TP-8000 Series User Manual

Model TP-8102/8102R (VHF)
Model TP-8402/8402R (UHF)

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SPECIFICATIONS

MODEL: TP-8102/8102R

GENERAL

Dimensions (Less Antenna) H x W x D	4.42" × 2.2" × 1.25" / 112.2 mm × 56 mm × 31.9 mm
Weight	
Radio (less battery)	4.7 oz. / 133 g.
with battery (2200mAH)	9.2 oz. / 261 g.
Programmable Channels	512 Channels
Channel Spacing	12.5 / 25 kHz
Power Source	7.5V DC Rechargeable Li-Ion 2200 mAh battery pack
Current Drain (maximum)	
Receive Standby mode	65 mA
Receive Full Audio	350 mA
Transmit at 5 Watts	1.6 A

TRANSMITTER

Frequency Range	136 ~ 174 MHz
Frequency Stability	±2.5 ppm (-30 to +60℃)
RF Power Output	5 Watts / 2 Watts
Spurious and Harmonic	-65dB
FM Hum and Noise	40dB (12.5 kHz), 45dB (25 kHz)
Audio Distortion	5% maximum
Audio Frequency Response	+1, -3dB from 6dB per octave pre-emphasis Characteristic from 300 ~ 3000Hz

RECEIVER

Frequency Range	136 ~ 174 MHz
Sensitivity	.282uV 12 dB SINAD
Squelch Sensitivity	.25uV 10dB SINAD
Selectivity	60dB (12.5kHz), 65dB (25kHz)
Spurious and Harmonic Rejection	70dB
Inter-modulation	60dB
FM Hum and Noise	40dB
Audio Output Power	1 Watt across a 16-ohm load
Audio Distortion	Less than 5% at rated output
Audio Response	+1, -3 dB from 6dB per octave de-emphasis Characteristic from 300 ~ 3000Hz

SPECIFICATIONS

MODEL: TP-8402/8402R

GENERAL

Dimensions (Less Antenna) H x W x D	4.42" × 2.2" × 1.25" / 112.2 mm × 56 mm × 31.9 mm
Weight	
Radio (less battery)	4.7 oz. / 133 g.
with battery (2200mAH)	9.2 oz. / 261 g.
Programmable Channels	512 Channels
Channel Spacing	12.5 / 25 kHz
Power Source	7.5V DC Rechargeable Li-ion 2200 mAh battery pack
Current Drain (maximum)	
Receive Standby mode	60 mA
Receive Full Audio	350 mA
Transmit at 4 Watts	1.4 A

TRANSMITTER

Frequency Range	400 ~ 470 MHz
Frequency Stability	±2.5 ppm (-30 to +60℃)
RF Power Output	4 Watts / 2 Watts
Spurious and Harmonic	-65dB
FM Hum and Noise	40dB (12.5 kHz), 45dB (25 kHz)
Audio Distortion	5% maximum
Audio Frequency Response	+1, -3dB from 6dB per octave pre-emphasis
	Characteristic from 300 ~ 3000Hz

RECEIVER

Frequency Range	400 ~ 470 MHz
Sensitivity	.282uV 12 dB SINAD
Squelch Sensitivity	.25uV 10dB SINAD
Selectivity	60dB (12.5kHz), 65dB (25kHz)
Spurious and Harmonic Rejection	70dB
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Audio Output Power	1 Watt across a 16-ohm load
Audio Distortion	Less than 5% at rated output
Audio Response	+1, -3 dB from 6dB per octave de-emphasis
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TP-8000 RADIO SERIES MODEL NUMBERS

Model Number	Description
TP-8102	512 Channel, 5 Watt, VHF 136 - 174 MHz Portable Radio
TP-8402	512 Channel, 4 Watt, UHF 400 - 470 MHz Portable Radio
TP-8102R	512 Channel, 5 Watt, VHF 136 - 174 MHz Portable Radio with Recording Capability
TP-8402R	512 Channel, 4 Watt, UHF 400 - 470 MHz Portable Radio with Recording Capability

FEATURES

The TP-8000 series is designed as a rugged and lightweight radio to deliver clear, reliable communications for your industrial or commercial needs. The IP-67 (submersible) rating provides use in challenging environments.

This feature rich portable can be programmed for your specific application by an Authorized Maxon Sales and Service Dealer.

