



Syn-Tech III P25 Mobile Radio
OPERATION MANUAL

MIDLAND

Syn-Tech III P25

MOBILE RADIO

OPERATION MANUAL

OUR THANKS TO YOU AND CUSTOMER ASSISTANCE

PREFACE

Thank you for purchasing a MIDLAND Syn-Tech III P25 Mobile Radio. Properly used, this product will give you many years of reliable service.

To get the most out of your purchase, be sure to carefully read this manual and keep it on hand for later reference when needed.



Before installing and using your radio, please read this operation manual.

CUSTOMER ASSISTANCE

Should you encounter any problems with this product, or not use its features, please refer to this operation manual. If you require further assistance after reading this manual, please contact your local dealer.

FOR WARRANTY, PRODUCT SERVICE AND ACCESSORY INFORMATION

Please contact your local dealer or distributor.



Do not attempt to service any internal parts yourself.
This radio should be opened by authorized personnel only.
Otherwise, the warranty **VOIDS**.

Your radio is packed and labeled according to the commercial packaging standards.

IMPORTANT SAFETY INFORMATION



Before installing and using your radio, please read this operation manual.



GENERAL PRECAUTIONS

Always use only MIDLAND authorized accessories.

Unauthorized accessories have the risk of fire hazard, explosion, personal injury or damage to the radio.



CAUTION

Changes or modifications to your radio may void its compliance with government laws/rules and make it illegal to use.

Avoid using the radio at temperatures below -30°C or above 60°C.

Avoid storing the radio at temperatures below -40°C or above 85°C.



WARNINGS

Your MIDLAND Syn-Tech III P25 Mobile Radio generates electromagnetic RF energy when it is transmitting. To ensure that you and those around you are not exposed to excessive amounts of that energy (beyond recommended allowable limits for occupational use):

DO NOT operate your radio without a proper antenna. Otherwise, you can seriously damage your radio.

DO NOT touch the antenna when you are transmitting.

NEVER connect the transceiver to any AC mains power sources. This may cause an electric shock or fire hazard and will damage your radio.

NEVER connect the transceiver to a DC power source either greater than 16 volts or with reverse polarity. Doing so will damage the transceiver.

DO NOT attempt to service any internal parts yourself. Please ask your dealer to have necessary service. This radio should be opened by authorized personnel only. Otherwise, the warranty **VOIDS**.

Please read the installation and operating instructions carefully.



WARNINGS

The FCC has adopted a safety standard for human exposure to RF energy. Proper operation of this radio under normal conditions results in user exposure to RF energy below the Occupational Safety and Health Act and Federal Communication Commission limits.

Mandatory Safety Instructions to Installers and Users:

*This radio is **NOT** approved for use by the general population in an uncontrolled environment. This radio is restricted to occupational use and work related operations only. Radio operators must have the knowledge to control their exposure conditions and the exposure conditions of bystanders and/or passengers to satisfy the lower exposure limit allowed for General Population.*

*To comply with FCC RF exposure limits, **DO NOT** operate the transmitter of this mobile radio when a person outside the vehicle is within 36 inches (92 centimeters) of the antenna.*


The antenna supplied by the manufacturer or radio dealer must be mounted at a location such that during radio transmission, no person or persons can come closer than the above indicated minimum safe distance to the antenna, i.e. 36 inches. To comply with current FCC RF exposure limits, the antenna must be installed at or exceeding the minimum safe distance stated above, and in accordance with the requirements of the antenna manufacturer or supplier.


Vehicle Installation Instructions:

The antenna used for this transmitter must be mounted on the center of the roof ONLY and must be installed in vehicle having the following characteristics in order to prevent bystanders and passengers from being exposed to levels exceeding the limits for General Population/Uncontrolled Exposure environment:

1. All passengers must be sitting under a solid metal roof.
2. For rear deck trunk and roof top installations, the antenna must be located at least 56 cm away from rear-seat passengers and bystanders in order to comply with the FCC RF exposure requirements.

DO NOT operate the radio without the proper antenna installed. Do not substitute any antenna for the one supplied or recommended by the manufacturer or radio dealer. Antennas used for this transmitter must not exceed an antenna gain of 5 dBi with a minimum cable loss of 1dB. By not following the antenna recommendations you may be exposing person(s) to excess radio frequency radiation. You may contact your radio dealer or the manufacturer for further instructions.

DO NOT transmit more than 50% of total radio use time (50% duty cycle). Transmitting for more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. This radio is transmitting whenever the TX/Busy indicator is red or the  icon is displayed. Pressing the PTT switch on the side of the microphone normally causes the radio to transmit.

 *The preceding information is provided to make you aware of RF exposure and how to ensure that this radio is operated within FCC RF exposure limits.*

You, as the qualified end-user of this radio device must control the exposure conditions of bystanders to ensure the minimum separation distance, stated above for satisfying FCC RF exposure compliance, is maintained between the antenna and nearby persons. Transmit only when all person(s) are at least the minimum distance from the properly installed, externally mounted antenna.



The AMBE+2™ voice coding Technology embodied in this product is protected by intellectual property rights including patent rights, copyrights and trade secrets of Digital Voice Systems, Inc. This voice coding Technology is licensed solely for use within this Communications Equipment. The user of this Technology is explicitly prohibited from attempting to extract, remove, decompile, reverse engineer or disassemble the Object Code, or in any other way convert the Object Code into a human readable form. U.S. Patents Nos. #5,870,405, #5,826,222, #5,754,974, #5,701,390, #5,715,365, #5,649,050, #5,630,011, #5,581,656, #5,517,511, #5,491,772, #5,247,579, #5,226,084, and #5,195,166

PRODUCT FEATURES

MIDLAND Syn-Tech III P25 Mobile Radio has the following features:

- Synthesized structure,
- Microprocessor controlled structure,
- Surface mount technology use,
- Loading external programs by FLASH EPROM,
- PC controlled full automatic test and adjustment,
- Easy installation and maintenance,
- LCD display (with 3 colors) and keypad,
- High level and high quality audio output,
- Informing user by audible, illuminated and written alerts/warnings,
- User friendly interface,
- DTMF support,
- Various types of accessories,
- Full-band VHF and UHF operation,
- Conformation with TIA/EIA-603-A standard in Analog Mode,
- Conformation with TIA/EIA-102-CAAB standard in Digital Mode,
- Conformation with APCO25 EIA / TIA 102 standards,
- Conformation with MIL-STD-810E standards.
- CTCSS/CDCSS
- 2 Tone / 5 Tone signaling
- MIX / MULTIMODE operation



See Specifications and Technical Features on page 48.

ABBREVIATIONS AND ACRONYMS

ACK	: Acknowledge
AES	: Advanced Encryption Standard
ALG	: Algorithm
ANI	: Automatic Number Identification
dBm	: Decibel Milliwatt
CIK	: Crypto Ignition Key Identity
CDCSS	: Continuous Digital Coded Squelch System
CTCSS	: Continuous Tone Controlled Squelch System
DCS	: Digital Coded Squelch
DES	: Data Encryption Standard
DSP	: Digital Signal Processing
GPS	: Global Positioning System
ID	: Identity
LCD	: Liquid Crystal Display
MSG	: Message
NAC	: Network Access Code
RF	: Radio Frequency
RSSI	: Received Signal Strength Indicator
Rx	: Receive
SC	: Selective Call
TCS	: Tone Coded Squelch
TBX	: Telephone Branch Exchange
Tx	: Transmit
WACN	: Wide Area Communication Network

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1. INTRODUCTION

1.1. PACKAGE CONTENT

You should find all of the following items packaged with your MIDLAND Syn-Tech III P25 Mobile Radio:

