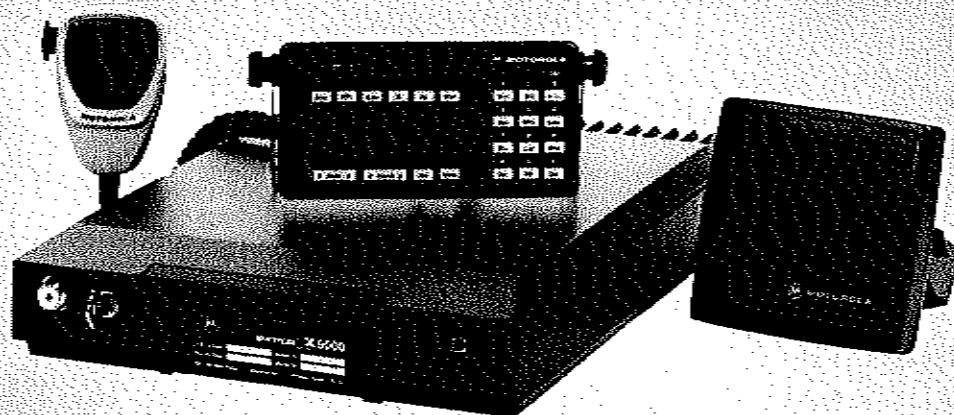




SYNTOR X 9000

CONVENTIONAL RADIO SYSTEM



**OPERATOR'S
MANUAL**

COMPUTER SOFTWARE COPYRIGHTS

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MXW-0379-B

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GENERAL SAFETY INFORMATION

The United States Department of Labor, through the provisions of the Occupational Safety and Health Act of 1970 (OSHA), has established an electromagnetic energy safety standard that applies to the use of this equipment. Proper use of this radio will result in exposure below the OSHA limit. The following precautions are recommended:

DO NOT operate the transmitter of a mobile radio when someone outside the vehicle is within two feet (0.6 meter) of the antenna.

DO NOT operate the transmitter of a fixed radio (base station, microwave, and rural telephone RF equipment) or marine radio when someone is within two feet (0.6 meter) of the antenna.

DO NOT operate the transmitter of any radio unless all RF connectors are secure and any open connectors are properly terminated.

In addition,

DO NOT operate this equipment near electrical blasting caps or in an explosive atmosphere.

All equipment must be properly grounded according to Motorola installation instructions for safe operation.

All equipment should be serviced only by a qualified technician.

Refer to the appropriate section of the product service manual for additional pertinent safety information.

MXW-2620-A (1)

INSTALLATION SAFETY WARNING

Consider the occupants' safety when you choose a location for the radio. Do not mount the radio overhead or on a sidewall unless you take special precautions.

If someone were to remove the radio and fail to replace it properly, road shock could bump the radio loose, and the falling radio could in some circumstances cause serious injury to the driver or a passenger.

If you must mount the radio overhead or on a sidewall, give it the added protection of a retaining strap.

WARNING

For vehicles equipped with electronic anti-skid braking systems, see "ANTI-SKID BRAKING PRECAUTIONS" Publication, Motorola Number 68P81109E34.

WARNING

It is mandatory that radio installations in vehicles fueled by liquefied petroleum gas conform to the following standard.

National Fire Protection Association standard NFPA 58 applies to radio installations in vehicles fueled by liquefied petroleum (LP) gas with the LP-gas container in the trunk or other sealed-off space within the interior of the vehicles. This standard requires that:

1. Any space containing radio equipment shall be isolated by a seal from the space in which the LP-gas container and its fittings are located.
2. Remote (outside) filling connections shall be used.
3. The container space shall be vented to the outside.

MXW-2620-A (2)

FCC REQUIREMENTS

The FCC requires you to obtain a station license for your radio equipment before you transmit on it, but it does not require an operating license or permit. The station licensee is responsible for ensuring that the transmitter power, frequency, and deviation are within the maximum limits allowed by the station license.

SERVICE

To buy a service contract for your Motorola equipment:

Motorola Communications Group
1301 E. Algonquin Road
Schaumburg, Illinois 60196

The licensee of the station is at all times responsible for the proper operation and maintenance of the equipment. No FCC License is required for personally maintaining the equipment. You must check the frequency and deviation of the transmitter on installation and at least once yearly.

SERVICE MANUAL

Motorola instruction manuals contain complete testing and servicing instructions. You can buy one of these from:

MOTOROLA, INC.
Communications Group Parts Dept.
1313 E. Algonquin Road
Schaumburg, Illinois 60196

MXV-2483-B

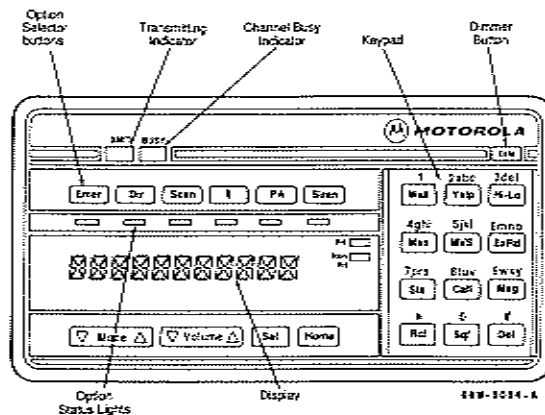
SYNTOR X 9000 SYSTEM DESCRIPTION

Your **SYNTRON X 9000** advanced control unit is designed to give you the best compromise between ease of use, flexibility in option control capability, and expandability for future option growth. The **SYNTRON X 9000** is a conventional FM transceiver, but with many more options than a standard radio.

NORMAL STATE

The eleven-character display allows viewing of mode numbers, mode names, volume level, and option status. The display shows programming inputs during selection of options. It also serves as the power indicator for the system.

The **SYNTRON X 9000** mobile radio system operates in essentially one of two states at all times; the "normal" state and the "configuration" state. In the "normal" state, the control unit display indicates your selected mode, or the currently active received mode when *Channel Scan* is on. You can turn on or off the various options in the system, change modes, and adjust volume. The display temporarily changes as these functions are accomplished. Options that require an indication of their on/off state have associated on/off indicator lights. Other options are located on the keypad. The state of this second type of option is quickly determined by pressing the associated option button. The option's current status temporarily displays.



Control Unit Description

CONFIGURATION STATE

You can re-configure the system options and certain radio parameters (e.g. squelch setting). Do this by holding the button until the radio or option changes the mode display and beeps. When the option is set, press **[Home]**. This returns your radio to normal operation. The control unit automatically returns to normal operation if 60 seconds elapses between button inputs.

