



## MXT115P Mobile GMRS Transceiver User Interface Description

### Revision History

<u>Version</u>	<u>Description</u>	<u>Date</u>	<u>Author</u>
V0	Initial	1-30-2024	RF
V1	Updated mech design	3/6/2024	RF

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## MXT115P Controls



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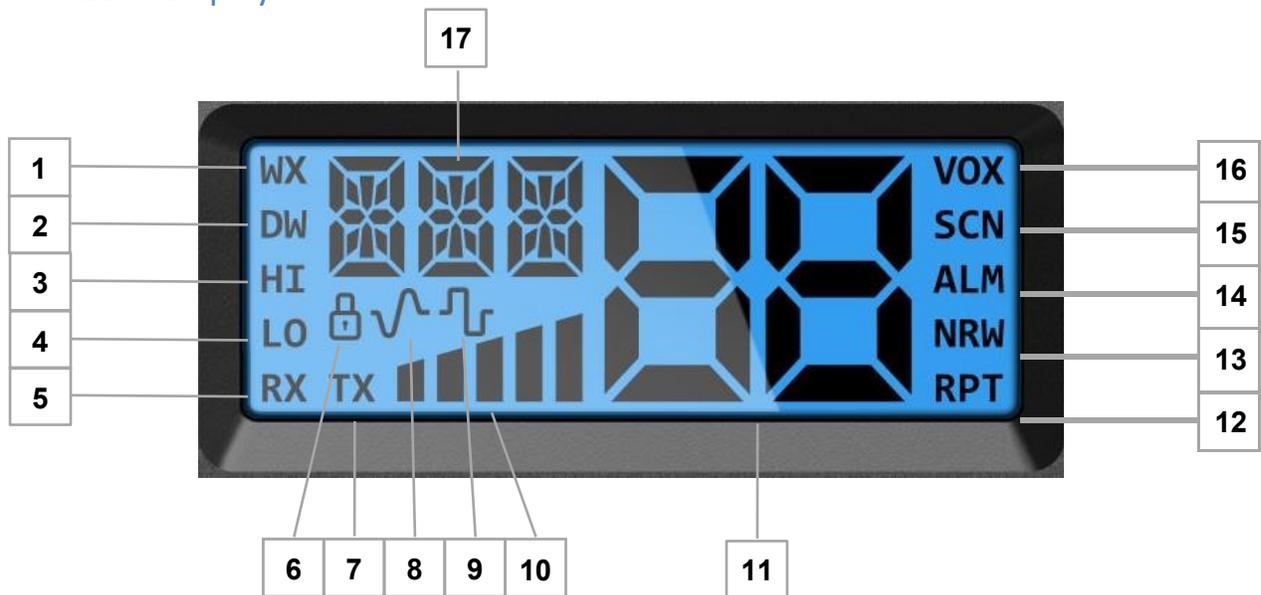
Callout	Use	Button Label	Short Press Function	Long Press Function	Other Function
1	Mic jack				
2	Menu and PA button	MENU PA	Menu selection	Toggle PA/GMRS mode	
3	Weather and monitor button	WX MON	Toggle between weather and GMRS modes	Toggle MON on/off in GMRS mode. Toggle WX alert on/off in WX mode	
4	Call and lock button	CALL LOCK	Transmit call alert tone	Toggle keypad lock	
5	Dual watch button	DW	Toggle dual watch on/off	Assign current channel selection as watch channel	
6	Scan button	SCAN	Toggle scan on/off	Toggle channel in/out scan list	
7	Power/volume knob				Off/on/volume
8	Display				
9	USB-C				
MICROPHONE					
10	Push to talk				
11	ANC/TX indicator				Blue = ANC on White = ANC off Red = Transmit
12	Channel down	▼	Channel down/ Menu setting dn	Scroll channel down	
13	Automatic noise cancellation button	ANC	Menu selection	Toggle ANC on/off	
14	Channel up	▲	Channel up/ Menu setting up	Scroll channel up	

