

GMRS-210 + 3

UHF TWO-WAY RADIO

Programming Manual



maxon[®]
SYSTEMS INCORPORATED

GENERAL SPECIFICATIONS

Communication Methods:	Simplex; Repeater (Half Duplex)
Frequency Range:	462.5500 - 462.7250 MHz (Normal TX) 467.5500 - 467.7250 MHz (Repeater TX) 462.5500 - 462.7250 MHz (RX)
Number of Channels:	10
Transmit / Receive Frequency Spacing:	0 MHz / 5 MHz
Simplex / Repeater (Half Duplex)	25 kHz in 12.5 kHz steps
Channel Bandwidth:	7.2 Volt (600 MAH Ni-Cd Battery); 9 Volt (6 Alkaline Batteries); 10.8 Volt (600 MAH Ni-Cd Battery); 13.8 Volt Vehicle Adaptor
Power Source:	

RECEIVER SPECIFICATIONS

Receiver Sensitivity:	Below 0.35 uV (12 dB SINAD)
Selectivity:	Above 60 dB
Spurious Rejection:	Above 60 dB
Adjacent Channel Selectivity:	Above 60 dB
Hum and Noise:	Above 40 dB
Intermodulation:	Above 60 dB
Audio Output Power:	0.4 Watt
Audio Distortion:	Below 5% in standard power output
Audio Response Characteristics:	TIA 603 De-emphasis Curve
Receiver Frequency Range:	462.550 - 462.725 MHz
Frequency Stability:	5 PPM (-30° C to +60° C)
Antenna Impedance:	50 Ohms
Current Drain:	Below 55 mA (in Standby) Below 250 mA (standard power output) Below 20 mA (with power save)

TRANSMITTER SPECIFICATIONS

Transmitter Power Output:	2.0 Watt / 7.2 Volt; 3.0 Watt / 9.0 Volt; 4.0 Watt / 10.8 Volt; 5.0 Watt / 13.8 Volt
Adjacent Channel Power:	Below -70 dB
Spurious:	Below -60 dB
Harmonics:	Below -60 dB
FM Hum and Noise:	Below -40 dB (with TIA603 Filter)
Audio Distortion:	Below 5% in standard modulation
Audio Response:	TIA 603 Pre-emphasis Curve
Audio Modulation:	16K0FID, 16K0F3E
Transmitter Frequency Range:	462.5500 - 462.7250 MHz (Normal) 467.5500 - 467.7250 MHz (Repeater)
Frequency Stability:	5 PPM (-30° C to +60° C)
Antenna Impedance:	50 Ohms
Current Drain:	Below 1200 mA / 2.0 Watts / 7.2 Volts

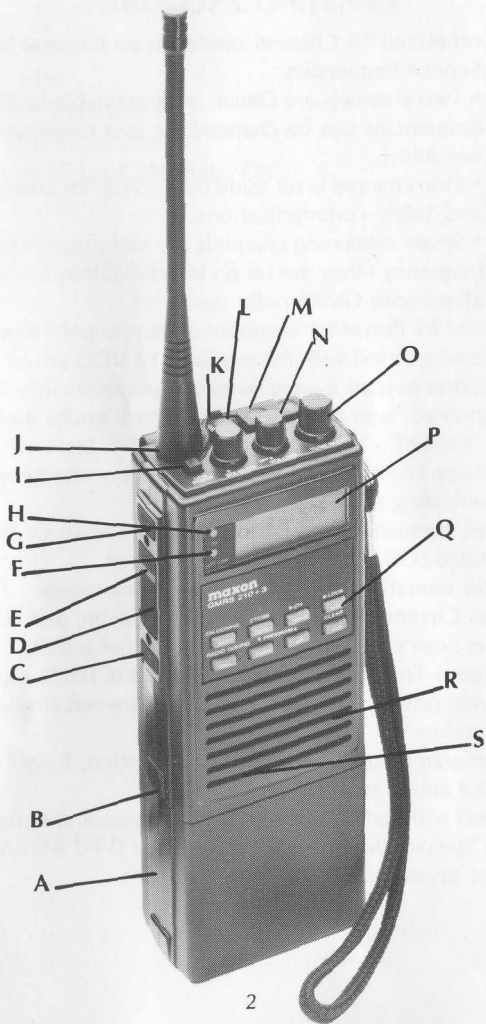
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GMRS-210 + 3 PERFORMANCE FEATURES