SYNTOR X 9000 CONTROL UNIT

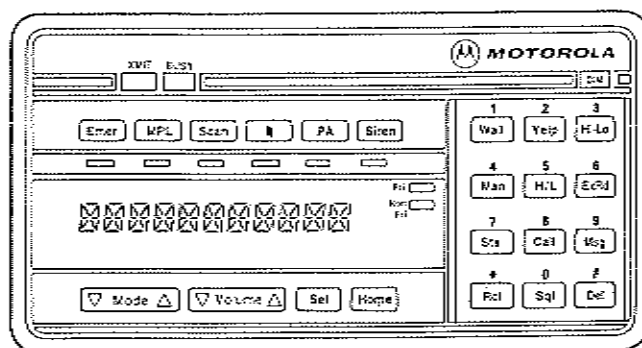
Before operating the radio, familiarize yourself with the various operating controls, indicators, and alert tones.

The SYNTOR X 9000 Control Unit allows you to program your own mode names. The names you assign are clearly shown in the eleven character display. At a glance, you can see all the key operating information including the mode selected, or the channel being scanned, and the on/off status of various options. The operating conditions are shown either by the display or by lighted indicators.

The display also shows *Channel Scan* lists, repeater names and unit names for selective call. It also plays an integral role in encoding certain operating data through the control unit during configuration.

Because each SYNTOR X 9000 is a custom-designed radio system, the following sections describe the controls commonly used in SYNTOR X 9000 radios. A word shown in bold type, for example **[Mode]**, indicates a button on the control unit.

The power switch is a hidden slide switch located on the bottom right side of the control unit. The display is used for power indication. When turned on, "SELF CHECK" displays and your



G2W-3335-A

SYNTOR X 9000 Control Unit

radio checks itself for proper operation. If a system malfunction is discovered, an error code displays for two seconds. Should the malfunction jeopardize system security, the control unit stops accepting inputs and a fail code displays. See the troubleshooting guide for full descriptions of error and fail codes.

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MODE

Use the **[Mode]** rocker switch to scroll through the list of 32 standard modes programmed in your system. During normal operation, the selected mode number and field programmed mode name is shown on the radio's display. When turned on, your radio comes on with the mode programmed as HOME. During normal operation, the selected mode number and name appears on the display. **[Mode]** is also used for selecting option choices.

VOLUME AND SQUELCH

The **[Volume]** rocker controls volume settings for radio reception. It also sets the public address and external radio volume levels for radios with these options. To set the volume, hold the **[Sql]** button until a beep sounds. Set squelch to zero using the **[Mode]** rocker. Use the volume rocker to adjust the volume level. Reset the squelch level using the mode rocker. Press **[Home]** to return to normal operation.

Press **[Sql]** to display "MONITOR ON" and allow channel monitoring. **[Sql]** is also used to set squelch level. To set the squelch level, hold **[Sql]** until a beep sounds. The display shows the current setting. Use **[Mode]** to change squelch level. Press **[Home]** to return to normal operation.

HOME

The radio goes to a preprogrammed home mode when **[Home]** is pressed. This is a direct change of mode, regardless of the number of modes between the programmed home and displayed mode. You may use **[Home]** and the keypad to select other modes by holding **[Home]** until a beep sounds. Use the keypad to enter your desired mode. Press **[Home]** to go to that mode.

When you complete changing any option or radio feature, press **[Home]** to return to normal operation. **[Home]** acts to enter the selection displayed unless the selection is invalid.

DIM

The **[Dim]** button adjusts the brightness of the display and button backlighting to one of four levels. When your radio is turned on, the brightness automatically resets to its highest level. Press **[Dim]** to lower the brightness. The lowest setting turns the display off for surveillance operation.

Note

When **[DIM]** is in "surveillance" mode, there is no power indication.

CHANNEL SCAN FEATURES

CHANNEL SCAN

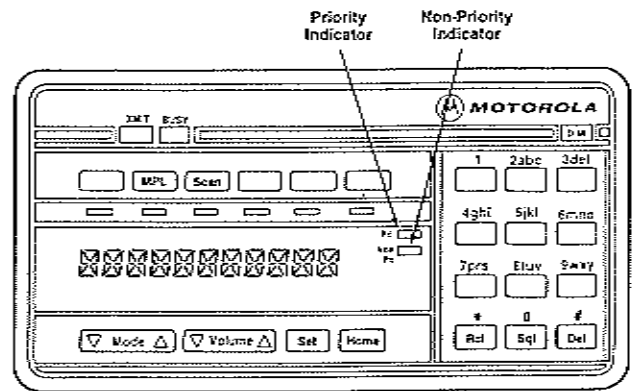
The *Channel Scan* feature allows you to monitor a previously selected list of modes for activity. Press **[Scan]** to begin *Channel Scan* operation. If no activity exists, the display shows your selected channel. When a scanned channel becomes active, the display shows the active channel and unmutes the radio. To scan, regardless of PL code, press **[Sql]** once while scan is on. Any channel activity will now unmute the radio during scanning.

OPERATOR SELECT CHANNEL SCAN

The *Operator Select Channel Scan* allows you to select your own list of modes to scan. You may also assign first and second priority modes.

If you have not selected a scan list, your radio displays "BLANK LIST" when you press **[Scan]**. You may select, modify, or review a scan list by holding **[Scan]** until a beep sounds. Use keypad entries, mode name selection, or a combination of both to create or add to your scan list, and press **[Sel]** to enter that mode on your scan list. Press **[Home]** to return to normal operation and start scanning.

Hold **[Scan]** until a beep sounds to review your scan list. Use **[Rcl]** to scroll through your list. To delete a mode from your list, press **[Del]** when the mode you want to remove is displayed. Press **[Home]** to return to normal operation and start scanning.



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Priority and Dynamic Priority Scan Features

Priority

If this feature is not included in your radio, the priority modes are defined in the radio memory and cannot be operator modified.

On power-up, the operator select scan returns to the list selected prior to power-down.

When scan is on, the priority of a mode on the scan list is determined by the number of times the **[Sel]** button was pressed when the mode was entered in the scan list.

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Press [Sel]	Assigns Mode To	Indicator
1 Time	Non-Priority	Non-Priority Lights
2 Times	Second Priority	Priority Lights
3 Times	First Priority	Priority Blinks

Dynamic Priority

The "dynamic priority" feature allows the priority of a mode to be modified when it is active. The **[Sel]** button toggles a mode between the non-priority list and second priority position. Only one mode can occupy the second priority position at a time. Press **[Sel]** when the mode is active to change the mode from non-priority to second priority or second priority to non-priority. This feature does not affect the first priority mode.

Restore the original scan list by either (1) turning scan off and on, (2) changing mode, or (3) turning the radio off and on. An optional tone to alert you of first or second priority activity is also available. Both "dynamic priority" and "priority alert" features are programmed into the memory.

Nuisance Mode Delete

This optional feature may be programmed in the radio memory. Non-priority modes in the scan list that become undesirable may be temporarily deleted using the **[Del]** button when that mode is active. Modes are not permanently affected, and only one mode may be deleted at a time. Priority modes cannot be deleted. To return a deleted mode to the list, press **[Rcl]**. Another optional feature is the priority alert tone. This alert tone may be programmed in the radio memory.