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## MXT115P Display



Callout	Indication	Use
1	WX	Weather mode indicator, blinks when weather alert detection enabled
2	DW	Dual watch mode indicator, blinks when dual watch enabled
3	HI	High power indicator
4	LO	Low power indicator
5	RX	Receive indicator
6	(padlock)	Keypad lock indicator
7	TX	Transmit indicator
8	(sine wave)	CTCSS indicator
9	(square wave)	DCS indicator
10	(bar graph)	RX and TX signal strength indicator
11	01-22, 01-10, PA	Channel number
12	RPT	Repeater channel indicator
13	NRW	Narrow bandwidth indicator
14	ALM	Weather alarm indicator, flashing when weather alert detected
15	SCN	Scan indicator, blinks when scan enabled
16	VOX	VOX indicator, on when VOX level is selected
17	01-50, 001-104,	Menu/Privacy code selection indicator, privacy code normally displayed

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## Operation

Many of the operational buttons have a short and long press function based on a two second timer. If the button is pressed then released in less than two seconds, the short press function is performed after the button is released. If the button is pressed for longer than two seconds, the long press function is performed after the two second time elapses.

### Power On/Off

Rotate the Power/Volume knob clockwise past the detent to turn the radio on. Rotate the Power/Volume knob fully counterclockwise past the detent to turn the radio off.

### Volume Control

Rotate the Power/Volume knob clockwise to increase the volume and counterclockwise to decrease the volume.

### Channel Selection

Press the ▼ button to decrement the channel selection and the ▲ button to increment the channel selection.

Long press the ▼ or ▲ button to rapidly scroll the channel selection.

### Transmit Mode

Press and hold PTT to initiate transmit mode. While holding PTT, speak clearly in a normal voice with the microphone positioned 1 to 2 inches from your mouth. Release PTT when finished speaking to return to standby or receive mode. If PTT is pressed while in weather mode the radio will switch to GMRS mode.

### MENU Button

Press the MENU button to access the first menu selection. Press the MENU button again to step to the next menu selection. If no button is pressed for 10 seconds, the radio will exit the menu function.

Long press the MENU button to switch from GMRS mode to PA mode. Long press the MENU button again to switch back to GMRS mode.

### WX Button

Press the WX button to toggle between GMRS mode and Weather mode.

While in weather mode, long press the WX button to toggle weather alert detection on/off. The WX indicator will flash when the weather alert channel is selected and while the radio is in GMRS mode with weather alert detection enabled. When a weather alert is detected the ALM indicator will flash, and an eight second alarm tone will sound. The radio will then automatically switch to the weather mode. The flashing ALM indicator and WX mode will continue until a button is pressed and the mode is changed, respectively.

While in GMRS mode, long press the WX button to toggle Monitor mode on/off. While Monitor mode is enabled, noise squelch will be set to minimum and any CTCSS/DCS selection for the channel will be

defeated. The radio will display <sup>MEN</sup> 0 1 (01 = selected operational channel number) while monitor mode is enabled.

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### CALL Button

While in GMRS mode, press the CALL button to transmit a call alert tone. The call alert tone can be changed or selected as off using the call alert, CA, menu function.

Long press the CALL button to toggle the keypad lock function off/on. When the keypad lock is toggled and a locked button is pressed. The keypad lock indicator (padlock) will display while the keypad lock function is on.

### DW Button

Press the DW button to initiate dual watch mode, which will monitor the currently selected operational channel and the user selected watch channel for activity.

To configure the dual watch function, start with DW disabled. First select the desired watch channel, then long press the DW button to assign the selected channel as the watch channel. The display will show the DW indicator while the user selected watch channel is displayed. The user then proceeds to select the normal operational channel, and then press the DW button to initiate dual watch mode. The radio display will alternate between the selected operational channel and the user selected watch channel to check for activity on either and blink the DW indicator while dual watch mode is active. If activity is detected on either channel, the radio will stop on that channel for the duration of the reception plus a 5 second hold time to allow the user to reply. If PTT is pressed while dual watch mode is enabled:

- If the radio was monitoring the channels for activity, the radio will transmit on the selected operational channel.
- If the radio was receiving, or during the hold time following receive or transmit, the radio will transmit on the channel it was receiving/holding on.

The radio will resume dual watch monitoring 5 seconds after PTT is released unless another signal is received on the channel. While the radio is in dual watch mode, press the DW button to turn dual watch off and exit to the selected operational channel.

While the radio is in dual watch mode, press the ▼ or ▲ button to toggle the default transmit channel between the selected operational channel and the user selected watch channel. The display will briefly

show  $\overline{DWT}$ 

0	1
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 (01 = selected operational channel number) or  $\overline{DWT}$ 

0	2
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 (02 = user selected watch channel number) to indicate the default transmit channel.

