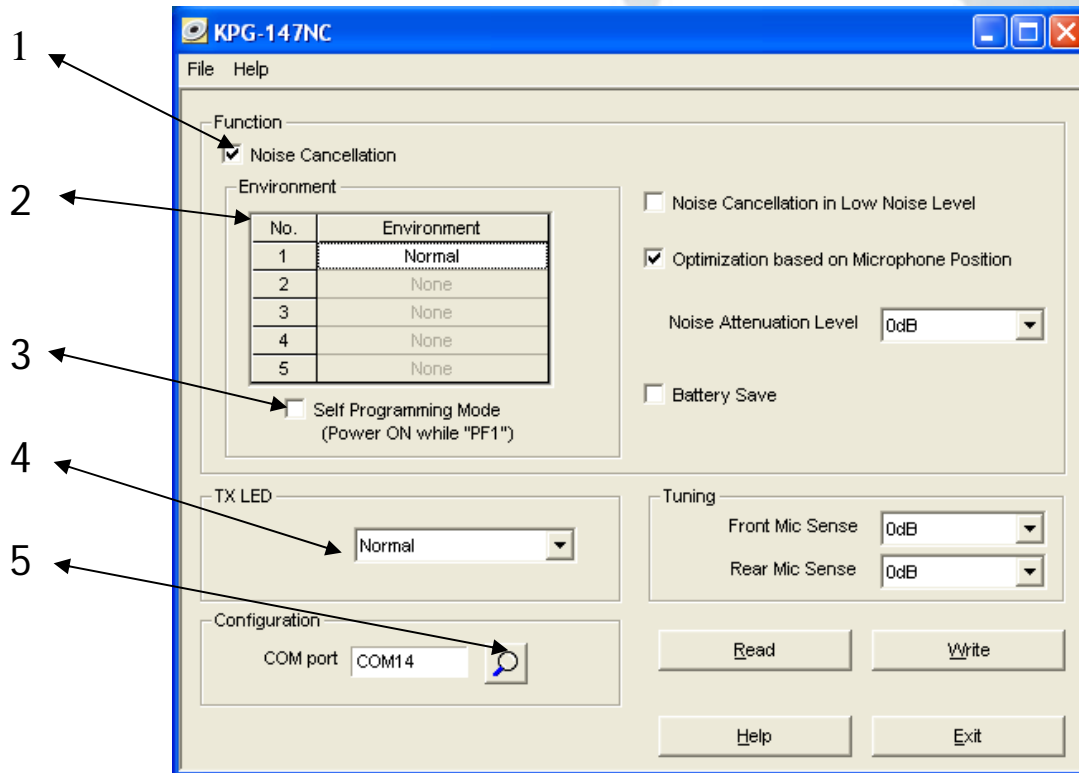
Instructions: Firmware programming


1. Open FPRO program and load Jig Firmware to FPRO
 Note: Verify version of firmware for our example we will use the following file.
 (NX-200_For_KMC-51_FIRM_SH01_REL00.hex) *1
2. Connect a KPG-36 programming cable to the Radio that will become your Jig (Jig Radio is NX-x00/x10 or TK-5x20 in this example)
3. Check the Comport *2
4. Press and hold "**Menu Key**"  on the radio to enter the firmware programming mode.
5. Click the "**Write**" button in FPRO *3 (Radio will display "**LOADING**" and Green LED will light.) FPRO Progress bar will advance to 100% *4
6. Wait for Radio to display the "**Check Sum 1A14**" and LED will turn Red.
7. Turn off radio and turn back on. (Quit FPRO till you need to revert back to previous Firmware.)
8. Once firmware has been written to the radio it will display "**PC TOOL MODE**" when power is turned to On
9. **Note:** Radio must be pre-programmed with Firmware Programming enabled.



Technical Information Bulletin

Instructions: KPG-147NC Programming settings



1. Noise Cancellation - Check box Enables the noise cancellation function. Unchecked Disables the noise cancellation function, works like a normal Lapel Mic.
2. Environment (Table) 1 to 5
 - a. Normal – Noise cancelation is effective in most environments
 - b. Siren Audible – Reduces or eliminates components of siren noise when detected
 - c. High Background Noise – for noises above 120dB
 - d. High-Frequency Noise – for noises that are above 2KHz in frequency
 - e. Low-Frequency Noise – For noises that are in a frequency range bellow 500Hz
3. Self Programming Mode – Enables the ability to choose the microphone DSP settings number based on the Environment table programming in the field. (explained on page 6)
4. TX LED (Drop down box) Normal - TX LED lights when PTT pressed. Voice recognition – LED lights when speaking in microphone.
5. Com Port click on  change programming COM port 1 to 20 (supports USB use)