MODE SLAVED SCAN

Mode Slaved scan lists are pre-programmed and cannot be operator modified. When **[Scan]** is on, the internal scan list for the selected mode is scanned and the scan indicator lights. The currently active mode number or name displays while the appropriate priority or non-priority indicator lights. If no activity exists, the display indicates the selected mode until activity on a scanned mode occurs.

MDC-600 SELECTIVE CALL

[Call] is an operator selected call destination. Destination choices are "BASE," "GROUP," and "FLEET." When pressed, the radio's transmissions are received by only the selected destination.

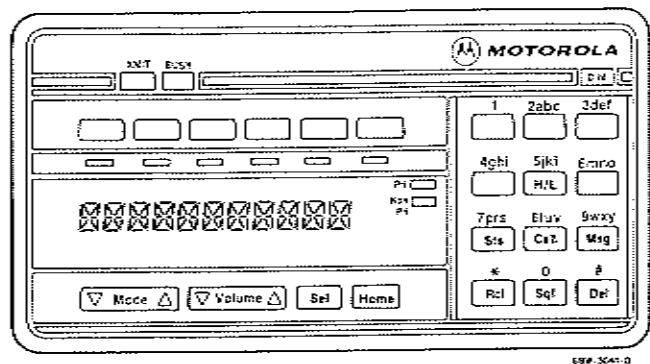
To select a new destination, hold [Call] until a beep sounds. Use [Mode] to scroll until the new destination displays. Press [Home] to enter that selection.

Mobile-to-Mobile Selective Call

If your Selective Call option is programmed for this feature, your selective call destinations now include "UNIT." To select a unit destination, hold [Call] until a beep sounds and use [Mode] to scroll to "UNIT." Press [Sel]. You may use the keypad to enter the new unit number or [Mode] to scroll to the unit name. Press [Sel] to enter your selection and [Home] to return to normal operation.

Selective Call Decoder Alarms

[H/L] displays the currently selected decoder alarm(s). Alarm choices are "HORN," "LIGHTS," "HRN/LTS ON," and "HRN/LTS OFF." These alarms indicate an incoming call or



MDC-600 Selective Call and Horn/Lights Options

message. To select a new alarm setting, hold [H/L] until a beep sounds. Use [Mode] to scroll until the desired alarm displays. Press [Home] to return to normal operation.

When you receive a Selective Call, your display alternates for one minute between "Call" and the mode your radio is on.

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MDC-1200 SELECTIVE CALL

The Selective Call allows you to place and receive private calls with specific units.

You may select a target unit from a pre-stored list of up to nine units. If you have Unlimited Call, you can select from the pre-stored list or use the keypad to call any properly equipped unit in the system.

INITIATING A SELECTIVE CALL

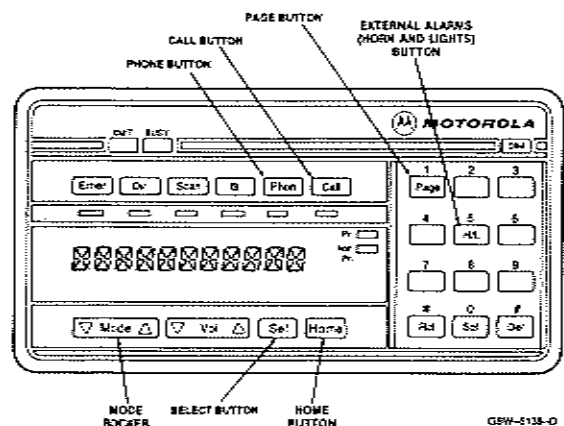
Press the [Call] button to initiate a Selective Call. An alert tone sounds and the red indicator light blinks. The display shows the last ID called. With Unlimited Call capability, you can use the keypad to enter the desired four digit ID or use the [Mode] rocker to scroll through the pre-stored list of names and their associated ID numbers.

Press [Sel] to initiate the call. Pause for an automatic acknowledge from the target unit. "PLEASE WAIT" displays and a ring tone sounds until the target operator responds to the call by pressing [Call], then PTT.

If the target operator does not respond, press the [Sel] button to exit the call alert page.

If the target unit does not acknowledge after five retries, the display shows "CALL NO ACK".

If the target unit is already engaged in another private call, the display shows "UNIT BUSY".



MDC-1200 Selective Call

Press the [Home] button to return the radio to normal operation, or to terminate the call.

TO RECEIVE A SELECTIVE CALL

You hear two alert tones and the display shows "CALL" when you receive a private call.

Press the **[Call]** button to answer. An alert tone sounds and the red indicator light blinks. The display changes to "ID-RCVD". Respond to the call by pressing PTT.

Press the **[Home]** button to terminate the private call.

STORING CALL ID's

To store Call ID's, first press the **[Call]** button. An alert tone sounds and the red indicator light blinks. The display shows the

last ID called. Use the **[Mode]** rocker to scroll to "STORE ID" and press the **[Sel]** button. The display changes to "UNIT 1", "UNIT 2", etc. (call names can be field programmed). If the call name is left on the display for more than two seconds, the display alternates between the ID and name stored in that location.

Press the buttons on the keypad to enter the ID to be stored.

After the ID has been entered, press the **[Sel]** button to store it. You may continue or press the **[Home]** button to store and exit the Call storage mode.

DTMF SELECTIVE CALLS

The DTMF Selective Call allows you to place and receive calls with specific units.

You may select a target unit from a pre-stored list of up to nine units, or use the keypad to call any properly equipped unit in the system.

INITIATING A SELECTIVE CALL

Press the **[Call]** button to initiate a DTMF Selective Call. An alert tone sounds and the red indicator light blinks. The display shows the last ID called. Use the keypad to enter the desired four digit ID or the **[Mode]** rocker to scroll through the pre-stored list of names and their associated ID numbers.

Press **[Sel]** to initiate the call. Pause until the receiving unit responds.

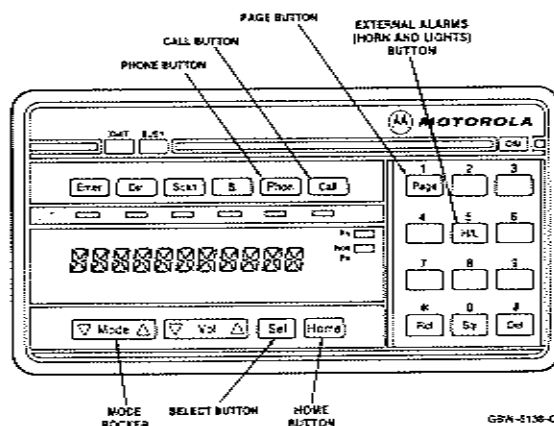
Note

DTMF and Call buttons are interchangeable.

Press the **[Home]** button to return the radio to normal operation.