Receiver/ Transmitter Assy



Microtelephone



Microtelephone Hanger



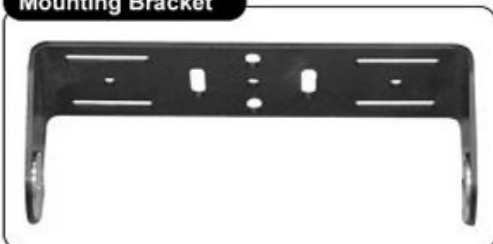
Operation Manual



Loudspeaker

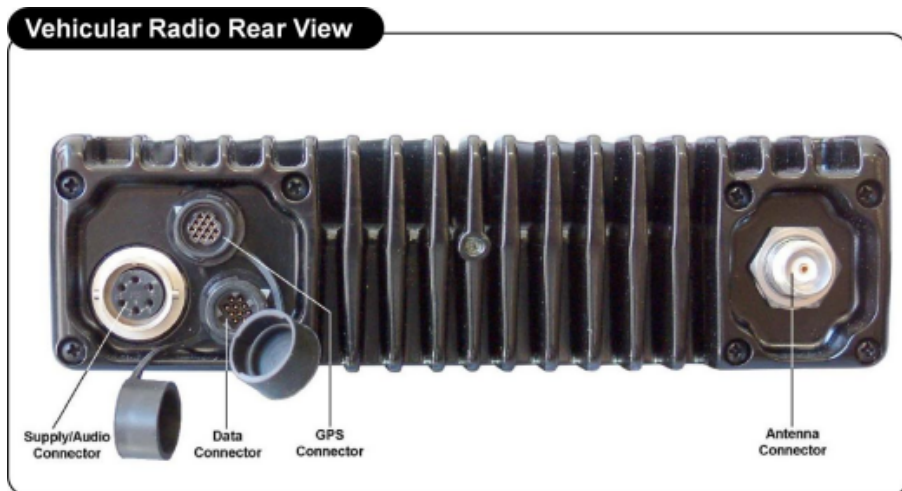
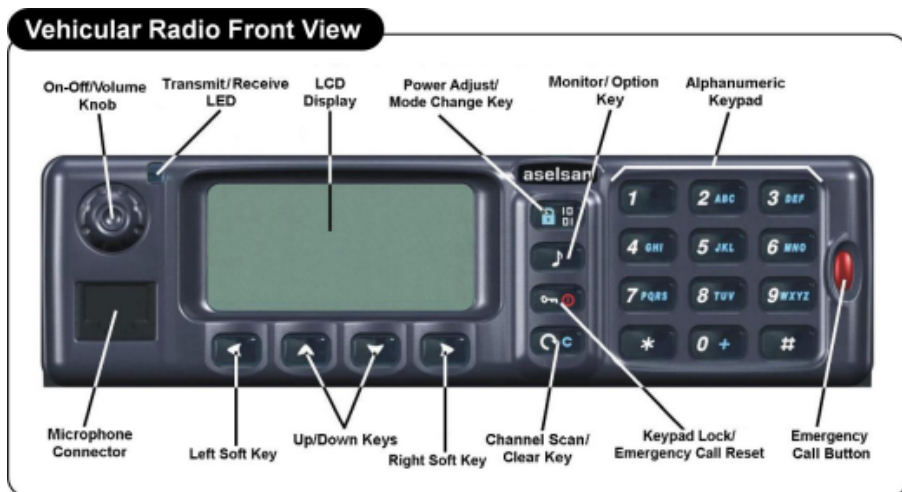


Mounting Bracket



1.2. RADIO CONTROLS and INDICATORS

1.2.1. Front and Rear Views



1.3. INSTALLATION

Installation should be performed by an Authorized Midland LMR Dealer only.

2. OPERATION

2.1. GETTING STARTED



Figure-21

Radio Controls and Indicators

Refer to the Figure-21 above to identify the various controls and indicators on your radio.

Throughout this manual you will be instructed to press or to press and hold the buttons/keys on the radio. Press means a momentary press, then release; press and hold means to hold the button/key down.

Whenever you press any button/key on your radio, a brief tone (beep) will sound to confirm the button/key press. With all button/key presses, the appropriate icon will appear on the display and the backlight will turn on. The backlight will stay on for five seconds after the button/key is released.

2.1.1. Power On-Off

The On-Off Power / Volume Knob on the front panel of the radio is pushed to turn **on** or **off** your radio and turned clockwise or counter clockwise to **increase** or **decrease** the volume.

To turn your radio On:

1. Press and hold the On-Off / Power Volume Knob (more than 2 sec) and wait. When the radio is powered **on**, your greeting message will be shown right after your radio's logo.

After two seconds, the radio will return to the settings in effect when it was last powered off, the LCD will show the appropriate icons, and all controls will be operative.

The radio will then be in **Standby** mode.

To turn your radio Off:

1. Press and hold the On-Off / Power Volume Knob (more than 2 sec) and wait. After two seconds, the radio and backlit LCD will turn **off**.

The On-Off Power / Volume Knob also controls the loudspeaker volume.

To increase the volume:

1. Turn the On-Off / Volume Knob clockwise.

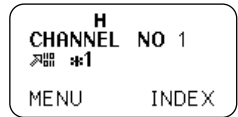
To decrease the volume:

1. Turn the On-Off / Volume Knob counter clockwise.



2.1.2. Standby/Receive and Transmit

Standby mode is the usual mode for the radio whenever it is turned on. From this mode, you can change your settings using the Left Soft Key on the front of the radio and switch to **Transmit** mode using the Talk Button. Signals will be **Received** on the selected channel(s) and alerts broadcast and messages will activate the corresponding routines in your radio.



While in Standby mode, you will receive any messages sent on the channel to which you are tuned.

If the Talk Button is pressed and held down for fifteen seconds (this period can be set up to 225 sec. by the programmer), the radio will automatically cease transmitting to prevent unwanted signal generation and battery drain. TRANSMIT TIME OUT message will appear on the LCD.



As soon as the Talk Button is released, it can be pressed again to resume transmission after a certain period of time. (This period can be set up to 15 sec not to keep the channel busy).

2.1.3. Transmit and Output Power

Transmit mode gives you the ability to interact with other users and stations.

To transmit a message:

1. Check to see that your radio is set to a proper channel for the type of message and user you plan to send.
2. With the microphone about 5 cm from your mouth and slightly off to one side, press and hold the Talk Button and speak into the microphone. **Transmit/Receive LED** will glow Red.
3. Release the Talk Button when you have finished speaking.



Transmit/Receive LED will glow Blue when you receive a message.

Output Power

Your radio can transmit selectively at **L** (Low), **M** (Medium) or **H** (High) RF power.

We suggest you maintain the **L** (Low) power setting for short-range communications to conserve battery life and to minimize the risk of interference with other nearby stations. Use the **H** (High) power setting for long-range communications or when you do not receive a response to a message sent with **L** (Low) or **M** (Medium) power settings.

H	
CHANNEL NO 1	
M	
CHANNEL NO 1	
L	
CHANNEL NO 1	
☞ *1	
MENU	INDEX

To toggle among the High, Medium and Low Power modes:

Press and hold the Power Adjust / Mode Change Button (more than 500msec).

The LCD will show which mode is in effect as **L** (Low), **M** (Medium) or **H** (High).



Press Power Adjust / Mode Change Button to toggle between encrypted and clear digital mode. Press and hold Power Adjust / Mode Change Button to toggle among **High**, **Medium** and **Low** Power in either analog or digital mode.



Press Monitor / Option Button less than 500 msec to change SQUELCH mode between **NORMAL** and **INDIVIDUAL CALL WAIT** in digital mode.

Press and hold Monitor / Option Button more than 500 msec to change **CHANNEL MONITOR** between **NAC CONTROLLED / ALL TALK GROUPS** and **OFF** in digital mode. These features must be loaded to your radio during programming.



Press Monitor / Option Button to change **SELECTIVE CALL WAITING** option between **ON** and **OFF** in analog mode. Press and hold Monitor / Option Button to change monitor **ON** and **OFF** in analog mode.

2.2. KEYPAD

Table-2: Characters Appearing on the LCD with the Successive Key Presses










Keys	Number of Key Presses										
	1	2	3	4	5	6	7	8	9	10	11
1	Space	1									
2	A	B	C	2	a	b	c	Ç	ç		
3	D	E	F	3	d	e	f				
4	G	H	I	4	g	h	i	Ğ	ğ	İ	ı
5	J	K	L	5	j	k	l				
6	M	N	O	6	m	n	o	Ö	ö		
7	P	Q	R	S	7	p	q	r	s	Ş	ş
8	T	U	V	8	t	u	v	Ü	ü		
9	W	X	Y	Z	9	w	x	y	z		
0	0	+	.	,	:	;	!	"	'		
	*	/	\	-	()	@				
	#	?	€	\$	%	&	<	=	>		
	Left Soft Key										
	Right Soft Key										
	Up Key										
	Down Key										
	Channel Scan / Clear Key										
	Keypad Lock/ Emergency Call Reset Key										


Table 1: * and # Keys Function Table


Function Keys	Number of Key Press			
	1	2	3	4
*	Group Call	Unaddressed Voice Call	Talk Around	Home Zone?
#	Current Status	Individual Call	Telephone Call	Call Alert


- Group Call** : Enter group number to address your call in digital mode. Your message is received by the stations which belong to this group only.
- Unaddressed Voice** : Select from menu and press YES to start Unaddressed Voice Call by pressing the talk button to transmit all your messages in digital mode. Keep in mind that each message is received by all the stations tuned on this channel in this mode. Press left soft key to pointing to YES to exit Unaddressed Voice Call.
- Talk Around** : Use duplex channels to communicate directly with nearby stations when you are out of repeater coverage area.
- Home Zone?** : Allows you to instantly return to preprogrammed Home Channel of Home Zone. Press left soft key pointing to OK for rapid recall of preprogrammed correspondent channel of your current zone.
- Current Status** : Enter your Current Status by relevant two digit number and press OK. Current status resets when you turn off your radio.
- Individual Call** : Use Left Soft Key to select user from index or enter max 8-digit individual radio ident to start an Individual Call. If both stations fail to transmit in 4 sec., individual call ends. Your messages cannot be received by any other stations.
- Telephone Call** : Enter the telephone number you want to dial and press Left Soft Key to start a Telephone Call via TBX. Press  key to terminate.
- Call** : Use Left Soft Key to select user from index or enter max 8-digit radio ident to send Call Alert. Other station will be warned by an audible alert and caller ident will be shown on the display.



WARNING

When your radio is in Standby analog mode;  key allows you to enable/disable talk around mode.




