



PM200 / PM250

Operation Manual

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Introduction

Purpose of Application Notes

The purpose of this document is to outline the functional features of the PM200/250 mobile radio. This document will be used to navigate and set-up all of the programmable features.

Product Description

The PM200/250 is a fully featured mobile radio that has been developed for the European market. The PM200/250 is a DTMF, Selcall and SMS mobile radio with a 208-channel capability. The radio is programmable for output power, channel spacing, and a range of other features.

Programming

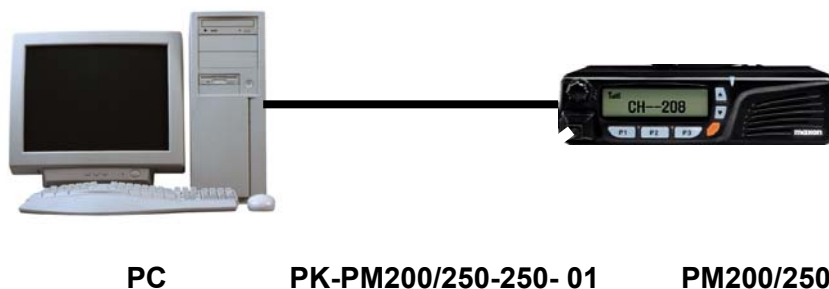
The programming kit required is the PR-PM200/250-01

Kit consists of PM200/250 programming software

Programming lead PK-PM200/250-01

To place the PM200/250 into program mode, connect PK-PM200/250-01 programming lead to the PC and the PM200/250 via the 15way High density D-type connector (please see rear panel layout Fig. 4). Switch the PM200/250 on with the programming lead connected. If the PC-program enable port is in active status, the CPU on the radio enters programming Mode. The/250 should now display “**ProGrAm**”

Programming Set-up (Fig. 1)



Reading

The PM200/250 assumes the PC is ready to receive data. When serial Commands are sent though the interface boards, PM200/250 will transmit the data. During this sequence, the Red LED will flash. In PC program Reading Mode, the LCD displays **"Prog-r"**.

Writing

The PM200/250 assumes the PC is ready to transmit data. When serial Commands are sent though the interface boards the PC then starts the transmission of data. During this sequence, the green LED will flash. In the PC program Writing Mode, the LCD displays **"Prog-w"**.

Cloning

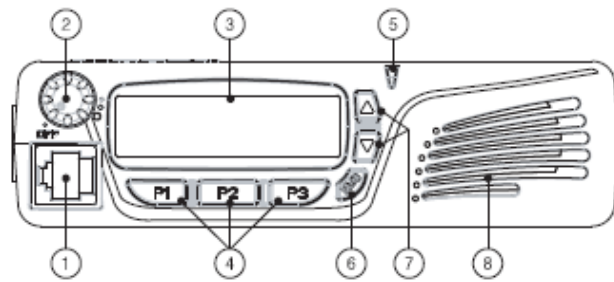
Cloning is a method of programming another radio with the same profile without using a personal computer or laptop. The master radio is the radio with the desired frequencies the slave radio is the radio to be programmed.

- 1.) Press and hold ▲ button on power up. In this mode, radio will display **"MASTER"**. The radio is now ready to transmit programming file.
- 2.) Press and hold the ▼ button on power up. In this mode, radio will display **"SLAVE"** with green led blinking.
- 3.) Connect the cloning cable.
- 4.) Press the master radio ▼ button.
- 5.) After cloning, the slave radio will display **"TURN OFF"** message, and the master radio displays " MASTER" message on LCD. Turn off both radios.

Cloning set-up (Fig.2)

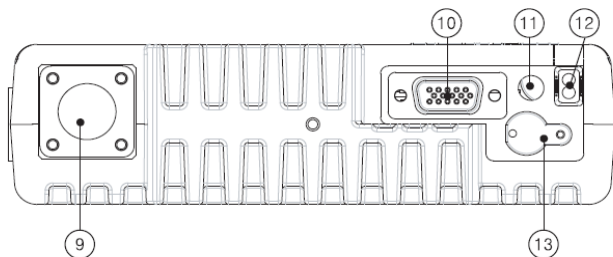


Front panel layout (Fig.3)