### SCAN Button

Press the SCAN button to initiate GMRS scan mode or Weather scan mode. The SCN indicator will blink while scan mode is active. The radio will scan through the channels in the GMRS scan list or the Weather channel list until it finds a channel with a signal. The radio will stop on that channel for the duration of the reception plus a 5 second hold time to allow the user to reply. If PTT is pressed while GMRS scan mode is on:

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- If the radio was scanning, the radio will transmit on the channel selected when scan was initiated.
- If the radio was receiving, or during the hold time following receive or transmit, the radio will transmit on the channel it was receiving/holding on.

The radio will resume scanning 5 seconds after PTT is released, unless another signal is received on the channel. While the radio is in scan mode, press the SCAN button to turn channel scanning off and:

- If the radio was scanning, exit to the channel selected when scan was initiated.
- If the radio was receiving, or during the hold time following receive or transmit, exit to the channel the radio was receiving/holding on.

While the radio is in scan mode, press the ▼ or ▲ button to resume scanning from the next channel up or down in the scan list.

While in GMRS standby mode, long press the SCAN button to toggle the currently selected GMRS channel in or out of the scan list.

## Menu Operation

Press the MENU button to access the first menu selection. Press the MENU button again to step to the next menu selection. If no button is pressed for 10 seconds, the radio will exit the menu function.

### CTCSS/DCS (Privacy Tone)

The direct channels (without repeater offset) have a single CTCSS/DCS selection per channel, the PT menu selection, which is applied to both transmit and receive. The repeater channels (with repeater offset) have separate selections for transmit and receive CTCSS/DCS, the TXC and RXC menu selections.

#### Privacy Tone (CTCSS/DCS for direct channels)

On direct channels, repeatedly press the MENU button until the PT menu selection is displayed. Use the

▼ or ▲ button to select between  $PT_{OFF}$  or  $PT_{CT}$  or  $PT_{DC}$ , then press the MENU button to confirm

the CTCSS/DCS type. Use the ▼ or ▲ button choose the CTCSS code number,  $01$  -  $50$ , or DCS code

number,  $001$  -  $104$ , then press the MENU button again to save the setting and move to the next

menu selection or press PTT to save the setting and exit the menu function.

#### Transmit Privacy Code (Transmit CTCSS/DCS for repeater channels)

On repeater channels, repeatedly press the MENU button until the TXC menu selection is displayed. Use

the ▼ or ▲ button to select between  $TXE_{OFF}$  or  $TXE_{CT}$  or  $TXE_{DC}$ , then press the MENU button to

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confirm the CTCSS/DCS type. Use the ▼ or ▲ button choose the CTCSS code number, 71 - 50, or

DCS code number, 001 - 104, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function.

#### Receive Privacy Code (Receive CTCSS/DCS for repeater channels)

On repeater channels, repeatedly press the MENU button until the RXC menu selection is displayed. Use the ▼ or ▲ button to select between RXC<sub>OF</sub> or RXC<sub>Ct</sub> or RXC<sub>dC</sub>, then press the MENU button to

confirm the CTCSS/DCS type. Use the ▼ or ▲ button choose the CTCSS code number, 71 - 50, or

DCS code number, 001 - 104, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function.

#### Transmit Power

On channels where the power level can be changed, repeatedly press the MENU button until the PWR menu selection is displayed. Use the ▼ or ▲ button to toggle between PWR<sub>HI</sub> or PWR<sub>LO</sub>, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function. When transmit power is selected as low, the LO indicator will be displayed. When transmit power is selected as high, the HI indicator will be displayed. FCC regulations limit power on channels 1-7, 23-26, 31-33, 42-45 and 50 to five Watts, so the LO indicator will be displayed for these channels. FCC regulations prohibit mobile radios from transmitting on channels 8-14 and 34-37, so neither LO or HI indicators will be displayed for these channels.

#### Squelch Threshold

Repeatedly press the MENU button until the SQ menu selection is displayed. Use the ▼ or ▲ button to select between SQ<sub>OF</sub> or SQ 01-09, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function. Lower levels will allow reception of weaker noisier signals. Higher levels will mute weaker signals and only allow stronger signals to be heard.

#### Roger Beep

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Repeatedly press the MENU button until the RB menu selection is displayed. Use the ▼ or ▲ button to toggle between RB OFF or RB ON, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function.