On the other hand; if you press once,  key allows you to make a Selective Call. Enter 2-6 digits Selective Call number of the requested station and press Left Soft Key. Other station will be warned by an audible/illuminated alert. Keep in mind that your messages can be received by any station tuned on this channel.

If you press twice,  key allows you to send predefined Two Tone Call for a preprogrammed time period. Enter the two tone code between 1 and 32 to send a proper preprogrammed two tone call frequency and press Left Soft Key pointing to OK. Your tones will be received by the stations programmed to receive this type of tones on the selected channel.

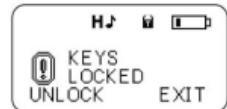
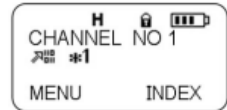
2.2.1. Key Lock

To prevent accidental changes to your settings, you can lock the keypad.

To lock or unlock the keys:

1. Press the Key Lock  button to lock the keypad. "KEY LOCK ACTIVE!" warning will appear on the display.
2. The key lock icon  will appear or your radio will ask you to UNLOCK. If any key is pressed, "KEY LOCK ACTIVE!" warning will appear on the display.
3. To unlock the keypad, press Key Lock  button. "KEYS LOCKED" warning will appear on the display and your radio will ask you to UNLOCK.
4. Press the Left Soft Key to UNLOCK.

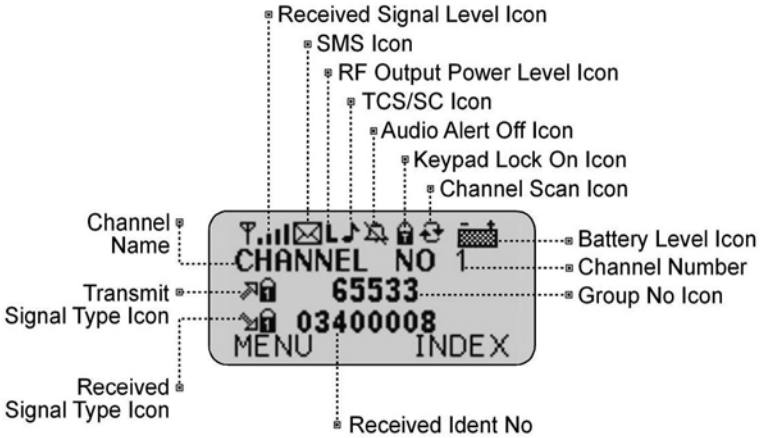
Power Adjust / Mode Change Key, Monitor / Option Key and the Talk Button are active. (You can receive or transmit a message with key lock on).



WARNING

If you press and hold the Keypad Lock button more than 500 msec, your radio resets pre-initialized emergency call mode and returns to Standby mode.

2.3. DISPLAY



The LCD will be illuminated by the backlight when any key is pressed and will remain **on** for five seconds after the key is released.

If you need to turn On the backlight without disturbing any settings:

If you press any key from keypad in the Standby mode, the backlight will remain **on** for five seconds.

2.3.1. Other Backlit LCD Display Menu Icons



icon will appear when encrypted signal of first encryption algorithm is received in digital mode.



icon will appear when encrypted signal of second encryption algorithm is received in digital mode.



icon will appear when a signal is received in clear digital mode.



icon will appear when a signal is received in analog mode.



icon will appear when an analog signal with TCS tone is received in analog mode.



icon will appear when a digital signal is received in Talk Around mode.



icon will appear when the radio transmits a signal encrypted by first encryption algorithm in digital mode.



icon will appear when the radio transmits a signal encrypted by second encryption algorithm in digital mode.



icon will appear when the radio transmits in clear digital mode.



icon will appear when the radio transmits a signal in analog mode.



icon will appear when the radio transmits a signal with TCS tone in analog mode.



icon will appear when a digital/analog signal is sent in Talk Around mode.

3. SET-UP ROUTINES (MENUS)

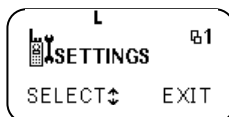
Main / Sub menus and their respective shortcut numbers are shown on each display for your instant access. All menu functions and set-up routines are illustrated in this section of your manual.

3.1. SETTINGS Menu (1)

The **SETTINGS** menu allows you to turn **on** and **off** many of its features and to adjust other features to suit your preferences.

To enter the **SETTINGS** menu:

1. In Standby mode, press the Left Soft Key to enter **SETTINGS** menu.



The **SETTINGS** menu will appear on the LCD. After entering the **SETTINGS** menu, you can scroll through it to make as many entries as you like.

Whenever the setting selection screen appears in a feature portion of the menu, it will point with a star (*) or show the setting that was in effect when you entered the menu.

When you are finished with changes, you can exit the **SETTINGS** menu and return to **Standby** mode.

To exit the **SETTINGS** menu:

1. Press the Right Soft Key pointing to **EXIT** to return the radio to Standby mode.

If you enter a submenu, the Right Soft Key will take you to an upper menu.



Basic set-up routines are described here. For set-up routines that apply specifically to a particular function, they are included in the section for that function.

3.1.1. TONES Menu (11)

The **TONES** menu allows you to turn on and off and set its **Alert**, **Call** and **Keypad** tones.

To enter the **TONES** menu:

1. In Standby mode, press the Left Soft Key to enter Settings menu.
2. From Settings menu, use the Left Soft Key to enter **TONES** menu.




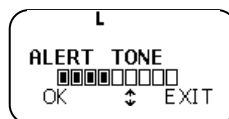
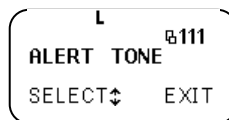
To exit the **TONES** menu:

1. Use the Right Soft Key to **EXIT** and return to **SETTINGS** menu.
2. Press the Right Soft Key pointing to **EXIT** to return the radio to Standby mode.

3.1.1.1. ALERT TONE Menu (111)

To enter the ALERT TONE menu:

1. Use the Left Soft Key to enter ALERT TONE menu from the TONES menu.
2. Press the Left Soft Key to enter ALERT TONE menu.
3. ALERT TONE intensity is indicated by 9 segments as either full or empty squares at the bottom of the display. As you lower the intensity, fewer segments will be full and Alert Tone will be less audible. When all segments are empty, ALERT TONE will be turned off and  icon will appear on the LCD.



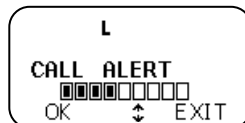
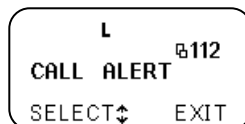
To exit the ALERT TONE menu:

1. Use the Right Soft Key to EXIT and return to TONES menu.
2. Press the Right Soft Key pointing to EXIT to return to SETTINGS Menu.

3.1.1.2. CALL ALERT Menu (112)

To enter the CALL ALERT Menu:

1. Use Up/Down keys to scroll through and press the Left Soft Key to enter CALL ALERT menu from the TONES Menu.
2. Press the Left Soft Key to enter CALL ALERT menu.
3. Call Alert tone intensity is indicated by 9 segments as either full or empty squares at the bottom of the display. As you lower the intensity, fewer segments will be full and Call Alert tone will be less audible. When all segments are empty, Call Alert tone will be turned off.



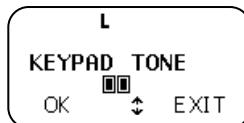
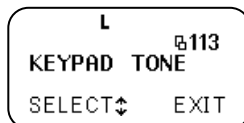
To exit the CALL ALERT Menu:

1. Use the Right Soft Key to EXIT and return to TONES Menu.
2. Press the Right Soft Key pointing to EXIT to return to SETTINGS Menu.

3.1.1.3. KEYPAD TONE Menu (113)

To enter the KEYPAD TONE menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter KEYPAD TONE menu from the TONES menu.
2. Press the Left Soft Key to enter KEYPAD TONE menu.
3. KEYPAD TONE intensity is indicated by 2 segments as either full or empty squares at the bottom of the display. As you lower the intensity, fewer segments will be full and Keypad tone will be less audible. When all segments are empty, Keypad tone will be turned off.



To exit the KEYPAD TONE menu:

1. Use the Right Soft Key to EXIT and return to TONES menu.
2. Press the Right Soft Key pointing to EXIT to return to SETTINGS menu.



WARNING

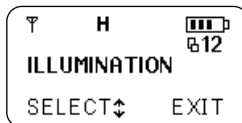
Tone intensities of your radio not only depend on the selected menu levels but also depend on the position of On-Off / Volume Knob.

3.1.2. ILLUMINATION Menu (12)

The ILLUMINATION menu allows you to turn on and off Transmit / Receive LED and backlit LCD separately.

To enter the ILLUMINATION menu:

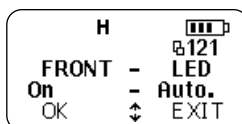
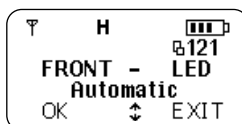
1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter ILLUMINATION menu from the SETTINGS menu.