TO RECEIVE A DTMF SELECTIVE CALL

You hear two alert tones and the display shows "CALL" when you receive a call. A ringing tone sounds when you receive a DTMF call.



DTMF Selective Call

Press the **[Call]** button to answer. An alert tone sounds and the red indicator light blinks. The display changes to "CALL". Respond to the call by pressing PTT.

Press the **[Home]** button to return the radio to normal operation.

Receiving a group call requires no action. The radio unmutes on correct PL. Press the **[Call]** and **[Home]** buttons to remute the radio's audio.

Note

If the radio is equipped with External Alarm (Horn & Lights), see External Alarms.

STORING UNIT ID's

To store Unit ID's, first press the **[Call]** button. An alert tone sounds and the red indicator light blinks. The display shows the last ID called. Use the **[Mode]** rocker to scroll to "STORE UNIT" and press the **[Sel]** button. The display changes to "UNIT 1",

"UNIT 2", etc. (call names can be field programmed). If the call name is left on the display for more than two seconds, the display alternates between the ID and name stored in that location.

Press the buttons on the keypad to enter the ID to be stored, only when the name appears on the display.

After the ID has been entered, press the **[Sel]** button to store it. You may continue or press the **[Home]** button to store and exit the Unit storage mode.

MDC-1200 INDIVIDUAL CALL ALERT PAGE

CALL ALERT PAGE

Individual Call Alert Page Encode-Decode allows you to selectively alert specific units.

You may select a target unit from a pre-stored list of up to nine units. If you have Unlimited Call, you can select from the pre-stored list or use the keypad to page any properly equipped unit in the system.

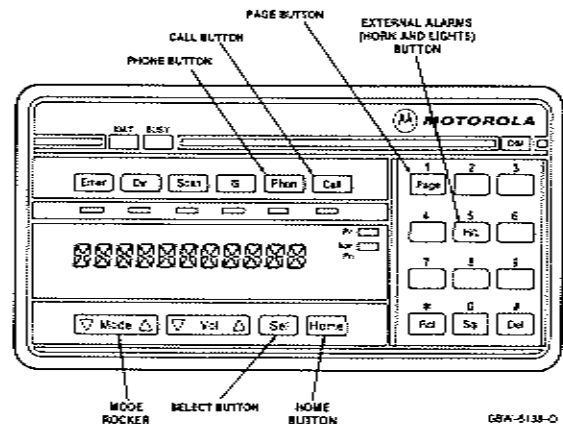
INITIATING AN INDIVIDUAL CALL ALERT PAGE

Press the **[Page]** button to initiate an Individual Call Alert Page. An alert tone sounds and the display shows the last ID paged. With Unlimited Call Alert capability, use the keypad to enter the desired four digit ID or use the **[Mode]** rocker to scroll through the pre-stored list.

Press the **[Sel]** button to send a page. The display shows "PLEASE WAIT" while the page is being processed.

The display shows "ID PAGED" and you hear four additional alert tones (beep-beep-beep-beep) when the unit you paged sends a Unit Acknowledge. The radio returns to the normal operation. If the acknowledgement is not received within five retries, the display shows "PAGE NO ACK".

Press the **[Home]** button to return the radio to normal operation.



MDC-1200 Selective Page

TO RECEIVE AN INDIVIDUAL CALL ALERT PAGE

When an Individual Call Alert Page is received, four alert tones (beep-beep-beep-beep) sound and the display flashes "PAGE". This repeats until you acknowledge the page by pressing PTT.

Note

If the radio is equipped with External Alarm (Horn and Lights) see External Alarms.

STORING PAGE ID's

Press the **[Call]** button to store Page ID's. An alert tone sounds and the display shows the last ID paged. Use the **[Mode]** rocker to scroll to "STORE ID" and press the **[Sel]** button. Now use the **[Mode]** rocker to scroll through the choices; the display shows "UNIT 1", "UNIT 2", etc. (call names can be field programmed).

If the call name is left on the display for more than two seconds, the display alternates between the ID number/name stored in that location.

Use the keypad to enter the ID to be stored.

Press the **[Sel]** button to store it in memory and continue through the list making other changes. Press the **[Home]** button to store the selection and exit the Page storage mode.

MDC-600 STATUS AND MESSAGE

MDC-600 STATUS

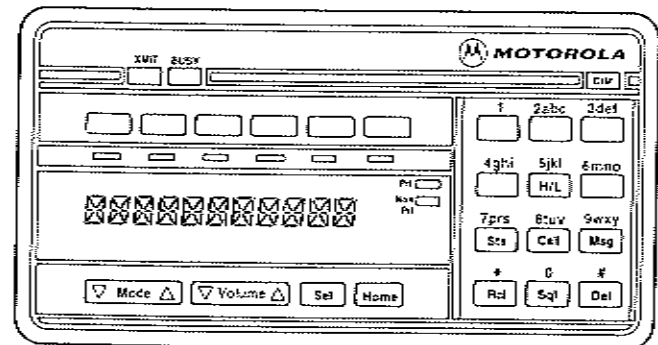
Press **[Sts]** to display the last selected status code. To send status code, hold **[Sts]** until a beep sounds, then press **[Home]**.

To select and send a new status code, hold **[Sts]** until a beep sounds. Use **[Mode]** to scroll until the new status displays, then press **[Home]**. You may use the keypad to select a new status. Hold **[Sts]** until a beep sounds. Use the keypad to enter the new status number. You may press **[Sel]** to display the corresponding status name. Press **[Home]** to send.

MDC-600 MESSAGE

Press **[Msg]** to display the last selected message code. To send the message code, hold **[Msg]** until a beep sounds, then press **[Home]**.

To select and send a new message code, hold the **[Msg]** button until a beep sounds. Use **[Mode]** to scroll until the new message displays, then press **[Home]**. You may use the keypad to



IBM 3041-D

MDC-600 Status and Message Options

select a new message. Hold **[Msg]** until a beep sounds. Use the keypad to enter the new message number. You may press **[Sel]** to display the corresponding message name. Press **[Home]** to send.

MDC-1200 STATUS/MESSAGE

STATUS/MESSAGE

The Status and Message buttons are in a Direct Entry Keyboard housing that mounts directly above the control unit.

All you do is push the Status or Message button you need.