- 1.) RJ45 Microphone Socket
- 2.) On/Off Volume Control
- 3.) Alpha Numeric LCD
- 4.) **(P1-P3)** Programmable Keys
- 5.) Status LED
- 6.) Emergency Key (Orange)
- 7.) Up/Down Channel/Menu Keys
- 8.) Internal Speaker

Rear panel layout (Fig. 4)



- 9.) BNC Antenna Connector
- 10.) 15 way D-type (programming/Data)
- 11.) GPS antenna port (Optional)
- 12.) DC power lead
- 13.) Accessory Socket

Basic programmable feature Operation

Function Keys

There are six push-buttons on the face of the PM200/250; Up / Down (▼ ▲), P1, P2, P3 and Emergency, below are the default programming settings.

Up/Down Keys (▼ ▲)

These buttons allow the operator to scroll up/down through the available channels. A short press-and-release of this button will increase/decrease the channel number. A press-and-hold will scroll through the channel numbers.

Select pre-programmed Selcall mode via (P1-P3). Use ▼ ▲ to select the correct selcall function.

Select pre-programmed DTMF mode via (P1-P3). Use ▼ ▲ to select the correct DTMF number.

Select pre-programmed SMS mode via (P1-P3). Use ▼ ▲ to select the correct SMS number.

Programmable Function Keys

The following functions can be assigned to [P1] [P2] [P3] programmable function keys. These are located on the bottom left of the radio. Each button has a short and long press giving a total of six button assignments.

Power key

Press to toggle the transmit Output power between High and Low.

Each channel can be programmed via the PC programmer to be high or low power. The power can also be change by the user to high-power output of 25 Watts, and a low-power output of 2 Watt.

Light Key

Press to toggle the **Auto mode, Light Off or Light On** mode.

Auto Mode: In this mode the light will automatically come on for 5 seconds after a button press

Off Mode: Light will remain off permanently.

On Mode: Light will remain on permanently.

Monitor Key

By pressing the Monitor button, the user shall defeat the programmed squelch operation and un-mute the speaker on the selected channel.

Lock Key

Select the pre-programmed Function Key (P1-P3). This function can disable all keys except PTT, Emergency Key.

Scan Key

Press the pre-programmed Function Key (P1-P3) to start and cancel the scanning operation. (Please refer to the Scanning section)

Public address Key

User selectable On/Off. When selected and the external speaker is attached, the radio will output voice audio over the external speaker. Please note that the audio is not transmitted in this mode.

Open/Close Key

Press to toggle the radio status Open or Close mode. When pressed to open, Selcall will be defeated.

Selcall Key

Select the pre-programmed Function Key (P1-P3) to enter the Selcall selection mode.

Set the correct Selcall feature using ▼▲, from the following options – ANI, RECEIVED and CALL 1-3

Select the pre-programmed Selcall Key (P1-P3) to transmit the selcall code or to read received messages.

SMS Key

Select the pre-programmed Function Key (P1-P3) to enter the SMS selection mode. Set the correct SMS text message using ▼▲

Press the pre-programmed SMS Key (P1-P3) to transmit the SMS text.

1200/2400 bps Key

Press the pre-programmed Function Key (P1-P3) to toggle between the SMS baud rate 1200 bps or 2400 bps, using the ▼ ▲ keys.

DTMF Key

Select the pre-programmed Function Key (P1-P3) to enter the DTMF selection mode.

Set the correct DTMF using the ▼ ▲ Keys

Press the pre-programmed DTMF Key (P1-P3) to transmit the DTMF code.

Group Key

Select the pre-programmed Function Key (P1-P3) to enter the group selection mode.

Set the desired group using the ▼ ▲ keys.

Press the programmed key to select the group number.

Emergency Key

When the orange emergency key is pressed, a pre-programmed sequence or set of sequences is transmitted. Up to three sequences can be attached to the emergency key. (Please see Selcall section).