#### Call Alert

Repeatedly press the MENU button until the CA menu selection is displayed. Use the ▼ or ▲ button to select between CA OFF or CA 01-05, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function. Selecting CA will disable the call alert function.

#### Keypad Beep

Repeatedly press the MENU button until the BP menu selection is displayed. Use the ▼ or ▲ button to toggle between BP OFF or BP ON, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function.

#### Repeater Channels

Repeatedly press the MENU button until the RPT menu selection is displayed. Use the ▼ or ▲ button to toggle between RPT OFF or RPT ON, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function. When the repeater selection is on eight additional channels will be added to the channel list, which display as 15 RPT – 22 RPT

#### Display Backlight Color

Repeatedly press the MENU button until the COL menu selection is displayed. Use the ▼ or ▲ button to select between COL 01-07 (white, blue, green, red, cyan, purple, or yellow color selections), then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function.

#### Display Backlight Brightness

Repeatedly press the MENU button until the DIM menu selection is displayed. Use the ▼ or ▲ button to select between DIM OFF, DIM 01 (dim), DIM 02 (medium) or DIM 03 (bright), then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function.

#### Narrow Channel Bandwidth

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Repeatedly press the MENU button until the NRW menu selection is displayed. Use the ▼ or ▲ button to toggle between NRW<sub>OFF</sub> or NRW<sub>ON</sub>, then press the MENU button again to save the setting and move to the next menu selection or press PTT to save the setting and exit the menu function. The NRW indicator will display when narrow channel bandwidth is selected for the channel.

#### MIC GAIN

Different usage environment needs different microphone sensitivity. The radio has adjustable microphone sensitivity.

- Short press the MENU button in standby mode until the Mic Gain (MIC) menu is displayed;
- Set the microphone gain level (01-03, of which level 03 has the highest microphone gain) by the CH keys on the hand microphone;
- Short press the MENU button to save the settings and enter the next function menu or press PTT button to save the settings and exit the menu.

#### Vox

Repeatedly press the MENU button until the VOX menu selection is displayed. Use the ▼ or ▲ button to select between VOX<sub>OFF</sub> or VOX<sub>01-04</sub>, then press the MENU button again to save the setting and to the next menu selection or press PTT to save the setting and exit the menu function. The VOX indicator will display when a VOX level is selected. Level 01 is the most sensitive position, requiring the lowest level audio for transmit activation.

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## GMRS Channel List

CH	Frequency MHz	CH	Frequency MHz
01	462.5625	01	462.5500
02	462.5875	02	462.5750
03	462.6125	03	462.6000
04	462.6375	04	462.6250
05	462.6625	05	462.6500
06	462.6875	06	462.6750
07	462.7125	07	462.7000
08		08	462.7250

## GMRS Repeater Channel List

CH	RX Frequency MHz	TX Frequency MHz
15RPT	462.550	467.550
16RPT	462.575	467.575
17RPT	462.600	467.600
18RPT	462.625	467.625
19RPT	462.650	467.650
20RPT	462.675	467.675
21RPT	462.700	467.700
22RPT	462.725	467.725

## Weather Channel List

CH	Frequency MHz	CH	Frequency MHz
1	162.550	6	162.500
2	162.400	7	162.525
3	162.475	8	161.650
4	162.425	9	161.775
5	162.450	10	163.275

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## CTCSS Frequency List

CTCSS Number	Frequency Hz						
1	67.0	14	107.2	27	167.9	40	159.8
2	71.9	15	110.9	28	173.8	41	165.5
3	74.4	16	114.8	29	179.9	42	171.3
4	77.0	17	118.8	30	186.2	43	177.3
5	79.7	18	123.0	31	192.8	44	183.5
6	82.5	19	127.3	32	203.5	45	189.9
7	85.4	20	131.8	33	210.7	46	196.6
8	88.5	21	136.5	34	218.1	47	199.5
9	91.5	22	141.3	35	225.7	48	206.5
10	94.8	23	146.2	36	233.6	49	229.1
11	97.4	24	151.4	37	241.8	50	254.1
12	100.0	25	156.7	38	250.3		
13	103.5	26	162.2	39	69.3		