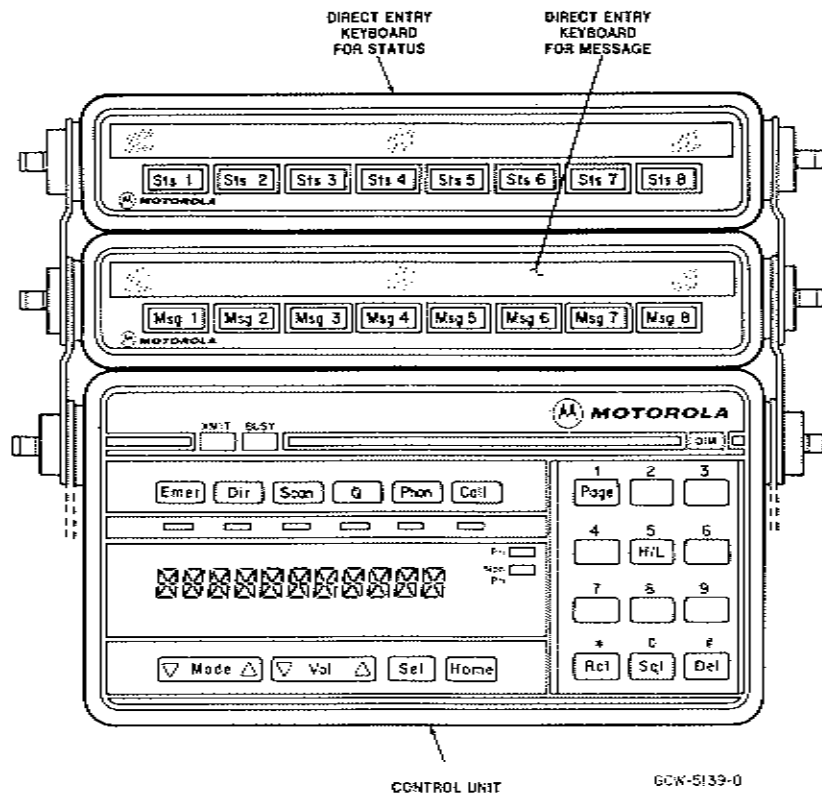
The red indicator light blinks for 5 packet retries while waiting for an acknowledge.

When an acknowledge is received, an Acknowledgement tone

(beep-beep-beep-beep) sounds and the Status or Message indicator lights solid. This shows the last Status/Message acknowledged by the dispatch terminal.

If an acknowledge is not received, the red indicator continues to flash and the display shows "STS NO ACK" or "MSG NO ACK". At the same time, the indicator above the last acknowledged status/message lights. Press the [Del] button to clear the 'no ack' condition, then resend the status/message as previously described.

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MDC-1200 Control Unit Equipped with Direct Entry Status and Message Options

MDC-1200 EMERGENCY ALARM

EMERGENCY ALARM

Press the **[Emer]** button to activate the Emergency Alarm feature. The red indicator lights and the display flashes "EMERGENCY".

When the base acknowledges the alarm, an acknowledgement tone (beep-beep-beep-beep) follows, and the radio automatically returns to normal operation.

If the base does acknowledge the alarm after 20 retries (the option automatically tries 20 times), the red indicator turns off and the display returns to normal operation.

No further operation is required.

Exit the Emergency Alarm mode by pressing PTT.

SILENT EMERGENCY ALARM

During a silent Emergency Alarm, the indicator below the **[Emer]** button does not light and the receiver audio mutes so no indication is given that an Emergency Alarm has been sent.

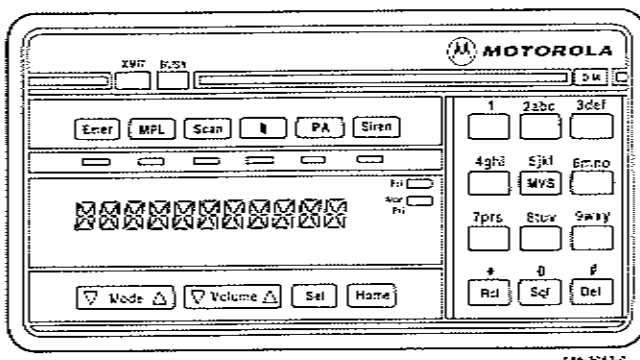
Press the **[Emer]** button to activate the Silent Alarm option.

Exit the Silent Alarm mode by pressing the PTT.

MDC-600 ID/EMERGENCY AND MOBILE VOICE STORAGE

MDC-600 ID AND EMERGENCY

[Emer] is an emergency message sent on the selected mode or a predetermined mode. Once an emergency transmission is sent, the receive audio remains muted until the next microphone PTT.



Emergency and Mobile Voice Storage Options

MOBILE VOICE STORAGE

[MVS] allows you to play, replay, record, or send voice messages. See table at right. If a message from the base is waiting

to be reviewed, your display alternates between "VOICE MSG" and your selected mode.

To play the waiting message, hold **[MVS]** until a beep sounds. Use **[Mode]** until "PLAY" displays. Press **[Sel]** to play the message. Press **[Home]** to return to normal operation.

To record a message, hold **[MVS]** until a beep sounds. Use **[Mode]** to scroll until "RECORD" displays. Press PTT and speak into the microphone. When the PTT button is released, the message automatically plays back for your review. Press **[Sel]** to send your message. To return to normal operation, press **[Home]**.

Display Shows	Press	Action
PLAY	[Sel]	Plays message that is waiting
REPLAY	[Sel]	Repeats last message
RECORD	PTT	Records your voice for transmission; replays your message on PTT release
SEND	PTT or [Sel]	Sends your recorded message

ELECTRONIC SIREN AND EXTERNAL RADIO

SIREN

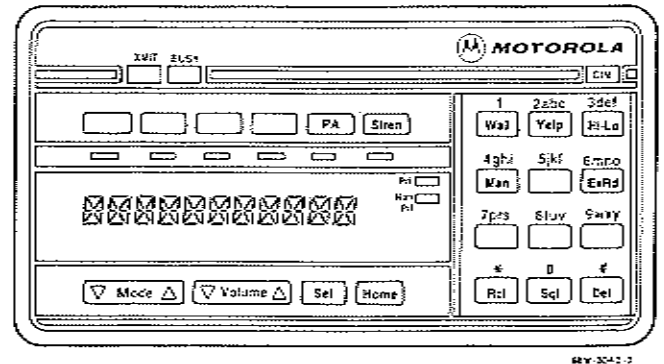
Press the **[Siren]** button to activate the siren option. The status indicator lights and the last selected siren function, **[Wail]**, **[HiLo]**, or **[Yelp]** is activated. You may preselect the functions by pressing the desired button on the keypad when the siren is off. The selected function will momentarily be displayed. You may also select a different function while the siren is on.

MANUAL

[Man] is programmed in the memory to function with the Wail, Yelp, or Airhorn sounds. With **[Man]** enabled, the horn ring activates the programmed siren sound.

ACTIVE FUNCTION	CHANGE TO	HOW CHANGED
[Wail]	[Yelp]	Press and release horn ring; press again to return to [Wail] .
[Yelp]	"Airhorn" sound	Press and hold horn ring as long as you want to sound the Airhorn.
[HiLo]	[Yelp]	Press and release horn ring; press again to return to [HiLo] .