Asic Control *(Fig.5)*

Many of the radio parameters can be controlled via the Asic control. Press Asic key to enter Asic mode: Key assignment as below:

Key	Display	Parameter
P1	Mod-1	Balance Deviation
P2	Mod-2	CTCSS Balance
P3	Gain-	Mic Gain/
Down ▼	TX -----	Peak Deviation
Emergency	rGain-	CTCSS Deviation

(Refer to ASIC section in the service manual)

Basic Radio Operation

Channels

The PM200/250 Series radio can store up to 208 channels within the same frequency band. These channels can be selected by using the ▼ ▲ keys. The channels can all be programmed using the PM200/250 programmer.

Channel Spacing

The PM-200 is capable of programmable channel spacing. Each channel can be programmed to 12.5 KHz or 25 KHz channel spacing using the PC programmer.

Output Power

Each channel can be programmed via the PC programmer to a high-power output of 25 Watts, and a low-power output of 2 Watts. The power can be switched by the user High / Low by pressing pre-programmed power key (P1-P3).

Using the APC (Automatic Power Control) software, the exact RF power can be adjusted for low and high power settings.

Beep On/Off Mode

All Beep tones can be globally enabled or disabled via the PC programmer.

Public Address

When selected and external speaker is attached, the radio will output voice audio over the external speaker. The radio does not TX a carrier in this mode. P/A will be shown in display when selected. When active allows operator to enable an external speaker and transmit microphone audio only.

Microphone Hook

This is a PC programmable function (please see programming manual). Turned OFF, the user is not required to ground microphone button on to the Mic hanger. All decode and scan functions remain the same. Turned ON, the user is required to ground the microphone hook. When microphone is removed from ground all tone decode functions are disabled, scan functions are programmable as on or off with microphone removed from hook. Default is off with scan disabled.

Squelch Options

The radio supports 3 kinds of Squelch options. A different Squelch option can be applied to each channel. Sub Audible Tone (SAT) codes are made up from frequencies which are below 300Hz. These frequencies are lower than the voice audio band. The two most common forms of SAT codes are CTCSS, Continuous Tone Coded Squelch System, and DCS, Digitally Coded Squelch.

CTCSS / DCS information may be added to speech during transmission. A receiving radio can then be programmed to behave according to which tones or codes are being sent by a transmitting radio.

The PM200/250 radios are capable of generating all 38 standard CTCSS tones and can also generate the 83 standard DCS codes and 83 inverted DCS codes.

CTCSS

38 kinds of TIA/EIA Standard CTCSS tones can be set up. All tones can be set up using the PC Programmer.

TX Operation: If PTT key is pressed, the radio transmits a programmed CTCSS tone.

RX Operation: If CTCSS tone is detected, the radio status is changed from Busy to Correct Call. If the CTCSS Tone is not detected, the radio would stay in Busy mode or change from Correct Call to Busy mode.

DCS

The radio supports 83 kinds of TIA/EIA Normal/Inverted DCS codes.

TX Operation: If PTT key is pressed, the radio transmits a pre-programmed DCS Bit pattern.

RX Operation: If DCS Data Stream is detected, the radio status will change from busy mode to Correct Call. If DCS Data Stream is not detected, the radio will stay in busy mode or be changed from Correct Call back to busy mode.

Squelch Defeat (Monitor) operation

Pressing the monitor key will open the squelch and switch on the loudspeaker. Everything on the channel, including FM noise, will be heard.

It is possible to disable the monitor key via the programmer, to prevent a user openly monitoring a channel in a closed user group system.

When using CTCSS or DCS controlled squelch, several user groups may use the same RF channel without overhearing the other groups. It is common practice to allow users to listen

to a channel before placing a call. This allows the user to check they are not going to transmit over a conversation from another user group.

This allows more efficient use of the RF channels available.

Muting Options

The radio is programmable with different muting options: (please also see squelch options and programming manual). These options are associated with various Selcall functions.

Power up: OPEN - the radio is powered up in Monitor Open mode, (Speaker On).

CLOSE - the radio is powered up in Monitor Closed mode. (Speaker Quiet).

Auto Mute: Enabled, the radio automatically returns to its quiet state after a period of inactivity (see timer below). Disabled the radio remains in its open mode until it is manually put into its quiet state (depending on programming).

Timer: This is the length of time of inactivity after which the radio returns to its quiet state.

PTT Timer

The PTT Timer can be set from 0 – 990 seconds with 10 second increments, which is the allowed time for a sustained transmission.