- PLL Synthesized 10 Channel operation on General Mobile Radio Service frequencies:
 - Two channels are Dealer programmable (radio frequencies can be changed for user communications versatility).
 - One channel is set aside by the FCC for Emergency and Safety communications.
 - Seven remaining channels are non-programmable for frequency - they are set on Interstitial frequencies for all-purpose GMRS radio use.
- 2 Watts of RF Power for exceptional transmitting range. Up to 5 Watts when used with the supplied 12 VDC power cord.
- Eight button keypad is used to select programmable features.
- Top mounted "user-friendly" radio control knobs for Squelch, Power "On/Off" - Volume, and Tune/M-CH. Uses a High-Low Power Switch to conserve radio battery energy when communicating short distances.
- Channel, frequency, and radio status are shown on the illuminated LCD Display.
- Repeater operation extends communication range.
- Features Channel Scan, Priority Channel Scan, and "Call" Channel Scan capability to monitor channel activity.
- Continuous Tone Coded Squelch System (CTCSS) capability to provide privacy in communications between similarly coded radios.
- User programmable Scan Delay Time Option, Busy Channel Lock-Out and Transmit Time-Out-Timer.
- Equipped with Jacks for external power use; and optional Maxon Speaker /Mic; or Voice operated / P-T-T Mini-VOX Headset accessories.

GMRS-210 +3 Call Outs



CONTROLS AND FUNCTIONS

- A. **Battery Pack:** Slide-on pack for powering the GMRS radio. A 600 MAH 2 Watt rechargeable Ni-Cad battery pack is included with your radio.
- B. **Battery Pack Release Button:** Used to detach the battery pack from the radio.
- C. **LCD Display Light Button (L):** Used to illuminate the LCD (Liquid Crystal Display).
- D. **Push-To-Talk Button (P-T-T):** When pressed, the radio goes into the transmission mode, and the red "TX" LED will illuminate.
- E. **Monitor Button (M):** Used to monitor channel activity.
- F. **Battery Low LED Indicator:** Glows red when the battery pack requires recharging or replacement.
- G. **Function Button (F):** Used with the keypad to access radio functions.
- H. **"TX" LED Indicator:** Glows red to signal the radio is transmitting.
- I. **High-Low Power Switch:** Used to switch radio's output to "high" or "low" power.
- J. **Antenna Jack:** Used to attach the "Rubber Duck" antenna.
- K. **External DC Power Jack:** Used to connect the 12 VDC power cord when using a vehicle's cigarette lighter receptacle.
- L. **Squelch Control Knob:** Used to eliminate background noise in the standby mode.
- M. **Accessory Jacks:** Used to plug in the optional Maxon Speaker / Microphone (WTA-10G); or Voice operated / P-T-T Mini-VOX Headset (WTA-13G) Accessories.
- N. **"On/Off"- Volume Control Knob:** Used to turn the power "On" and "Off" and control volume levels.

- O. Tune/M-CH Selection Knob:** Used to select the desired channel frequency and radio and channel configuration parameters.
- P. LCD Display:** Used to display the channel, frequency, and radio operating mode status.
- Q. Radio Keypad:** Used to access, program and operate the radio's performance features.
- R. Microphone:** Used to transmit voice signals.
- S. Speaker:** Used for audio output.
- T. Battery Charging Jack:** (Not shown). Located on back of radio's battery pack. Used to charge Ni-Cad battery pack with supplied AC/DC Battery Charger.
- U. Battery Charging LED Indicator:** (Not shown). Located next to Battery Charging Jack. Indicates charge is occurring.
- V. Belt Clip:** (Not shown). Used to attach the radio to a belt or pocket.

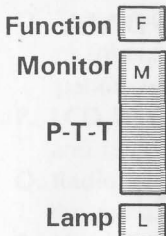
LCD (LIQUID CRYSTAL DISPLAY) DATA



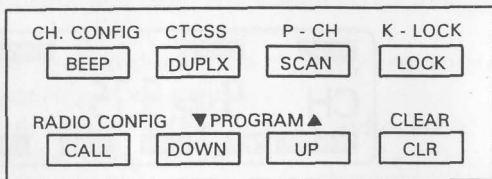
Icon(s) will appear on the LCD display to identify certain operating modes of the radio. See the "Special Programming" Section of this manual.