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Siren, Siren Function, and External Radio Option

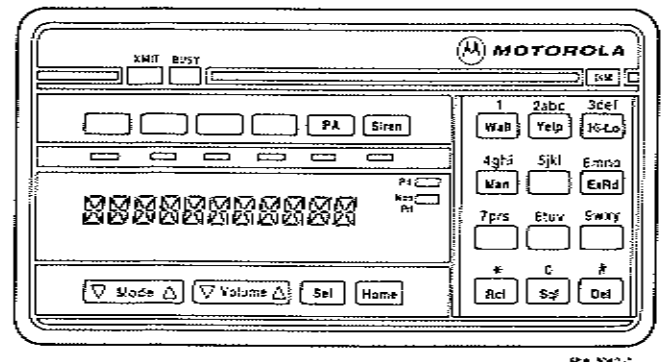
EXTERNAL RADIO

The **[ExRd]** function routes radio receiver audio to the siren speaker. When siren is on and the **[ExRd]** mode is selected, the **[Volume]** rocker controls the PA speaker volume. Changing the volume setting does not affect the radio volume setting or siren intensity. On power-up, the siren function remembers the last selected function.

PUBLIC ADDRESS

PUBLIC ADDRESS

Press **[PA]** to select the public address option. The microphone PTT switch controls the public address without keying the radio. Use **[Volume]** to control PA volume, indicated on the display by "PA VOL." Changing the PA volume setting does not affect the radio volume. The public address option overrides all siren functions when PTT is pressed if both siren and PA are selected.



Public Address Option

REPEATER TALKAROUND AND MULTIPLE PRIVATE-LINE

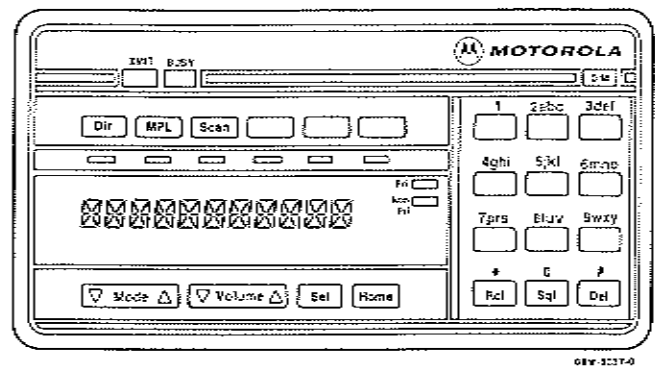
REPEATER TALKAROUND

Press the **[Dir]** button (indicator lights) to allow direct mobile-to-mobile communication. The repeater talkaround option allows this direct communication by bypassing the system's repeater. To return to the repeater frequency, press **[Dir]** again (indicator goes off).

MULTIPLE PRIVATE-LINE/DIGITAL PRIVATE-LINE

[MPL] is an operator selected coded squelch pair used to access different repeaters in a radio system. Squelch pairs are preprogrammed and are not altered during selection. Your MPL selection overrides the mode-slaved code pair.

To select your coded squelch pair, hold **[MPL]** until a beep sounds. You may use the **[Mode]** rocker to scroll to your selection or use the keypad. To use the keypad, enter the number of the code you wish, and press **[Home]** to enter your selection and return to normal operation.



Repeater Talkaround and Multiple Private-Line Options

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TELEPHONE INTERCONNECT OPTION FOR CONVENTIONAL SYSTEMS

The Telephone Interconnect option for Conventional Systems allows you to place or receive telephone calls directly from the mobile radio.

You may dial numbers manually or from a pre-defined list. The radio stores up to nine phone numbers (names can be field programmed), plus the last number called.

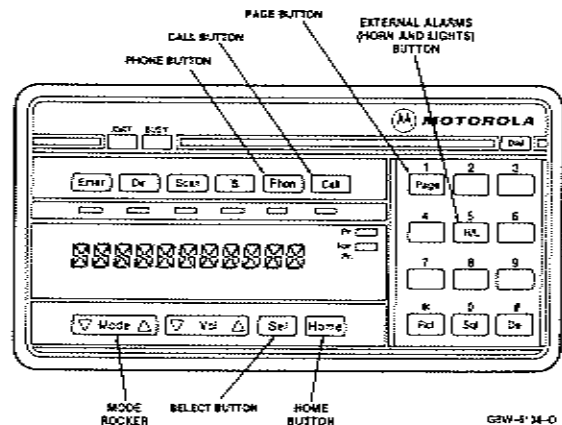
SCRATCH PAD DIALING

Press the **[Phon]** button to make a call. An alert tone sounds and the display alternates between "SCRATCH PAD" and the last number dialed. The scratch pad memory stores the last number dialed from the keypad or from the memory list.

Enter the phone number on the keypad. Press **[Del]** twice (delete function) if you make an error. Press the **[Sel]** button to make the call.

When the land line party answers, explain that only one person can talk at a time. Each time you release your PTT button, the listener hears a tone. This is their cue to begin talking. Proceed with your conversation in a normal push-to-talk manner.

Press the **[Home]** button to exit the phone mode.



Telephone Interconnect

AUTO DIALING FROM MEMORY

Press the **[Phon]** button. An alert tone sounds and the display alternates between "SCRATCH PAD" and the last number dialed. Use the **[Mode]** rocker to scroll to the desired name/number. Press the **[Sel]** button to begin the auto-dial sequence.

If the number has a "P" (pause), the radio de-keys until the [Sel] button is pressed again.

When the land line party answers, explain that only one person can talk at a time. Each time you release your PTT button, the listener hears a soft tone. This is their cue to begin talking. Proceed with your conversation in a normal push-to-talk manner.

Press the [Home] button to exit the phone mode.

STORING PHONE NUMBERS

Special Key sequences help program certain features of the Telephone Interconnect option such as:

- Press *—displays ""
- Press #—displays "#"
- Press * #—displays "P".
This special function is used to pause in the middle of a dialing sequence. Press the [Sel] button to continue.

To store phone numbers in memory, first press the [Phon] button. An alert tone sounds and the display alternates between "SCRATCH PAD" and the last number dialed.

Use the [Mode] rocker to scroll to "STORE PHONE" and press the [Sel] button. The [Mode] rocker scrolls through the choices

and the display shows "PHONE 1", "PHONE 2", etc. (phone names can be field programmed). If a phone name is left on the display for more than two seconds, the display alternates between the number and name currently stored in that location.

Press the buttons on the keypad to enter the number to be stored at this memory location.

TO RECEIVE A TELEPHONE CALL

You hear two alert tones and the display shows "CALL" when you receive a private call.

Press the [Call] button to answer. An alert tone sounds and the red indicator light blinks. The display changes to "PHONE CALL". Respond to the call by pressing PTT.

Press the [Home] button to return the radio to normal operation.

Receiving a group call requires no action. The radio unmutes on correct PL. When complete, press the [Call] and [Home] buttons to remute the radio's audio.

Note

If the radio is equipped with External Alarm (Horn & Lights) see External Alarms.