2. Press the Left Soft Key to enter ILLUMINATION menu.

ILLUMINATION menu options are as follows;

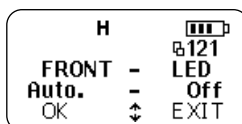
- FRONT : Automatic, LED : Automatic
- FRONT : On, LED : Automatic
- FRONT : Automatic, LED : Off
- FRONT : Off, LED : Off
- FRONT : Off, LED : Automatic



Automatic : Illuminates for 5 seconds when a key is pressed.

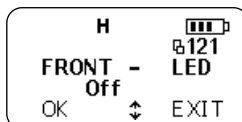
On : Always illuminates.

Off : Never illuminates.

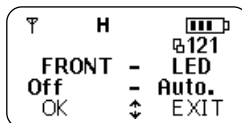


To exit the ILLUMINATION menu:

1. Use the Right Soft Key to EXIT and return to SETTINGS Menu.



2. Press the Right Soft Key pointing to EXIT to return the radio to Standby Mode.



3.1.3. DISPLAY Menu (13)

The DISPLAY menu allows you to adjust Display Direction, Contrast and Color settings.

To enter the DISPLAY menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter DISPLAY menu from the SETTINGS menu.
2. Press the Left Soft Key to enter DISPLAY menu.



To exit the DISPLAY menu:

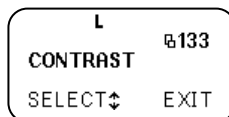
1. Use the Right Soft Key to EXIT and return to SETTINGS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.1.3.1. CONTRAST Menu (133)

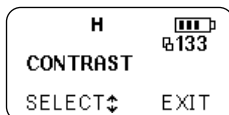
The LCD backlight will not be effectively visible in daylight, but the LCD Contrast can be adjusted to make it easier to read in different light conditions.

To enter the CONTRAST menu:

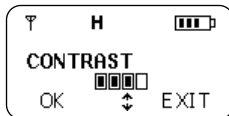
1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter CONTRAST menu from the DISPLAY menu.
2. Press the Left Soft Key to enter CONTRAST menu.



3. CONTRAST intensity is indicated by 4 segments as either full or empty squares at the bottom of the display. As you lower the intensity, fewer segments will be full and CONTRAST ratio

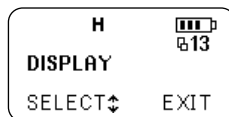


will be less.



To exit the CONTRAST menu:

1. Use the Right Soft Key to EXIT and return to DISPLAY menu.
2. Press the Right Soft Key pointing to EXIT and return to SETTINGS menu.

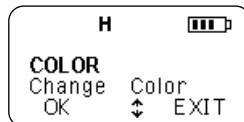
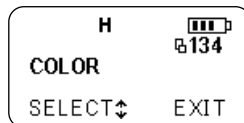


3.1.3.2. COLOR Menu (134)

This feature allows you to set the LCD backlight color for your taste.

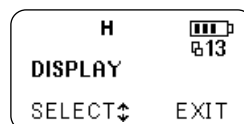
To enter the COLOR menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter COLOR menu from the DISPLAY menu.
2. Press the Left Soft Key to enter COLOR menu.
3. To change the LCD color, use Up/Down Keys to scroll through BLUE, PINK and ORANGE.
4. To select the color you wish, press the Left Soft Key and return to COLOR menu.



To exit the COLOR menu:

1. Use the Right Soft Key to EXIT and return to DISPLAY menu.
2. Press the Right Soft Key pointing to EXIT and return to SETTINGS menu.

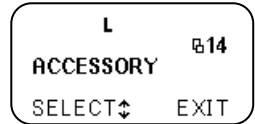


3.1.4. ACCESSORY Menu (14)

The **Accessory** menu allows you to attach and use various accessories. When you activate this menu, audio output can be directed to serial ports of your radio.

To enter the ACCESSORY menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter ACCESSORY menu from the SETTINGS menu.
2. Press the Left Soft Key to enter ACCESSORY menu.



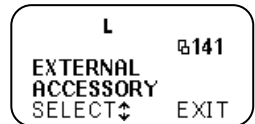
To exit the ACCESSORY menu:

1. Use the Right Soft Key to exit and return to SETTINGS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.1.4.1. External Accessory Menu (141)

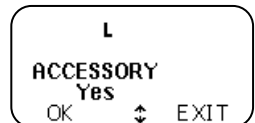
To enter the EXTERNAL ACCESSORY menu:

1. Use the Left Soft Key to enter EXTERNAL ACCESSORY menu from the ACCESSORY menu.
2. Press the Left Soft Key to enter EXTERNAL ACCESSORY menu.
3. To toggle between options, use Up/Down Keys.
4. Press the Left Soft Key to select YES to direct audio output to the front serial port. Doing so, you will be able to use your accessories such as speaker/microphone sets.



To exit the EXTERNAL ACCESSORY menu:

1. Use the Right Soft Key to EXIT and return to ACCESSORY menu.
2. Press the Right Soft Key pointing to EXIT to return to SETTINGS menu.



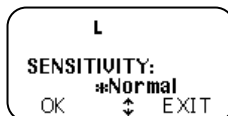
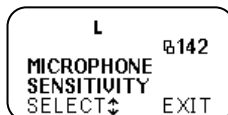
WARNING

Selecting YES as the EXTERNAL ACCESSORY menu option disables the loudspeaker. If you want to hear from your loudspeaker, you must re-select NO and a star will appear next to the selected menu option.

3.1.4.2. MICROPHONE SENSITIVITY Menu (142)

To enter the MICROPHONE SENSITIVITY menu:

1. Use the Left Soft Key to enter MICROPHONE SENSITIVITY menu from the ACCESSORY menu.
2. Press the Left Soft Key to enter MICROPHONE SENSITIVITY menu.
3. To toggle between options, use Up/Down Keys.
4. If you are away from microphone or you need to talk quietly, select HIGH. Then lower volume will be needed to trigger. Select NORMAL for normal operation.



To exit the MICROPHONE SENSITIVITY menu:

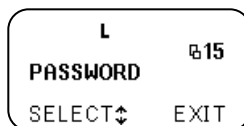
1. Use the Right Soft Key to EXIT and return to ACCESSORY menu.
2. Press the Right Soft Key pointing to EXIT to return to SETTINGS menu.

3.1.5. PASSWORD Menu (15)

The PASSWORD menu allows you to ask password when you turn on your radio to avoid any unauthorized use. Password Query option should be turned **on** to use this feature.

To enter the PASSWORD menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter PASSWORD menu from the SETTINGS menu.
2. Press the Left Soft Key to enter PASSWORD menu.



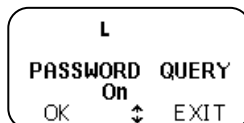
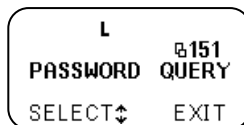
To exit the PASSWORD menu:

1. Use the Right Soft Key to EXIT and return to SETTINGS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.1.5.1. PASSWORD QUERY Menu (151)

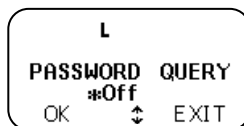
To enter the PASSWORD QUERY menu:

1. Use the Left Soft Key to enter PASSWORD QUERY menu from the PASSWORD menu.
2. Press the Left Soft Key to enter PASSWORD QUERY menu.
3. To toggle between options, use Up/Down Keys.
4. To turn PASSWORD QUERY On, press the Left Soft Key pointing to OK and a star will appear next to the active setting.



To exit the PASSWORD QUERY menu:

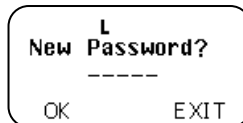
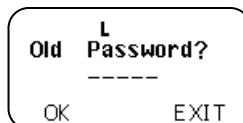
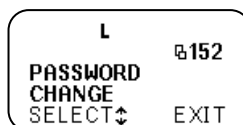
1. Use the Right Soft Key to EXIT and return to PASSWORD menu.
2. Press the Right Soft Key pointing to EXIT to return to SETTINGS menu.



3.1.5.2. PASSWORD CHANGE Menu (152)

To enter the PASSWORD CHANGE menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter PASSWORD CHANGE menu from the PASSWORD menu.
2. Press the Left Soft Key to enter PASSWORD CHANGE menu.
3. You will be asked to enter your old password. Write your old password and press the Left Soft Key.
4. You will be asked to enter your new password. Write your new password and press the Left Soft Key.
5. You will be asked to verify your new password by re-entering it. Write your new password again and press the Left Soft Key.
6. PASSWORD CHANGED SUCCESSFULLY will appear on the LCD.





If you enter your old password incorrectly, an error message will appear as **INVALID PASSWORD** and radio will return to **Standby** mode.



If your two entries for your new password are different, an error message will appear as **NEW PASSWORD ENTRIES MISMATCH** and radio will return to Standby mode.

To exit the PASSWORD CHANGE menu:

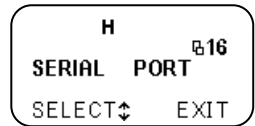
1. Use the Right Soft Key to EXIT and return to PASSWORD menu.
2. Press the Right Soft Key pointing to EXIT and return to SETTINGS menu.