TX Inhibit

TX inhibit does not allow a transmission for a set programmed time after the PTT timer has expired, to allow a cool off period for the transmitter. The settings are from 0 – 75 seconds in 5 sec. increments.

TX Delay

TX delay eliminates squelch tails associated with CTCSS tone transmissions, by removing the CTCSS tone from the end of a transmission for an approximate 200ms before the carrier is dropped.

Busy Channel Lockout

The radio has several inhibit functions which restrict transmission under the following conditions:

Busy Channel Lockout – ON: upon PTT being pressed, if carrier is present, the radio shall not transmit and an audible alert tone will be heard.

Busy Channel Lockout – OFF: upon PTT being pressed, the radio shall transmit regardless of the presence of carrier.

Marked Idle

Marked Idle enabled: can only be enabled if Busy Channel Lockout is ON. If the Busy Channel Lockout is on and carrier is detected, the radio shall be permitted to transmit if the RX squelch option is valid.

Marked Idle disabled: eliminates Marked Idle and defaults back to 'Busy Channel Lockout'.

PTT Lockout

The radio can control the PTT action in three ways according to radio busy status.

Off: Allows PTT to operate regardless, whether the radio is in an open state (monitor open) or not, and does not change the state of the radio.

Auto Open: 'Auto Open' opens the monitor of the radio after pressing PTT.

Lock PTT: 'Lock PTT' prevents the keying of PTT unless the radio is open

Display Logo

On start-up the display gives a welcome message, this can be programmable up to 9 characters long.

Power up Alert

Power up Alert can be globally disabled / enabled via the PC programmer.

Power up Open/closed

The radio can be programmed to be either open or closed on power up.

Closed: Radio is in muted state (Speaker Quiet).

Open: Radio is in unmuted state (Speaker Open).

Internal Speaker and External Audio Switch

The internal speaker and external accessory socket can be manually switched by the user. This can be changed by the PC programmer. With the radio switched off hold in programmable keys P1 and P3, Switch radio on. Display will read either External or Internal.

Scanning

This feature will support three different scanning types. Dealer programming enables the required scan type.

Normal Scan

Priority Scan

Priority Look-back

The user activates scanning by a short press on the Pre-programmed Scan button, once the radio has enabled scan, it will traverse through the pre-programmed scan list. The time spent on receiving a channel in the scan list is referred to as the Scan Speed Time (programmable from 0.05sec to 2.0sec in 0.01sec increments). When an incoming call is detected and decoded, scanning stops and the radio will un-mute. After the call has ended, the radio enters Scan Delay / Wait Time Mode for a pre-programmed period of time (0 to 15 seconds in 1-second increments). If the radio receives a call from the same caller before the Scan Delay expires, the radio will re-enter the Scan Delay Mode and that period of time will reset. If the user is permitted to respond to the caller, the Scan Delay will be reset. When the Scan delay expires, the radio resumes scanning.

Normal Scan

Any number of channels can be entered into the scan list. This will be equal to or less than the number of programmed channels. The flashing green LED will stop when 'CARRIER' or 'CARRIER AND CORRECT TONE' is detected. During scan delay, the LED shall remain clear. When Scan Delay expires and Scan Speed resumes, the LED shall also resume flashing green.

Priority Scan

A priority channel can be allocated using the PM200/250 programmer. The priority channel will be part of the list of channels that make up the scan list. The priority channel when used with other scanned channels will operate as follows:

P1→S1→P1→S2→P1→S3→P1→S4→P1, etc.

Priority Look Back Scan

One channel can be programmed by the dealer to be the Priority channel, which will enable 'Look-Back'. Pressing the Scan button shall activate Priority Look-Back. The Priority Look-

Back causes the radio to periodically 'Look-Back' to the priority channel for the presence of a carrier regardless of the channel that the user may be on. The frequency that the radio will 'Look-Back' to the priority channel can be programmed between 1 to 7 seconds in 1-second increments. When carrier, or carrier and tone, are removed, the radio will revert back to the previously selected channel.

Transmitting During Scanning

The radio shall be set to behave in a number of ways when the PTT is pressed during Scan.

Priority Scan TX – The radio can be set to transmit on the channel on which activity has been detected -OR- transmit on the priority channel if scanning is still active.