SECURENET OPERATION

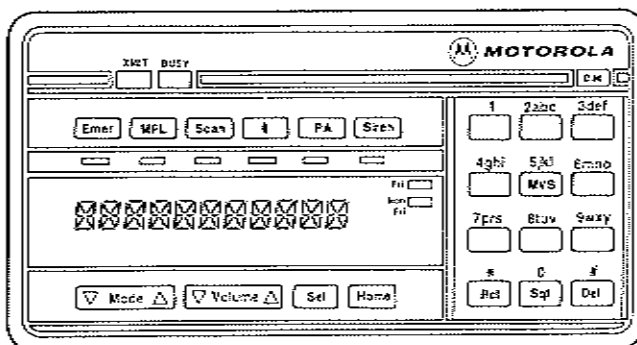
When [Q] is pressed, the SECURENET option is enabled, and the indicator lights. SECURENET checks itself for proper operation. If a problem is discovered, an error message is displayed. During transmission, the transmit indicator blinks, indicating coded transmission is taking place. The SECURENET product is shipped as a single code option, but can be field programmed to provide two codes. If SECURENET is mode-slaved on or off for a particular mode, an improper entry alert tone sounds when you press [Q] while on such a mode.

To select one of two codes, hold the [Q] button until beep sounds. SECURENET is automatically enabled during configuration. The code is selected by direct keypad entry, or by use of the [Mode] rocker to scroll to the desired code name. If numeric keypad selection is used, press the [Sel] button to allow the corresponding name to be displayed. Once the code appears on the display, enter by pressing the [Home] button. This returns you to normal operation, and SECURENET remains on.

The code number (or name) is temporarily displayed each time PTT is pressed. Entries for code numbers greater than two are not accepted. On power-up, SECURENET returns to the last selected state (on or off), and last selected code.

SECURENET OPTIONAL ALERT TONES

TX Clear Alert Keyfall Alert PL Override (Basic SECURE- NET only) RX Clear Alert (Autocoded/ clear models)	Transmitting in Clear Mode Key fails during transmission Correct PL is received Receiving a clear message while in transmit private mode
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SECURENET Option

COMMERCIAL WARRANTY (STANDARD)

Motorola radio communications products are warranted to be free from defects in material and workmanship for a period of ONE (1) YEAR, (except for crystals and channel elements which are warranted for a period of ten (10) years) from the date of shipment. Parts, including crystals and channel elements, will be replaced free of charge for the full warranty period, but the labor to replace defective parts will only be provided for one-hundred-twenty (120) days from the date of shipment. Thereafter, purchaser must pay for the labor involved in repairing the product or replacing the parts at the prevailing rates together with any transportation charges to or from the place where warranty service is provided. This express warranty is extended by Motorola Communications and Electronics, Inc., 1301 E. Algonquin Road, Schaumburg, Illinois 60196, to the original purchaser only, and only to those purchasing for purpose of leasing or solely for commercial, industrial, or governmental use.

THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED WHICH ARE SPECIFICALLY EXCLUDED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL MOTOROLA BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW.

In the event of a defect, malfunction, or failure to conform to specifications established by seller, or if appropriate, to specifications accepted by seller in writing, during the period shown, Motorola, at its option, will either repair or replace the product or refund the purchase price thereof, and such action on the part of Motorola shall be the full extent of Motorola's liability hereunder.

This warranty is void if:

- the product is used in other than its normal and customary manner;
- the product has been subject to misuse, accident, neglect, or damage;
- unauthorized alterations or repairs have been made, or unapproved parts used in the equipment.

This warranty extends only to individual products, batteries are excluded, but carry their own separate limited warranty. Because each radio system is unique, Motorola disclaims liability for range, coverage, or operation of the system as a whole under this warranty except by a separate written agreement signed by an officer of Motorola.

Non-Motorola manufactured products are excluded from this warranty, but subject to the warranty provided by their manufacturers, a copy of which will be supplied to you on specific written request.

In order to obtain performance of this warranty, purchaser must contact its Motorola salesperson or Motorola at the address first above shown, attention Quality Assurance Department.

This warranty applies only within the United States.

MXW-0378-A

ADVANCED SECURENET OPERATION

When [Q] is pressed, the SECURENET option is enabled and the indicator lights. SECURENET checks itself for proper operation. If a problem is discovered, an error message is displayed. During transmission, the transmit indicator blinks, indicating coded transmission is taking place. If SECURENET is mode-slaved ON or OFF for a particular mode, an improper entry alert tone sounds when you press [Q] while on such a mode. The key number (or name) is temporarily displayed each time PTT is pressed. On power-up, SECURENET returns to the last-selected state, ON or OFF, and the last selected Key.

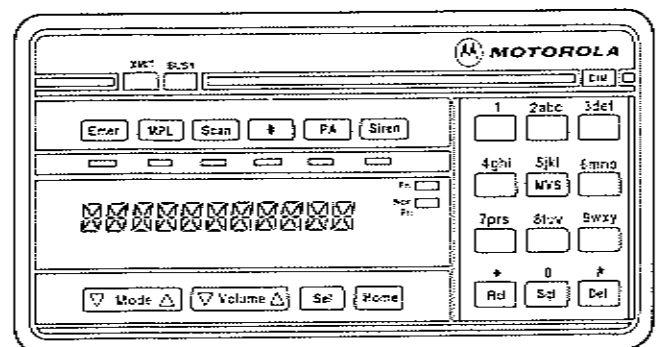
Advanced SECURENET has the capability of MULTI-KEY operation. Up to 16 keys are possible. A default key ("DEF KEY") is included and is associated with the current mode. The keys are strapped to a given mode or operator-selectable and may be indexed into groups of keys (for example, 16 keys may be indexed into 2 groups of 8 keys).

To change the SECURENET Index, hold [Q] down until a beep sounds. If indexing has been enabled, the radio will display the index the radio is currently operating with. Use [Mode] to choose the desired index. Press [Sel] to enter the desired index. The currently selected key will be displayed. Press [Home] to return to normal operation.

To change SECURENET Keys, hold [Q] down until a beep sounds. If indexing is disabled, the radio will display the key the radio is currently operating with. If indexing is enabled, use [Mode] to choose the desired key index. Press [Sel]; then use [Mode] or the keypad to choose the desired key. Once the key appears on the

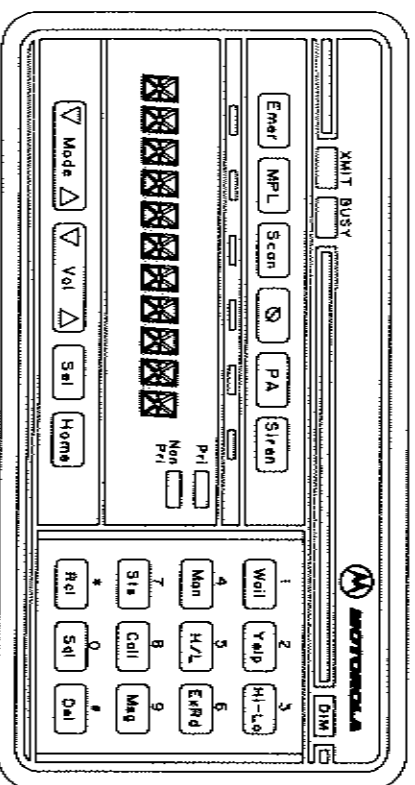
display, enter your selection by pressing [Sel]. Press [Home] to return to normal operation.