3.1.6. SERIAL PORT Menu (16)

Serial ports of your radio can also allow your radio to connect to different terminals at different rates to perform various tasks. For each different task, your radio is adjusted to proper settings by SERIAL PORT menu.

To enter the SERIAL PORT menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter SERIAL PORT menu from the SETTINGS menu.
2. Press the Left Soft Key to enter SERIAL PORT menu.
3. To toggle between options, use Up/Down Keys and select;



- **DATA:** If you plan to program or perform data communication over your radio. Press the Left Soft Key pointing to OK and a star will appear next to the active setting. (A star permanently appears next to DATA if accessory/connection cable is not attached).

To exit the SERIAL PORT menu:

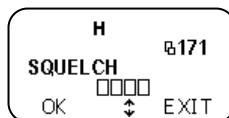
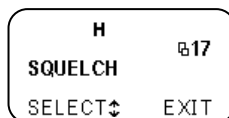
1. Use the Right Soft Key to EXIT and return to SETTINGS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.1.7. SQUELCH Menu (17)

In analog mode, Squelch control filters weak signals and radio frequency noise so that you can more clearly hear the messages you want. You can think of it as a variable barrier that blocks what you do not want to hear.

To enter the SQUELCH menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter SQUELCH menu from the SETTINGS menu.
2. Press the Left Soft Key to enter SQUELCH menu.
3. SQUELCH intensity is indicated by 4 segments as either full or empty squares at the bottom of the display. Press Up/Down Keys to select your desired SQUELCH level. Press the Left Soft Key pointing to OK and return to SQUELCH menu.



To exit the SQUELCH menu:

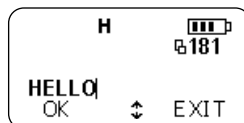
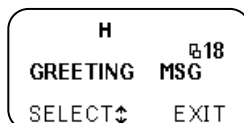
1. Use the Right Soft Key to EXIT and return to SETTINGS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.1.8. GREETING MESSAGE Menu (18)

MIDLAND 4700 Syn-Tech III P25 Mobile Radio greets you with the message you prefer right after your radio's logo. Your GREETING MESSAGE can be 10 characters long maximum.

To enter the GREETING MSG menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter GREETING MSG menu from the SETTINGS menu.
2. Press the Left Soft Key to enter GREETING MSG menu.
3. Write the greeting message you wish to see when you turn on your radio.
4. Press the Left Soft Key pointing to OK and return to GREETING MSG menu.



To exit the GREETING MSG menu:

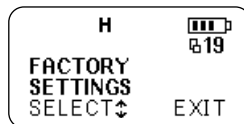
1. Use the Right Soft Key to EXIT and return to SETTINGS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.1.9. FACTORY SETTINGS Menu (19)

Syn-Tech III P25 Mobile Radio allows you to restore factory settings if you have changed something from the way you originally received your radio and it seems now to be malfunctioning. This feature lets you re-initialize the original factory settings.

To enter the FACTORY SETTINGS menu:

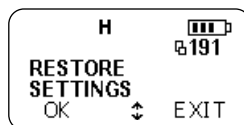
1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter FACTORY SETTINGS menu from the SETTINGS menu.



2. Use the Left Soft Key to enter RESTORE SETTINGS menu.

3. Press the Left Soft Key pointing to OK to restore settings.

4. FACTORY SETTINGS RESTORED will show on the LCD and radio returns to Standby mode.



To exit the FACTORY SETTINGS menu:

1. Use the Right Soft Key to EXIT and return to SETTINGS menu.



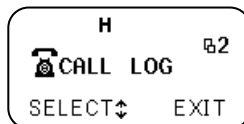
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.2. CALL LOG Menu (2)

The CALL LOG menu allows you to view a complete list of call activity as 10 LAST CALLER and 10 LAST CALLED.

To enter the CALL LOG menu:

1. In Standby mode, use Up/Down Keys to scroll through and press the Left Soft Key to enter CALL LOG menu.



To exit the CALL LOG menu:

1. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.2.1. LAST CALLER Menu (21)

To enter the LAST CALLER menu:

1. Press the Left Soft Key to enter LAST CALLER menu from the CALL LOG menu.

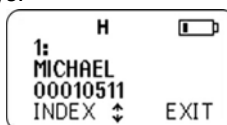
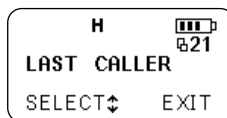
2. To scroll up or down among LAST CALLERS, use Up/Down Keys.

3. Press the Left Soft Key pointing to INDEX to search the directory.

To exit the LAST CALLER menu:

1. Use the Right Soft Key to EXIT and return to CALL LOG menu.

2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.2.2. LAST CALLED Menu (22)

To enter the LAST CALLED menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter LAST CALLED menu from the CALL LOG menu.

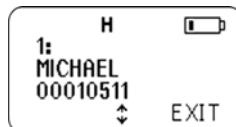
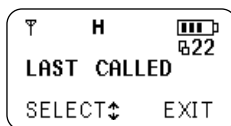
2. To scroll up or down among LAST CALLEDs, use Up/ Down Keys.

3. Use the Right Soft Key to EXIT and return to LAST CALLED menu.

To exit the LAST CALLED menu:

1. Use the Right Soft Key to EXIT and return to CALL LOG menu.


2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.3. SMS Menu (3)

The SMS menu allows you to send or receive SMS messages up to 160 characters long max.

If you have any unread messages,  icon will show on the top line of the LCD.

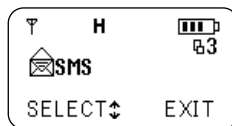
You can store up to 20 SMS messages. If you receive a message when your 20 SMS messages quota is full, your radio will ask you to delete at least one of your SMS messages to receive the new one by blinking the  icon.

To enter the SMS menu:

1. In Standby mode, use Up/Down Keys to scroll through and press the Left Soft Key to enter SMS menu.

To exit the SMS menu:

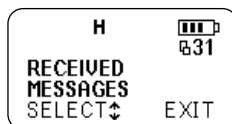
1. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.3.1. RECEIVED MESSAGES Menu (31)

To enter the RECEIVED MESSAGES menu:

1. Press the Left Soft Key to enter RECEIVED MESSAGES menu from the SMS menu.
2. To scroll up or down among RECEIVED MESSAGEs, use Up/Down Keys.
3. To edit a RECEIVED MESSAGE, press the Left Soft Key.
4. Use the Right Soft Key to EXIT and return to MSG EDIT / RECEIVED MESSAGES menu.
5. Press the Right Soft Key pointing to EXIT and return to SMS menu.



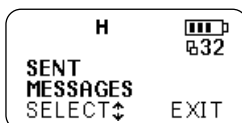
To exit the RECEIVED MESSAGES menu:

1. Use the Right Soft Key to EXIT and return to SMS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.3.2. SENT MESSAGES Menu (32)

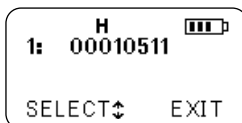
To enter the SENT MESSAGES menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter SENT MESSAGES menu from the SMS menu.
2. To scroll up or down among SENT MESSAGEs, use Up/Down Keys.
3. To edit a SENT MESSAGE, press the Left Soft Key.
4. Use the Right Soft Key to EXIT and return to MSG EDIT / SENT MESSAGES menu.
5. Press the Right Soft Key pointing to EXIT and return to SMS menu.




To exit the SENT MESSAGES menu:

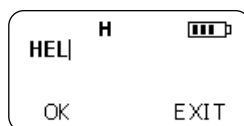
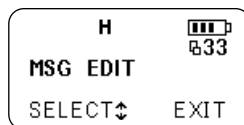
1. Use the Right Soft Key to EXIT and return to SMS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.




3.3.3. MESSAGE EDIT Menu (33)

To enter the MSG EDIT menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter MSG EDIT menu from the SMS menu.
2. Press the Left Soft Key to write/edit a message up to 160 characters long max.
3. Write your message using keypad. (See section 2.2 to help you to identify alphanumeric key definitions and character map). If you want to erase any letter, use Up/Down Keys to proceed and press  key to delete the last character.



WARNING

If you press and hold  key more than 500 msec, your radio returns to Standby mode.

4. Press the Left Soft Key pointing to OK to proceed to next screen and choose the other user from INDEX by pressing the Left Soft Key.
5. Press the Left Soft Key pointing to SEND to send the message. Then your radio returns to Standby mode and a message report will show on the LCD soon.

To exit the MSG EDIT menu:

1. Use the Right Soft Key to EXIT and return to SMS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.4. PREDEFINED MESSAGES Menu (4)

The PREDIFINED MESSAGES menu allows you to send or receive predefined messages by the programmer up to 20 characters long max. 20 predefined messages can be stored and you can find these predefined messages in MESSAGE LIST menu.

You can store up to 20 PREDIFINED MESSAGES. If you receive a message when your 20 PREDIFINED MESSAGES quota is full, each new message will erase the oldest message on a first-in first-out basis.