Following is a description of each icon:

BUSY	Activity on selected channel
CTCSS	CTCSS Tone is active
SIMPLEX	"Normal" (non-Repeater) mode
CH9	Channel 9 at 462.575 MHz
TONE TX	CTCSS Tone active in "TX" only
TONE TX/RX	CTCSS Tone active in "TX"&"RX"
PROG	"Programming" mode
SCAN	"Scan" mode
LOCK	"Channel Lockout" mode
LOCK (Flashing)	"Keypad Lock" mode



KEYPAD LAYOUT



PRIMARY KEY FUNCTIONS

(BEEP)	Beep Enable / Disable
(DUPLX)	Repeater / Normal Mode
(SCAN)	Scan Start / Stop
(LOCK)	Channel Lockout
(CALL)	Call Channel Selector
(DOWN) and (UP)	Selects Channels
(CLR)	"Clear" Function

SECONDARY FUNCTIONS

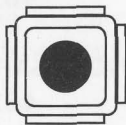
The (F) Function button is used in conjunction with the keypad to access Secondary functions.

(F + BEEP)	Channel Configuration Mode
(F + DUPLX)	CTCSS Enable / Disable
(F + SCAN)	Priority Channel Selection
(F + LOCK)	Keypad Lock / Unlock
(F + CALL)	Radio Configuration Mode
(F + CLR)	"Clear" Function
(DOWN) and (UP)	Toggles programming functions in the Channel and Radio Configuration modes

PROGRAMMING

To program Channel 9 and Channel 10 on the Maxon GMRS 210+3 UHF Two-Way Radio, you must:

1. Using the radio's On-Off / Volume control, turn the radio power "Off".
2. Remove the radio's back cover.
3. Press the "tack switch" (located on left side of the RF board) and turn the power "On".



4. After 8-10 seconds, the following will be displayed on the radio's LCD:



Display shows the Default frequency in Channel 9.

5. Refer to the Channel Frequency Chart that follows.
To change the frequency setting, turn the Tune / M-CH Selector Control knob clockwise. The LCD will show the frequency selection.

GMRS-210 + 3 CHANNEL FREQUENCY CHART

INTERSTITIAL CHANNEL FREQUENCIES

CH1	462.5625 MHz
CH2	462.5875 MHz
CH3	462.6125 MHz
CH4	462.6375 MHz
CH5	462.6625 MHz
CH6	462.6875 MHz
CH7	462.7125 MHz

FCC ASSIGNED EMERGENCY / SAFETY

CH8	462.675 MHz
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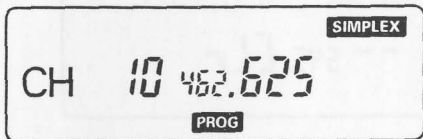
CONVENTIONAL CHANNEL FREQUENCIES

CH9*	462.575 MHz
CH10*	462.625 MHz

* Any of the following frequencies can be programmed by a radio communications dealer:

462.550 MHz	462.575 MHz
462.600 MHz	462.625 MHz
462.650 MHz	462.675 MHz
462.700 MHz	462.725 MHz

Once you have selected a frequency for Channel 9, press the UP key on the radio keypad to show the following:



Display shows the Default frequency in Channel 10

1. Refer to the Channel Frequency Chart. To change the frequency setting, turn the Tune / M-CH Selector Control knob clockwise. The LCD will show the frequency selection.
2. Verify the frequencies selected for Channel 9 and Channel 10 by using the DOWN or UP keys.

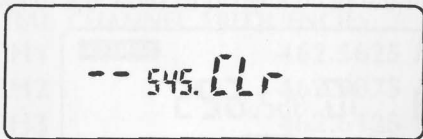
To store the selected frequencies into the radio's memory, press and hold the F (Function) button on the side of the radio, then press the CLR key. The radio will revert to the normal mode. NOTE: Pressing the P-T-T button will also store the selected frequencies.

SYSTEM CLEAR (SOFT RESET)

System Clear will reset all parameters to the "default" setting (including Radio and Channel Configuration*, "Call" Channel*, and Priority Channels*).

1. Turn the radio power "Off".
2. Press and hold the CALL and CLR buttons simultaneously and turn the radio power "On" again.

3. After 5-8 seconds, the display will show:



4. Press the P-T-T button to reset all parameters to factory "default".

*** Please reference the GMRS 210+3 Owner's Manual for full details on these user-programmable functions and modes.**

***Thank you for choosing
Maxon Systems, Inc.***

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