Technical Information Bulletin

6. Noise Cancelation in Low Noise Level – Check Box Enabled - DSP Function use in low-noise conditions (could cause audio to be over processed) Disabled - does not enable DSP processing at lower levels.
7. Optimization based on Microphone Position – Check Box Enabled - Helps compensate if held away from mouth when talking. Disabled – no compensation Microphone must be held up to mouth when talking.
8. Noise Attenuation Level– Adjustment in dB -20 to +10 dB in 2 dB increments, Increases or decreases overall noise attenuation ability.
9. Battery Save – Check Box Enabled - adds battery saver for microphone power consumption (slows DSP response time) Disabled – Reduces overall battery life
10. Tuning (Level adjustments for Front & Rear Mic Sensitivity [see service manual])
11. Read (click to read from Jig Radio transfers mic data to KPG-147NC)
12. Write (click to Write to Jig Radio transfers mic data from KPG-147NC)

The screenshot shows the KPG-147NC software window. It has a menu bar with 'File' and 'Help'. The main area is divided into several sections:



- Function:** Contains a checked checkbox for 'Noise Cancellation'. Below it is an 'Environment' section with a table:

No.	Environment
1	Normal
2	None
3	None
4	None
5	None

 Below the table is an unchecked checkbox for 'Self Programming Mode (Power ON while "PF1")'.
- TX LED:** A dropdown menu currently set to 'Normal'.
- Configuration:** A 'COM port' dropdown set to 'COM14' with a search icon.
- Environment Settings:**
 - Unchecked checkbox: 'Noise Cancellation in Low Noise Level' (arrow 6)
 - Checked checkbox: 'Optimization based on Microphone Position' (arrow 7)
 - Dropdown: 'Noise Attenuation Level' set to '0dB' (arrow 8)
 - Unchecked checkbox: 'Battery Save' (arrow 9)
- Tuning:**
 - Dropdown: 'Front Mic Sense' set to '0dB' (arrow 10)
 - Dropdown: 'Rear Mic Sense' set to '0dB' (arrow 11)
- Buttons:** 'Read' (arrow 11), 'Write' (arrow 12), 'Help', and 'Exit'.

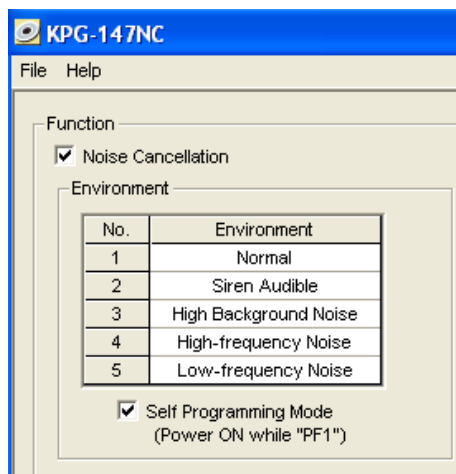
Technical Information Bulletin

Instructions: Writing Microphone

1. Connect the KPG-36 programming cable to the Jig Radio
2. Click on **"Write"** button in KPG-147NC you will get a Confirmation pop up window **"Is it OK to write data?"** Click on **"OK"**
3. A Progress Bar will pop up and the radio will display **"PROGRAM"** once writing is completed a pop up box will appear, Click **"OK"**
4. Turn off Jig Radio and disconnect KPG-36 cable and connect KMC-51/52 mic. Power on while holding Right Arrow Key 
5. Power on Jig Radio while holding Right Arrow Key  Jig Radio will Display **"MIC DATA WRITE"** press the mic PF1 Key (Orange Key). Radios display will change to **"WRITING"** when the Jig Radio has completed writing the display will indicate **"MIC DATA WRITE"** with the Jig Radios Red TX LED lit.
6. Disconnect KMC-51/52

Note: Jig Radio can write multiple times by changing microphone and pressing PF1 key twice while in **"MIC DATA WRITE"** mode.

Instructions: Configuration self programming



Environment settings position 1 to 5 can be selected from the pull down list once the microphone has been enabled for self programming mode. You can select the DSP mode environment by holding the Mic PF1 key and powering on the radio.

1. Press the Mic PF1 Key and the TX LED will blink the number of times the position the Mic is set for based on the environment table above.
2. Once you have selected the corresponding Environment setting press the PTT to confirm the selection.
3. **Note:** The different Environment selections are backed up in memory even when the radio is turned off.