To enter the PREDIFINED MESSAGES menu:

1. In Standby mode, use Up/Down Keys to scroll through and press the Left Soft Key to enter PREDIFINED MESSAGES menu.

To exit the PREDIFINED MESSAGES menu:

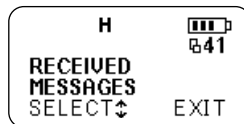


1. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.4.1. RECEIVED MESSAGES Menu (41)

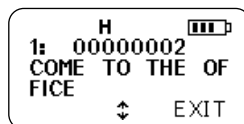
To enter the RECEIVED MESSAGES menu:

1. Press the Left Soft Key to enter RECEIVED MESSAGES menu from the PREDIFINED MESSAGES menu.
2. To scroll up or down among RECEIVED MESSAGEs, use Up/Down Keys.
3. Press the Right Soft Key to EXIT and return to PREDIFINED MESSAGES menu.



To exit the RECEIVED MESSAGES menu:

1. Use the Right Soft Key to EXIT and return to PREDIFINED MESSAGES menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.4.2. SENT MESSAGES Menu (42)

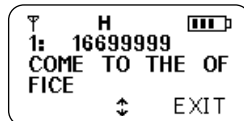
To enter the SENT MESSAGES menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter SENT MESSAGES menu from the PREDIFINED MESSAGES menu.
2. To scroll up or down among SENT MESSAGEs, use Up/Down Keys.
3. Use the Right Soft Key to EXIT and return to SENT MESSAGES menu.
4. Press the Right Soft Key pointing to EXIT to return to PREDIFINED MESSAGES menu.



To exit the SENT MESSAGES menu:

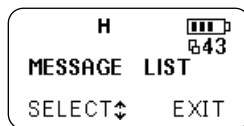
1. Use the Right Soft Key to EXIT and return to PREDIFINED MESSAGES menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.4.3. MESSAGE LIST Menu (43)

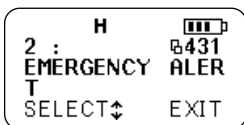
To enter the MESSAGE LIST menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter MESSAGE LIST menu from the PREDIFINED MESSAGES menu.

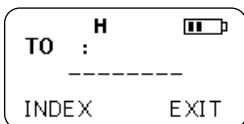


2. To scroll up or down among predefined messages, use Up/Down Keys.

3. Press the Left Soft Key pointing to SELECT to proceed to next screen and choose the other user from INDEX by pressing the Left Soft Key.



4. Press the Left Soft Key pointing to SEND to send the message. Then your radio returns to Standby mode and a message report will show on the LCD soon.



To exit the MESSAGE LIST menu:

1. Use the Right Soft Key to EXIT and return to PREDIFINED MESSAGES menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.5. STATUS Menu (5)

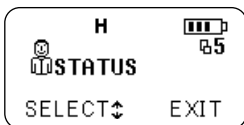
The STATUS menu allows you to state your present status, send your current status or request and receive other users' status. You can choose any of 30 predefined status options to state your current status in case it's inquired by other stations.



MIDLAND 4700 Series APCO25 Vehicular Radio resets your status info when you turn off your radio. Your current status is selected as the 1st present status option each time you turn on your radio.

To enter the STATUS menu:

1. In Standby mode, use Up/ Down Keys to scroll through and press the Left Soft Key to enter STATUS menu.



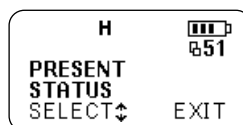
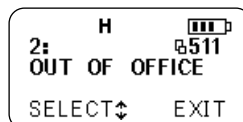
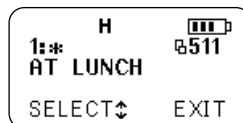
To exit the STATUS menu:

1. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.5.1. PRESENT STATUS Menu (51)

To enter the PRESENT STATUS menu:

1. Press the Left Soft Key to enter PRESENT STATUS menu from the STATUS menu.
2. To scroll up or down among status options, use Up/Down Keys.
3. Press the Left Soft Key to select your current status.
4. Press the Right Soft Key to EXIT and return to PRESENT STATUS menu.



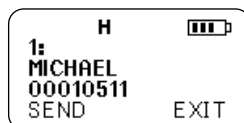
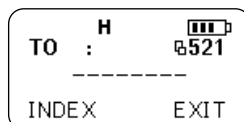
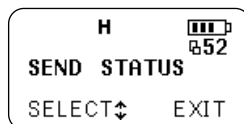
To exit the PRESENT STATUS menu:

1. Use the Right Soft Key to EXIT and return to STATUS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.5.2. SEND STATUS Menu (52)

To enter the SEND STATUS menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter SEND STATUS menu from the STATUS menu.
2. Press the Left Soft Key pointing to SELECT to proceed to next screen and choose the other user from INDEX by pressing the Left Soft Key.
3. Press the Left Soft Key pointing to SEND to send your status. Then your radio returns to Standby mode and a message report will show on the LCD soon.



To exit the SEND STATUS menu:

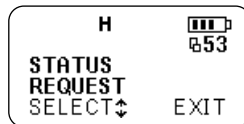
1. Use the Right Soft Key to EXIT and return to STATUS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.5.3. STATUS REQUEST Menu (53)

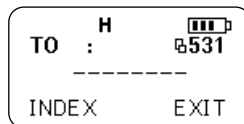
To enter the STATUS REQUEST menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter STATUS REQUEST menu from the STATUS menu.



2. Press the Left Soft Key pointing to SELECT to proceed to next screen and choose the other user from INDEX by pressing the Left Soft Key.

3. Press the Left Soft Key pointing to SEND to request other user's status. Then your radio returns to Standby mode and a message report will show on the LCD soon.



To exit the STATUS REQUEST menu:

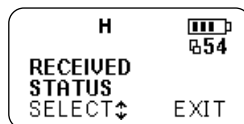
1. Use the Right Soft Key to EXIT and return to STATUS menu.

2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.5.4. RECEIVED STATUS Menu (54)

To enter the RECEIVED STATUS menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter RECEIVED STATUS menu from the STATUS menu.



2. Press the Left Soft Key to list last 10 RECEIVED STATUS messages.

3. Press the Right Soft Key pointing to EXIT to return to RECEIVED STATUS menu.

To exit the RECEIVED STATUS menu:

1. Use the Right Soft Key to EXIT and return to STATUS menu.

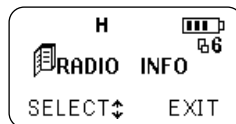
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.6. RADIO INFO Menu (6)

The RADIO INFO menu allows you to view your radio's IDENTs, SOFTWARE, HARDWARE, BATTERY and MEASUREMENTS data any time you wish.

To enter the RADIO INFO menu:

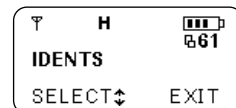
1. In Standby mode, use Up/Down Keys to scroll through and press the Left Soft Key to enter RADIO INFO menu.



To exit the RADIO INFO menu:

1. Press the Right Soft Key pointing to EXIT.

3.6.1. IDENTs Menu (61)



To enter the IDENTs menu:

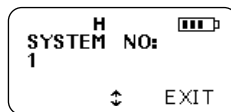
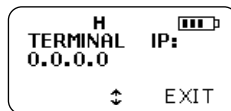
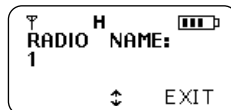
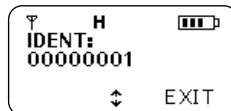
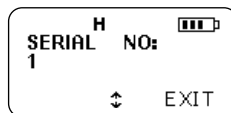
1. Press the Left Soft Key to enter IDENTs menu from the RADIO INFO menu.

2. Use the Left Soft Key to enter IDENTs menu.

3. Use Up/Down Keys to observe the following data:

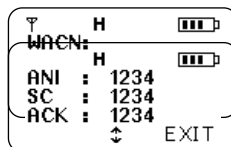
- SERIAL NO
- IDENT
- RADIO NAME
- TERMINAL IP
- SYSTEM NO
- WACN
- ANI, SC and ACK

4. Press the Right Soft Key to EXIT and return to IDENTs menu.

**To exit the IDENTs menu:**

1. Use the Right Soft Key to exit and return to RADIO INFO menu.

2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



See abbreviations and acronyms on page iv.

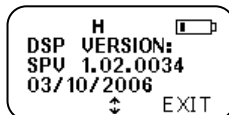
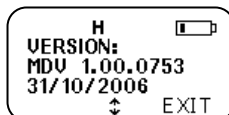
3.6.2. SOFTWARE Menu (62)

To enter the SOFTWARE menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter SOFTWARE menu from the RADIO INFO menu.
2. Use the Left Soft Key to enter SOFTWARE menu.
3. Use Up/Down Keys to observe the following data:

- VERSION
- DSP VERSION

4. Press the Right Soft Key to EXIT and return to SOFTWARE menu.



See abbreviations and acronyms on page iv.

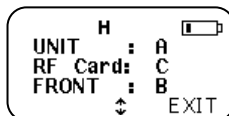
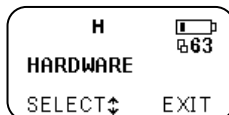
To exit the SOFTWARE menu:

1. Use the Right Soft Key to EXIT and return to RADIO INFO menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

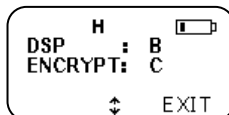
3.6.3. HARDWARE Menu (63)

To enter the HARDWARE menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter HARDWARE menu from the RADIO INFO menu.
2. Use the Left Soft Key to enter HARDWARE menu.
3. Use Up/Down Keys to observe the UNIT, RF Card, FRONT, DSP, ENCRYPTION data.