TX Clear Alert	Transmitting in clear mode
Keyfail Alert	Key fails during transmission
PL Override (Basic SECURENET ONLY)	Correct PL is received
RX Clear Alert (Autocoded/clear models)	Receiving a clear message while in transmit private Mode



Advanced SECURENET Option

SYNTO[®] X 9000 Conventional Quick Reference Card



6XW-3035-B

Fully Optional Control Head

Turning on the Radio

The power switch is on the bottom of the control unit. Slide switch to the left to turn the radio on.

To set Volume and Squelch

Hold [Sqt] until beep sounds. Set squelch to zero with [Mode] rocker. Use [Volume] rocker to set volume to desired level. Press [Home]. To change squelch level, hold [Sqt] until beep sounds. Use [Mode] to select squelch level. Press [Home]

To Change Mode

Press [Mode] rocker to select a desired channel or hold the [Home] button until two beeps sound, use the keypad to enter the mode you desire, and press [Home] again.

Channel Scan

Press the [Scan] button to activate Channel/Scan option. A previously selected list of channels is scanned for activity. If no activity exists, the display shows your selected channel. When a scanned channel becomes active, the display shows the active channel name. The PRI/NON-PRI lights show priority. To delete undesirable "nuisance" modes, press [Del] while mode is active (indicated by display). To restore the scan list, press [Rel].

SYNTRON X 9000 Conventional Quick Reference Card (Cont'd)

Operator Select Channel/Scan

SCAN LIST SELECT—For models equipped with this option, you may pick your own scan list. Hold [Scan] until a beep sounds. Use [Fct] to review the list. Choose modes for the scan list using [Mode] rocker or the keypad. To input your list, press [Sel] as each mode to be scanned is displayed. Press [Home].

PRIORITY SELECT—While making the scan list (indicator is blinking), you may designate two modes as priorities. Press [Sel] according to the following table to prioritize the displayed mode; press [Home] after priorities are set.

PRESS [Sel]	ASSIGNS MODE	INDICATOR
1 time	non-priority	NON-PRI lights
2 times	second priority	PRI lights
3 times	first priority	PRI blinks

MPL (Operator Select PL/DPL)

Multiple *Private-Line* allows you to select desired PL/DPL code. This limits reception to radios with the same code. Select a PL/DPL code, hold [MPL] until beep sounds. Use [Mode] or the keypad to select desired code. Press [Home].

SECURENET Modes

Press the [X] button to activate the **SECURENET** feature. During transmission, the "XMIT" indicator blinks, indicating coded transmission is taking place. See table below

for tones. To change **SECURENET** codes, hold [X] button until a beep sounds. Use [Mode] rocker or the keypad to choose the desired code. Press [Home] to enter your selection.

CONDITION	tone	MEANING
TX clear	Short beep	Transmitting clear audio
Keytail	Series of beeps (W388; W500 only)	Encoding key has been erased
PL override (Optional)	Short beep (Basic SECURENET)	Correct PL message being received with SECURENET on
RX clear (Optional)	Short beep (SECURENET)	Clear message being received with SECURENET on

Advanced SECURENET Modes

Press the [X] button to activate the **SECURENET** feature. During transmission, the "XMIT" indicator blinks, indicating coded transmission is taking place. See table above for alert tones. To change **SECURENET** keys, hold [X] down until a beep sounds. Use [Mode] rocker to choose the desired key index. Press [Sel]; then use [Mode] or the keypad to choose the desired key. Press [Sel] to enter your selection. Press [Home].

SYNTRON X 9000 Conventional Quick Reference Card (Cont'd)

Selective Call (MDC-1200, DTMF)

[Call]—Allows you to place and receive Private Calls with specific units.

START A SELECTIVE CALL—Press [Call]; a tone sounds and the display shows the last ID called. Use [Mode] to scroll-select a unit or use the keypad to enter a specific unit. Press the [Sel] button to begin the conversation. Press [Home] to end a Selective Call.

Note

If your system has MDC-1200 with Auto-Select call, do not press the [Sel] button. Press PTT to begin conversation. MDC-1200 with Auto-Select automatically unmutes the radio when receiving a call.

RECEIVE AN MDC-1200 SELECTIVE CALL—Press [Call] when 2 tones sound and the display shows "CALL", then begin the conversation.

DTMF CALLS—When a ring tone sounds, press the [Call] button. The display shows "CALL" and you can then begin the conversation (DTMF and Call buttons are interchangeable.)

STORE ID NUMBERS—Press [Call]; use [Mode] to scroll to "STORE ID". Press [Sel], then use [Mode] again to scroll to the desired number/name to store or change. Use the keypad to enter the ID number. Press [Sel] to store the number and continue making other changes. Press [Home] to store the number and return to normal operation.

[Page], MDC-1200 ONLY—Allows you to place and receive Call Alert Page. Use the Page option the same as described in the Selective Call option. Substitute [Page] for [Call]. Press the [Sel] button to send a page.

[H/L], HORN/LIGHTS OPTION—This selects an external alarm that will signal you when you are away from your vehicle. Press [H/L] to turn this option on or off. To change the external alarm setting, press and hold the [H/L] button until a beep sounds. Use the [Mode] rocker to scroll through the alarm settings. When the desired Alarm setting appears on the display, press the [Home] button to "turn on" that alarm option and return the radio to normal operation. The alarm alerts you when your radio receives a Selective Call, Page, or Phone Call.

Telephone Interconnect—Conventional


Press [Phon] to make a telephone call. A tone sounds and the display shows the last number called. During a call, only one person may speak at a time. Tone sounds when you release the PTT, signaling the other party to speak. Press [Home] to end a call and return to normal operation.

TO RECEIVE—A ringing tone sounds from the speaker when a phone call is received. Press [Phon] and begin the conversation.

AUTO-DIALING—Press [Phon]; a tone sounds and the display alternates between "SCRATCH PAD" and the last number dialed. Use [Mode] to scroll to the number/name you are calling. Press [Sel] to dial.

STORE PHONE NUMBERS—Press [Phon]; use [Mode] to scroll to "STORE PHONE". Press [Sel]; then use [Mode] again to scroll to the number/name to store or change. Use the keypad to enter the number. Press [Sel] to store the number and continue making other changes. Press [Home] to store the final number and return the radio to normal operation.

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