Priority Only TX – If scanning, or listening to an active channel, and the PTT button is pressed, the radio will only transmit on the priority channel only. No other transmit conditions will be permitted. If transmission is attempted, a warning tone will be sounded.

RX only, No TX – No transmissions allowed during scanning. If transmission is attempted a warning tone will be sounded.

Normal Scan TX – Radio will only transmit on a stopped channel i.e. to return a call. Attempting, to transmit during scanning will cause a warning alert.

Scan Channel Delete

Pressing the “▼” (when in scan mode and stopped on the channel) shall temporarily delete the channel from the scan list. This shall remove that channel from the scan list until the channel is changed or the radio's power is reset. When power is restored or the scan list channel position is selected again, the originally programmed scan list shall be activated.

Group Scan Edit Mode

You can edit your pre-programmed Group Scan List by adding or deleting scan list from the Group Scan List. To activate scan list editing, press and hold the **P1** button on the front of the radio and turn volume on the radio. Upon entering the scan list edit function, the LCD displays the “Scan Edit” message. To exit the scan list edit function, turn volume off the radio.

1. Select the Scan Group

Each Scan Group would be displayed as “**xx_nnn_xx**” means group, and nnn means Channel. To activate scan list editing for selected group, press the **P1** button. You can change the Scan Group Number by using the up or down button.

2. Adding or Deleting to Scan List

If each channel is in the ‘Scan Editable List’, Channel Number would display Scan Icon, to add or delete each channel to Scan Editable List, use **P2** button.

Priority Scan Channel Edit

Priority Channel can be setup by PC programmer. Priority Scan List is also editable by the radio. It is called ‘Priority Channel Edit Mode’. Turn on the radio by pressing the **P2** button, the radio enters Priority Channel Edit Mode. In the Priority Edit Mode, the LCD displays the “PscanEdit” message.

1. Select the Priority Group

Each Scan Group displays “**xx_nnn_xx**” which means the current Group and ‘**nnn**’ means the channel. To activate P scan list editing for selected Priority group, press the **P1** button. You can change the Priority Group Number by using the up or down button.

2. Adding or Deleting to P Scan List

If each Channel is included in P Scan Editable List, the Channel Number would display “**Pscan**” Icon. To add or delete channel from P Scan Editable List, use **P2** button.

Selcall

The PM200/250 has a comprehensive Selective Calling system. With 7 standard tone-sets plus a user defined tone set. Features include ANI, Emergency, Stun & Revive, Covert Mode, Acknowledge, and Selcall Text.

Pre-program one of the Function Keys (P1-P3) as Selcall to activate.

Tone Sets

EEA, ZVEI1, ZVEI2, ZVEI3 DZEVI, PZVEI, CCIR, CCITT and User.

Encode

ANI

To send ANI (automatic number identification), Press pre-programmed Function Key (P1-P3) and select Selcall, use ▲▼ to select ANI. To send press programmed selcall key again.

Up to 3 sequences can be sent at one time. ANI can be attached to the Start or the End of transmission.

Emergency

When the emergency button is pressed, an emergency Selcall is automatically transmitted for the pre-programmed specified time period. This is where the sequence or set of sequences to be transmitted as the Emergency Call can be entered. Up to 3 sequences from 1-8 may be transmitted. After the emergency call, the transceiver performs transmission and reception alternately with the following conditions. To cancel this function press the PTT.

There are six actions/timings associated with the emergency call.

Check Open If enabled when the correct carrier and selcall is present monitor opens.

Check Busy If enabled and channel has carrier present PTT is denied.

Encode Alert When selcall has been sent an audible alert will be heard.

Repeats The amount of repeat TX RX cycles. 0 - Permentantly on.

Cycle Repeat Time The amount of time between cycles. 0-250 seconds.

TX Timer The TX on time. 0-250 seconds.

Encode Call 1 – Call 3

There are three programmable call addresses; each call can have up to three sequences attached. To initiate a call, press the Selcall key and select the correct call number by scrolling using the ▲▼. To send the call, press the Selcall key. There are three actions associated with the call addresses.

Check Open If enabled when correct carrier and selcall is present, monitor opens

Check Busy If enabled and channel has carrier present PTT is denied.