4. Press the Right Soft Key to EXIT and return to HARDWARE menu.



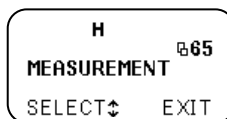
To exit the HARDWARE menu:

1. Use the Right Soft Key to EXIT and return to RADIO INFO menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

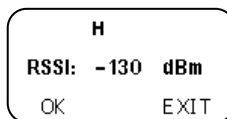
3.6.4. MEASUREMENT Menu (65)

To enter the MEASUREMENT menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter MEASUREMENT menu from the RADIO INFO menu.

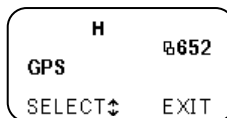


2. Use the Left Soft Key to observe RSSI level in dBm and press the Right Soft Key to EXIT.

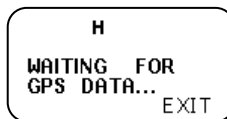


3. Use the Left Soft Key to observe GPS position (latitude and longitude) and time (hh:mm:ss) data, press the Right Soft Key to EXIT.

(If you have not connected a GPS device to your radio, WAITING FOR GPS DATA will appear on the LCD. Press the Right Soft Key to EXIT).



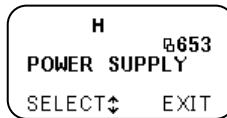
4. Use the Left Soft Key to observe POWER SUPPLY VOLTAGE value, press the Right Soft Key to EXIT.



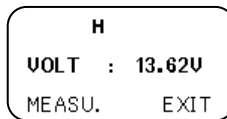
5. Press the Right Soft Key to EXIT and return to MEASUREMENT menu.

To exit the MEASUREMENT menu:

1. Use the Right Soft Key to EXIT and return to RADIO INFO menu.



2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



See abbreviations and acronyms on page iv.

3.7. CHANNEL PARAMETERS Menu (7)

CHANNEL PARAMETERS Menu has the following submenu options:

CHANNEL SCAN (71): Channel Scan menu allows you to add/remove a channel or view the Channel Scan List.

GROUPS (72): Groups menu allows you to view the groups to which your radio belongs.

GROUP SCAN (73): Group Scan menu allows you to receive the messages from all groups in your group list or to receive messages from your current group only.

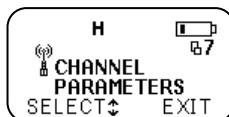
CHANNELS (74): Channels menu allows you to modify pre-loaded channel properties such as channel mode, receive/transmit frequency, transmit power, channel name, transmission time out, receive/transmit tones, channel spacing, ANI type etc.

ZONES (75): Zones menu allows you to load and set frequency maps for the selected zone.

CLONER (76): Cloner menu allows you to simply clone your radio.

To enter the CHANNEL PARAMETERS menu:

1. In Standby mode, use Up/Down Keys to scroll through and press the Left Soft Key to enter CHANNEL PARAMETERS menu.



To exit the CHANNEL PARAMETERS menu:

1. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.7.1. CHANNEL SCAN Menu (71)

To enter the CHANNEL SCAN menu:

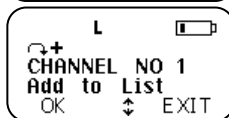
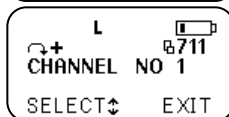
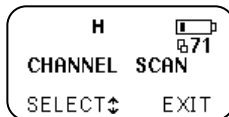
1. Press the Left Soft Key to enter CHANNEL SCAN menu from the CHANNEL PARAMETERS menu.

2. Use the Left Soft Key to enter CHANNEL SCAN menu.

3. Use Up/Down Keys to list the channels and press the Left Soft Key to select the channels you want to scan. If the channel is added to the list, $\curvearrowright+$ sign otherwise $\curvearrowright-$ sign shows on the display.

4. To remove a channel from Channel Scan List, press Left Soft Key to select and remove the desired channel from the channel scan list.

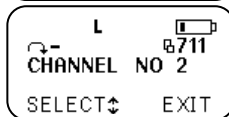
5. Press the Right Soft Key to EXIT and return to CHANNEL



SCAN menu.

To exit the CHANNEL SCAN menu:

1. Use the Right Soft Key to EXIT and return to CHANNEL PARAMETERS menu.

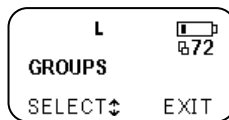


2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

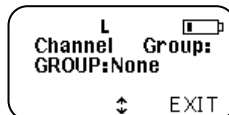
3.7.2. GROUPS Menu (72)

To enter the GROUPS menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter GROUPS menu from the CHANNEL PARAMETERS menu.

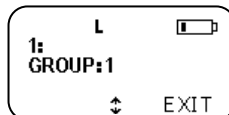


2. When you enter the GROUPS menu, Default Group number appears on the display. If group number is not selected during programming, "None" shows on the display.



3. Use Up/Down Keys to scroll through the GROUP list.

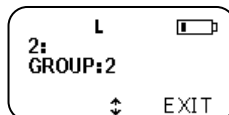
4. Press the Right Soft Key to EXIT and return to GROUPS menu.



To exit the GROUPS menu:

1. Use the Right Soft Key to EXIT and return to CHANNEL SCAN menu.

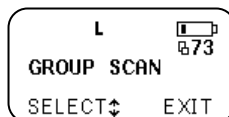
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.7.3. GROUP SCAN menu (73)

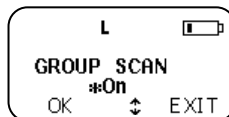
To enter the GROUP SCAN menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter GROUP SCAN menu from the SCAN menu.



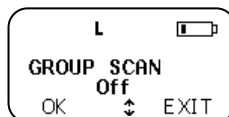
2. Press the Left Soft Key to enter GROUP SCAN menu.

3. Use Up/Down Keys to select GROUP SCAN option as **on** or **off**. (Current setting will be shown by a star next to the selected option).



4. Press the Left Soft Key to confirm the setting.

5. Press the Right Soft Key to EXIT and return to GROUP SCAN menu.



To exit the GROUP SCAN menu:

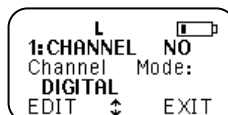
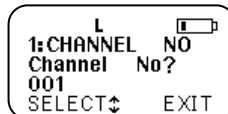
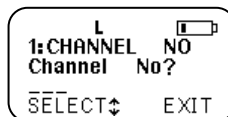
1. Use the Right Soft Key to EXIT and return to SCAN menu.

2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

3.7.4. CHANNELS Menu (74)

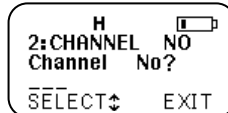
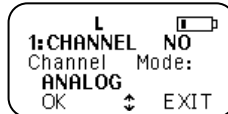
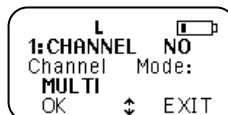
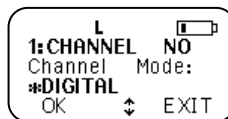
To enter the CHANNELS menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter CHANNELS menu from the CHANNEL PARAMETERS menu.
2. Enter the channel number and press the Left Soft Key to select.
3. Press the Left Soft Key pointing to EDIT to observe and Up/Down Keys to scroll through the current settings of the listed channel.
4. Press the Right Soft Key to EXIT. Press the Left Soft Key to confirm or the Right Soft Key to EXIT and return to CHANNEL NO menu.
5. Press the Right Soft Key to EXIT and return to CHANNELS menu.



To exit the CHANNELS menu:

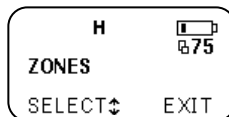
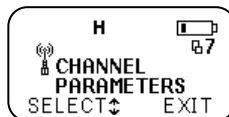
1. Use the Right Soft Key to EXIT and return to RADIO INFO menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.7.5. ZONES Menu (75)

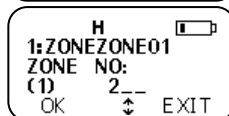
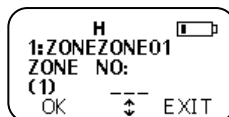
To enter the ZONES menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter ZONES menu from the CHANNEL PARAMETERS menu.
2. Use keypad to enter ZONE NO and press OK to confirm to return the radio to Standby mode.
3. Press the Right Soft Key to EXIT and return to ZONE NO menu.



To exit the ZONES menu:

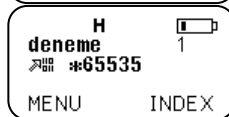
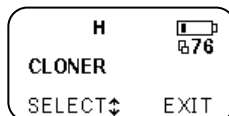
1. Use the Right Soft Key to EXIT and return to CHANNEL PARAMETERS menu.
2. Press the Right Soft Key pointing to EXIT and return the radio to Standby mode.