## DCS Code List

CDCSS Number	Octal Code						
1	023	27	165	53	413	79	731
2	025	28	172	54	423	80	732
3	026	29	174	55	431	81	734
4	031	30	205	56	432	82	743
5	032	31	223	57	445	83	754
6	043	32	226	58	464	84	036
7	047	33	243	59	465	85	053
8	051	34	244	60	466	86	122
9	054	35	245	61	503	87	145
10	065	36	251	62	506	88	212
11	071	37	261	63	516	89	225
12	072	38	263	64	532	90	246
13	073	39	265	65	546	91	252
14	074	40	271	66	565	92	255
15	114	41	306	67	606	93	266
16	115	42	311	68	612	94	274
17	116	43	315	69	624	95	325
18	125	44	331	70	627	96	332
19	131	45	343	71	631	97	356
20	132	46	346	72	632	98	446
21	134	47	351	73	654	99	452
22	143	48	364	74	662	100	454
23	152	49	365	75	664	101	455
24	155	50	371	76	703	102	462
25	156	51	411	77	712	103	523
26	162	52	412	78	723	104	526

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## Factory Default Settings

Press and hold PTT and WX while switching the radio on to restore the factory default settings.

CH	CH1
PA	OFF
MODE	GMRS
WX (alert)	OFF
LOCK	OFF
SCAN	OFF
CTCSS/DCS (1-22)	OFF
CTCSS/DCS (15RPT-22RPT)	OFF/OFF
CTCSS/DCS (23-50)	Per Table
PWR (1-7)	LO
PWR (8-14)	No TX (HI and LO both off?)
PWR (15-22)	HI
PWR (15RPT-22RPT)	HI
PWR (23-50)	Per Table
SQ	04
RB	OFF
CALL	01
BP	ON
RPT	OFF
COL	02 (blue)
DIM	03 (bright)
NRW (1-50)	ON
NRW (15RPT-22RPT)	OFF
VOX	OFF
BT	OFF

462 MHz Main Channels(12.5kHz)	40.93dBm
462 MHz Main Channels(25kHz)	40.93dBm
462 MHz interstitial channels(12.5kHz)	36.68 dBm
462 MHz interstitial channels(25kHz)	36.68dBm
467 MHz main channels(12.5kHz)	41.08 dBm
467 MHz main channels(25kHz)	41.08 dBm

TX/RX: 462.5500-462.7250MHz (462MHz main channels)

462.5625-462.7125MHz (462MHz interstitial channels)

467.5500-467.7250MHz (467MHz main channels)

Company Name: Midland Radio Corporation

Address:5900 Parretta Drive, Kansas City, Missouri, United States

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### **FCC Statement**

Any Changes expressly or modifications not approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference,

and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Verification of harmful interference by this equipment to radio or television reception can be determined by turning it off and then on.

The user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna. Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a different circuit to that of the receiver's outlet.
- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

### **§ 95.1743 Minor GMRS operators.**

Operators under the age of 18 will not be held personally responsible, pursuant to § 95.343, for improper operation of a GMRS repeater or base station. The holder of the individual license under which the minor operates is solely responsible for any improper operation that occurs while an individual under the age of 18 is operating the station

### **Warnins:**

The Radio is pre-configured with 8 GMRS repeater channels: 467.5500, 467.5750, 467.6000, 467.6250, 467.6500, 467.6750, 467.7000, and 467.7250 MHz, device that is used to increase the range of two way radios.

Repeaters will receive a transmission on one frequency and simultaneously rebroadcast that transmission on a different frequency.

Repeaters are often set up in a fixed location and connected to an antenna that is mounted at a higher elevation to provide better range than is normally available with radio-to-radio (simplex) communications. Using GMRS repeaters can significantly increase the range of your radio, but just tuning to one of the repeater channels isn't necessarily going to work. You first have to be sure there is a repeater listening on that channel's frequency, and you have to be within range of that repeater. In basic terms, a repeater is a It is important to keep in mind that a GMRS repeater is not necessarily intended for public use. They are owned by individuals and are sometimes intended for private use or require permission to use. Before connecting to a GMRS repeater, be sure that you have permission or that the owner is fine with public use. The description on the my GMRS website usually indicates if permission is required and provides a way to get in touch with the owner.

### **FCC Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .

This equipment should be installed and operated with minimum distance 55cm between the radiator& your body.

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## Antenna



Accord to that antenna length in different regions, only below type antenna was authorized use in the product.

Antenna Model: MXAT13

Antenna Type: Monopole

Antenna Gain: 2.15 dBi

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