Encode Alert When selcall has been sent, audible alert will be heard.

Acknowledgement

Three acknowledgements can be assigned; each acknowledgement can use 1-3 of the 8 sequences available.

Decode

There are eight decode addresses, three Call addresses, four control addresses and one group address. Up to 8 tones can be used in the decode address; X can be used as a variable number. S can be used in the decode address as a status (please note a DTMF Mic will have to be used to enter variable digits).

Decode Call 1 – Call 3

There are three call decode addresses that can be assigned. Up to 8 tones can be use in the decode addresses 0-9 and A-E can be entered. There are three actions/timings associated with call 1-3 decode addresses.

Action - Open, Close, Stun, Revive, Covert On, Covert Off

Stun – Prevents any transmission from the radio and will also mute the speaker.

Revive – Re-activates the radio.

Close – Remote muting of the speaker.

Open – Remote un-muting of the speaker.

Covert On – Valid Selcall causes the radio to cycle between TX mode and RX mode. The time periods spent in TX and RX modes are programmed into the addressee radio, however, it will be the Base Station or Selcall Sender that remotely turns this feature ON or OFF.

Covert Off – Remotely turns the radio covert mode off, i.e. the radio will return back to passive receive mode.

Selcall Text

When the correct Selcall tone set is received, the text is displayed. Up to 8 characters/numbers.

Decode Control 1-4

There are four control decode addresses that can be assigned. Up to 8 tones can be use in the decode address 0-9 and A-E can be entered. There are three actions/timings associated with control 1-4 decode addresses. (See Call 1-3 for actions/timings).

Group Call

The group call is normally reserved for multiple calls. (See decode Call 1-3 for actions / timings).

Decoder Tone Length

This is the time of the standard tone length, note that tone length timings will change automatically depending on encode tone set selection.

Covert RX on time Amount of time the receiver is active in covert mode. 0-250 seconds.

Covert TX on time Amount of time the transmitter is active in covert mode. 0-250 seconds.

Received Message Selection

The radio can store up to 5 received selcall messages. The oldest message is erased when the 6th message is received. However, once the radio is powered off, all messages are cleared. To see stored messages

Press pre-programmed **Selcall** key and use ▲ ▼ to select “**Received**” for stored messages.

Press pre-programmed **Selcall** to enter stored message list.

Press ▲ ▼ to select the desired stored message.

Press **Selcall** again to return to the standby condition.

Selcall Keypad Microphone

Direct Selcall entry using Keypad microphone

The PM200/250 has the ability to use a DTMF microphone. Depending on programming, various letter codes can be added into an encode sequence.

“K” - If K is added to the sequence it will represent Keypad. For example if 123KK is sent, the decoded message reads 123 plus the last two digits entered on the keypad microphone

“S”- If S is added to the sequence it will represent status. For example if 123SS is sent the decoded message reads 123 plus the last two digits entered on the keypad microphone

“X” If X is added to the sequence it will represent a repeated. For example if 123XX is sent, the decoded message reads 12333

Sequence

Tone Length mS

		Lead In Time	1st Tone Time	Lead Out Time
Sequence 1	<input type="text" value="123KK"/>	<input type="text" value="300"/> mS	<input type="text" value="40"/> mS	<input type="text" value="40"/> mS
Sequence 2	<input type="text" value="123SS"/>	<input type="text" value="300"/> mS	<input type="text" value="40"/> mS	<input type="text" value="40"/> mS
Sequence 3	<input type="text" value="123XX"/>	<input type="text" value="300"/> mS	<input type="text" value="40"/> mS	<input type="text" value="40"/> mS

(Fig.6)

To edit K Key Mode

To edit K Key code mode.

During standby condition, push STR and scroll until Selcall is selected.

To hold Selcall selection press RCL.

Press # until K Key is displayed.

Select digits (maximum two digits) using microphone key pad

Press SND to store selected digits.

Press # to select correct call or ANI for the two digits to be attached too.

Press SND to transmit the edited Selcall string.

K default is 00 at power switch on.

To edit S Key Mode

To edit S Key code mode

During standby condition, push STR and scroll until Selcall is selected.

To hold Selcall selection press RCL.

Press # until S Key is displayed.