3.7.6. CLONER Menu (76)

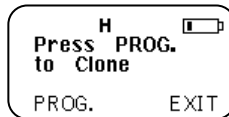
To enter the CLONER menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter CLONER menu from the CHANNEL PARAMETERS menu.
2. To start cloning press the Left Soft Key pointing to "PROG".
3. Press Right Soft Key to EXIT from menu and return to CLONER menu.



To exit the CLONER menu:

1. Use the Right Soft Key to EXIT and return to CHANNEL PARAMETERS menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



3.8. ENCRYPTION Menu

ENCRPTION Menu allows you to view Key Version, Algorithm, CIK ID and Test Results.

To enter the ENCRYPTION menu:

1. In Standby mode, use Up/Down Keys to scroll through and press the Left Soft Key to enter ENCRYPTION menu.

To exit the ENCRYPTION menu:

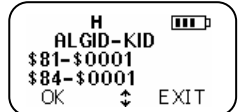
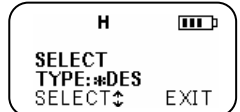
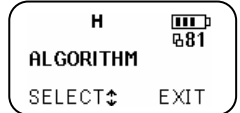
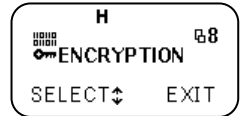
1. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.

To select the ENCRYPTION ALGORITHM:

1. Press the Left Soft Key pointing to SELECT to select encryption algorithm under ALGORITHM menu. Use Up/Down keys to view supported algorithms.



See abbreviations and acronyms on page iv.



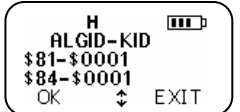
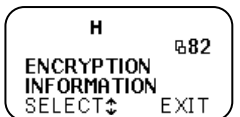
3.8.1. ENCRYPTION INFORMATION Menu

To enter the ENCRYPTION INFORMATION menu:

1. Use Up/Down Keys to scroll through and press the Left Soft Key to enter ENCRYPTION INFORMATION menu from the ENCRYPTION menu.
2. Press the Left Soft Key pointing to SELECT to enter ENCRYPTION INFORMATION menu.
3. Use Up/Down keys to view ENCRYPTION INFORMATION.
4. Press the Right Soft Key to EXIT and return to ENCRYPTION INFORMATION menu.

To exit the ENCRYPTION INFORMATION menu:

1. Use the Right Soft Key to EXIT and return to ENCRYPTION menu.
2. Press the Right Soft Key pointing to EXIT to return the radio to Standby mode.



4. ACCESSORIES

MIDLAND provided original accessories give you operational efficiency, flexibility and easier use in difficult working conditions.

ACCESSORY	MIDLAND P/N
Vehicular Microphone Assembly	ACC4425
Loudspeaker Box	ACC1425
Under dash mounting kit	560-090-0091
Vehicular Radio Battery Connection Cable Assembly	950-040-0035

5. MAINTENANCE

- Your radio does not require any periodic maintenance.
- Keep the radio and charger clean and away from dust, humidity, dense sunlight, extreme heat sources and liquids.
- Avoid exposing the radio and relevant accessories to cleaning solvents, aerosol sprays, adhesive agents, paints etc. Chemical reactions with such agents will destroy seals, case, display and finish.
- If the radio is exposed to dirt, wipe with a soft and moist cloth at least once a week to prevent build-up of dirt and dust deposits.

6. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE(s)	SOLUTION(s)
No display on LCD when radio is turned on	Fuse is blown or connections are damaged.	Check fuse and connections. Replace the faulty items.
No sound from Loudspeaker	Volume level is too low or squelch level is too deep	Re-adjust volume and/or squelch level.
No response to key press	Key lock is on	Unlock the keypad by pressing Key Lock button.
No answer to calls	Out of range of other stations or signal is blocked by terrain	Switch to H (High) output power or Move closer until you have a "line-of-sight" to the other station.

7. SPECIFICATIONS

GENERAL SPECIFICATIONS	
Modulation	16K0F3E, 11K0F3E , 8K0D1E, 8K0F1E
Data Rate	P25 : 9.6 kb/s
Symbol Rate	P25 : 4.8 kb/s
Protocol	Project 25-CAI : 4.4 kb/s IMBE
Encryption Algorithms	DES-OFB, AES
Channel Capacity	999
Operating Voltage Range	13.6 Vdc \pm % 20 (10.88-16.32 Vdc)
St-by Current Drain (illuminations off)	\leq 0.4 A
RX Current Drain	\leq 1.5
TX Current Drain	\leq 8.5 A
Display	64x128 pixel LCD
Keypad	18 back lit
Dimensions (HxWxL)	46x165x165 mm (projections not included)
Weight	1.50 kg

ENVIROMENTAL SPECIFICATIONS	
Operating Temperature Range	-30°C / +60°C
Storage Temperature Range	-40°C / +85°C
Humidity	% 95, 50°C
ESD	IEC 801- 2KV
Water and Dust Protection	IP65, MIL-STD

MILITARY STANDARDS 810C/D/E/F								
	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F	
	Method	Proc./ Cat.	Method	Proc./ Cat.	Method	Proc./ Cat.	Method	Proc./ Cat.
Low Pressure	500.1	I	500.2	II	500.3	II	500.4	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Hot
Low Temperature	502.1	I	502.2	I/C1, II/C2	502.3	I/C1, II/C2	502.4	I/C1, II/C2
Temperature Shock	503.1	–	503.2	I/A1-C2	503.3	I/A1-C2	503.4	I/Hot-C2
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	–
Salt Fog	509.1	–	509.2	–	509.3	–	509.4	–
Sand and Dust	510.1	I	510.2	I, II	510.3	I, II	510.4	I, II
Vibration	514.2	VIII/F, XI/H	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24, II/5
Shock	516.2	I, II, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI

7.1. Receiver Technical Specifications

RECEIVER SPECIFICATIONS		
	VHF	UHF
Frequency Range	136-174 MHz	380-470 MHz
Frequency Separation	Full Bandsplit	Full Bandsplit
Channel Spacing	12.5 / 20 / 25 / 30 kHz	12.5 / 20 / 25 / 30 kHz
Frequency Step	2.5 / 3.125 kHz	2.5 / 3.125 kHz
Rated Audio Output Power *	7.5 W / 8 Ω	7.5 W / 8 Ω
Frequency Stability * (-30°C / +60°C; 25°C ref)	± 2.5 ppm	± 1.5 ppm
Analog Sensitivity * 12 dB SINAD	≤ -119 dBm	≤ -118 dBm
Digital Sensitivity ** 5% BER	≤ -120 dBm	≤ -119 dBm
1% BER	≤ -117 dBm	≤ -116 dBm
Adjacent Channel Rejection Analog 25 kHz channel *	≥ 75 dB	≥ 75 dB
Analog 12.5 kHz channel *	≥ 63 dB	≥ 63 dB
Digital 12.5 kHz kanal **	≥ 63 dB	≥ 63 dB
Intermodulation Rejection *	≥ 75 dB	≥ 75 dB
Spurious Response Rejection*	≥ 85 dB	≥ 85 dB
Hum and Noise Ratio Analog 25 kHz channel *	≥ 48 dB	≥ 42 dB
Analog 12.5 kHz channel *	≥ 42 dB	≥ 36 dB
Digital 12.5 kHz kanal **	≥ 50 dB	≥ 50 dB
Audio Distortion *	≤ 3 %	≤ 3 %

* Measured in the analog mode per EIA-603 under nominal conditions.

** Measured in the digital mode per TIA-102.CAAA under nominal conditions.

7.2. Transmitter Technical Specifications

TRANSMITTER SPECIFICATIONS		
	VHF	UHF
Frequency Range	136-174 MHz	380-470 MHz
Frequency Separation	Full Bandsplit	Full Bandsplit
Channel Spacing	12.5 / 20 / 25 / 30 kHz	12.5 / 20 / 25 / 30 kHz
Frequency Step	2.5 / 3.125 kHz	2.5 / 3.125 kHz
Rated RF Output Power *	5-50 W	5-40 W
Frequency Stability * (-30°C / +60°C; 25°C ref)	± 2.5 ppm	± 1.5 ppm
Modulation Limiting *		
Analog 25 kHz channel	± 5.0 kHz	± 5.0 kHz
Analog 12.5 kHz channel	± 2.5 kHz	± 2.5 kHz
C4FM Modulation Fidelity **		
RMS Error	≤ 2 %	≤ 2 %
C4FM Deviation	1800 ±100 Hz	1800 ±100 Hz
Spurious Emissions * (Conducted and Radiated)	≤ -70 dBc	≤ -70 dBc
Audio Frequency Response * (6 dB/Octave Pre-emphasis from 300 to 3000 Hz)	+1, -3 dB	+1, -3 dB
Hum and Noise Ratio		
Analog 25 kHz channel *	≥ 52 dB	≥ 46 dB
Analog 12.5 kHz channel *	≥ 46 dB	≥ 40 dB
Audio Distortion *	≤ 1 %	≤ 1 %

* Measured in the analog mode per EIA-603 under nominal conditions.

** Measured in the digital mode per TIA-102.CAAA under nominal conditions.



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