Select digits (maximum two digits) using microphone key pad

Press SND to store selected digits

Press # to select correct call or ANI for the two digits to be attached too.

Press SND to transmit the edited Selcall string.

S default is 00 at power switch on.

DTMF

DTMF Call Selection

Select pre-programmed Function Key (P1-P3) to enter DTMF selection mode.

Set the correct DTMF Code using ▼▲.

Press pre-programmed DTMF Key (P1-P3) to transmit the DTMF code.

Receiving DTMF

When DTMF code is received DTMF data is displayed

When the received DTMF includes more than 8 characters, “►” symbol will appear. The message can then be scrolled using ▼▲.

Press any button to return to the standby condition.

Transmitting DTMF

9 DTMF codes are available and the messages can be edited via PC Programming and Keypad microphone.

Press pre-programmed DTMF Key (P1-P3) to enter the DTMF code menu selection mode. Up to 9 DTMF codes are available:

Press ▼▲ to select the desired DTMF Code.

Press pre-programmed DTMF Key (P1-P3) to transmit the DTMF Code.

Direct DTMF entry with Keypad microphone

Manual dial Operation

While in the standby condition, Press [STR] once, to enter the DTMF mode.

Display "DTMF"

Press the appropriate [0]-[9], A, B, C, D,*, # to enter the desired character.

Press the CLR Key number or character will be deleted at last number or character.

Press and hold the CLR key. All messages will be deleted. The radio enters standby mode.

Press the RCL key. Press the number key. The DTMF message which is stored is displayed on the LCD.

Press the RCL Key. Press the #,* key to remove the displayed data from the LCD. The radio enters the standby mode.

Press and hold the RCL Key, the radio is changed with number mode and Alphabet mode.

Press and hold the STR Key to blink the cursor. Press [*] to move the cursor to left. Press [#] to move the cursor to the right *

Press the STR Key in the edit mode. Press the number key. DTMF message is stored

Display [STORE Num]

Press the SND key to transmit the DTMF data.

Clearing a Dialed Number

When a number has been accidentally entered during auto dial, a press and release of the CLR key will delete an individual number. A press and hold of the CLR key will clear the entire dialed number.

To Store a Number in Memory

Dial the desired number. The entered number will show in the radio display.

Press and release the STR key.

Press and release any number 0–9 to store the number, * and # cannot be used for storing a number. **STORed** will show in the display indicating the number has been stored in memory under that key.

To Recall a Stored number from Memory

Press and release the RCL key.

Press and release the number key from which a number has been stored.

Press SND to dial the recalled number.

Clearing a Stored Number

Press and release the RCL key.

Press and release the number key from which a number has been stored. The stored number will show in the radio display.

Press and hold the CLR key to remove the stored number. A new number can now be entered and stored in that location.

SMS

SMS Selection

If the transceiver has SMS assigned to it, the automatic SMS transmission function is available. Up to 9 SMS messages are available:

To select SMS message

Press SMS – an SMS message appears

Press ▼▲ to select the desired SMS message.

Press SMS to transmit the SMS Code in selected SMS channel.

To change the baud rate

Press [1200/2400 bps]

Receiving an SMS

When SMS is received: the SMS data is displayed

When the received SMS includes more than 8 characters, “►” appears.

Press any button to return to the standby condition.

Received message selection

The radio stores the received messages for record. Up to 9 messages for SMS, of 40 character SMS can be stored. The oldest message is erased when the 10th message is received. However, once the radio is powered off, all messages are cleared.

Press SMS: displays “**RECORD**”

Press SMS: Displays message memory.

Press ▼▲ to select the desired message

When selecting the SMS that includes more than 8 characters, “►” appears.

Press and hold the DTMF microphone button to enter the message scroll mode.

Press the DTMF microphone (#), (*) button to scroll the messages.

Press SMS: again to return to the standby condition

Transmitting an SMS

9 SMS memory channels are available and the messages can be edited via PC Programming and DTMF microphone

SMS Transmission

Using SMS memory by PC Programming

Press SMS to enter the SMS code memory channel selection mode. Up to 9 SMS channels are available:

Press ▼ ▲ to select the desired SMS Code channel.

Press SMS to transmit the SMS Code in selected SMS channel.

Direct code entry with Keypad microphone

During standby condition, Press STR 3 times, to enter the SMS mode.

Display "SMS"

Press the appropriate digit key, 0-9, to enter the desired character.

Press the CLR Key. Number or character will be deleted at cursor.

Press and hold the CLR key. All messages will be deleted; the radio enters the standby mode.

Press the RCL key. Press the number key. SMS message which is stored number is displayed at LCD.

Press the RCL Key. Press the #,* key to remove the displayed data from the LCD. The radio will enter the standby mode.

Press and hold the RCL Key, the radio switches between Number mode and Alphabet mode.

Press and hold the # key to work the space key.

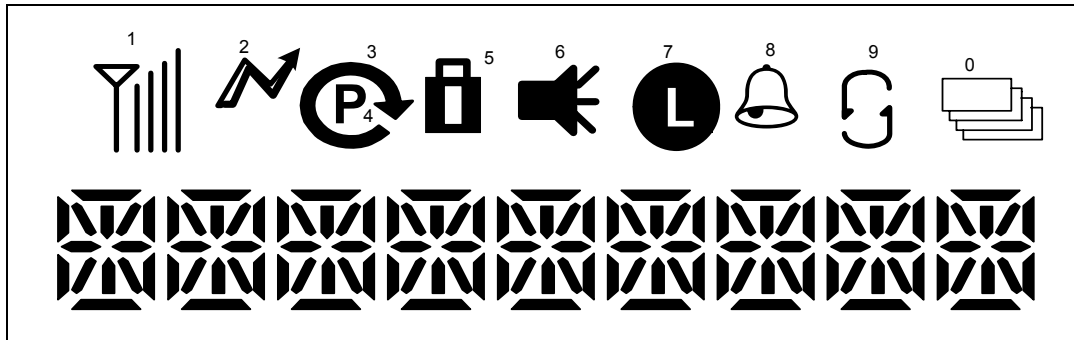
Press and hold the STR Key to blink the cursor. Press [*] to move the cursor to left. Press [#] to move the cursor to the right

Press the STR Key in the edit mode. Press the number key. SMS message is stored

Display STORE Num]

Press the SND key to transmitter the SMS data.

Function Display



(Fig.7)

- 1.) Signal strength indicator: Indicates relative signal strength level
- 2.) X Indicator: Appears while transmitting
- 3.) Scan Indicator: Appears at the scan Channel
- 4.) P Scan Indicator: Appears at the Priority scan Channel
- 5.) Key Lock Indicator: Appears when the key lock function is on.
- 6.) Speaker Indicator: Appears when in the monitor mode
- 7.) Low Power Indicator: Appears when low output power is selected.
- 8.) Selcall Detect Indicator: Appears when the selcall code is received.
- 9.) Currently not used
- 10.) Currently not used

PC Programmer



Computer

Pentium II processor or faster (recommended)

Operating System

Microsoft Windows 98, 2000, NT, XP (recommended)

Warning Status Messages

DESCRIPTION	LCD MESSAGE or COLOR		Comments
	PM250/200	AUDIBLE TONE	
Power On	Model and Software version shall be displayed after LCD All Display.	Five Beeps	
Button		Single Beep	
Busy		Yellow	
Correct Call		Green	
Transmit		Red	
In Scan Mode		Green Led Blinking	
Scan Delete	"delete"	Single Beep	
Scan All Delete	" All del"	Single Beeps	
Transmit Inhibit In Scanning	" Inhibit"	Two Beeps	
Receive Only-No TX	" RX only"	Two Beeps	
Time-Out-Timer	" tot "	Two Beeps	
Penalty	" Penalty "	Two Beeps	
Penalty End		Single Beep	
Busy Channel Lock Out	" bLock out"	Two Beeps	
Eeprom Error	" Eprom Err "	Two Beeps	
Out of Lock Error	" unLock "	Two beeps	
Pc Program Read	"Prog- r "	Red blinking	
Pc Program Write	"Prog-w "	Green Blinking	
Volume level	VOL XX		
Clone Master	"Master"	Red blinking	
Clone Slave	"Slave"	Green Blinking	
Clone end	"Turn OFF"		

(Fig.8)

Contact Details

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