■ 512 channels

■ 10 character dot matrix display

■ CTCSS / DCS Tone capability

■ 6 programmable buttons

■ Voice inversion scrambler

■ Compander function

■ Dual Tone Multi - Frequency (DTMF)

■ Selectable channel spacing (12.5kHz / 25KHz)

■ Normal scanning and priority scanning

■ Time-Out Timer (TOT)

■ 2-Tone paging decode

■ BCL (Busy Channel Lock) / BCLO (Busy Channel Lock Override)

■ High/Low transmit power

■ 9 Step squelch control using RSSI (0~9)

■ Remote radio Stun/Revive (Uses 5 Tone)

■ Monitor

■ VOX

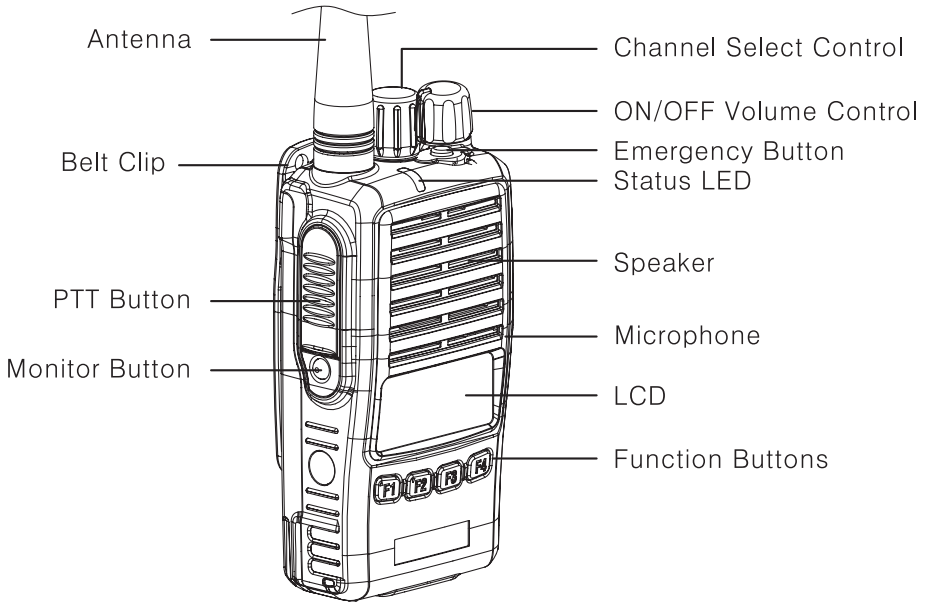■ Cloning capability

■ USB PC Programming

Controls

On/Off Volume Switch

Turn the volume control clockwise to turn the radio on and counter clockwise to turn the radio off. To increase the audio level, turn the control clockwise. By utilizing the index mark on the control knob, a relative volume setting can be visualized.

Channel Select Switch

Turn the Channel Select Switch clockwise to increase the channel number and counterclockwise to decrease the channel number. Up and down channel selection can also be accomplished through programming to utilize the function buttons on the face of the radio.

PTT Button

To put the radio into transmit mode, press the PTT button on the side of the radio. The LED on the top of the radio will illuminate red. Releasing the PTT button places the radio into standby or receive mode. It is recommended to talk about 2- 3"(5-7cm) away from the microphone for optimum sound quality.

Monitor Button (Side Button)

When the side button is software assigned as "Monitor", this function is activated.
The receiving status of the selected channel can be checked using the monitor button. Pressing the monitor button opens the squelch on the radio so any received audio can be heard.
Normal Mode: Press and hold of the monitor button for up to 2 seconds to monitor the channel for activity.
Continuous Mode: Press and hold the monitor button for more than 2 seconds, a beep tone is heard along with noise and the monitor function is continuously maintained. If the button is pressed again, the monitor function will be released.

Emergency (Red) Button

Typically this button is assigned as the "Emergency" button; however, it is programmable for other functions.
If pressed, an emergency alert/siren sound will be heard through the speaker in the radio and will transmit an emergency signal to other receiving user(s) radio(s) via the emergency channel.
For the TP-8000R series, this button serves as the default for instant playback of messages.

Function Buttons

There are 4 programmable function buttons on the front of the radio, F1 ~ F4. Each of these buttons is programmable and can be setup for 2 functions. A short press of less than 2 seconds and a long press of more than 2 seconds.

Speaker Microphone Jack

The speaker microphone jack is used for interfacing with external speaker microphones or similar accessories. It is also used for doing PC programming, wired cloning and tuning.
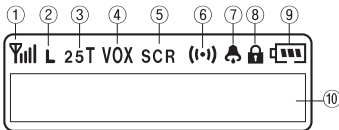
Indicators

Status Indication LED

The immediate status of TP-8000 series radio is indicated by the color of the LED. The status indication is as follows:
■ During transmission (holding PTT), the LED will indicate red.
■ When the radio is receiving (audio is heard), the LED will indicate green.
■ When the radio is receiving but the CTCSS/DCS code is not recognized, the LED will be blinking green.
■ When low battery condition, the LED will be blinking red and an alert tone will be generated.
■ When the radio is in cloning mode, the LED will blink orange.

Graphic LCD

A graphic LCD display indicates the various statuses and channel selection of the radio. The group/channel number, the frequency, or the pre-programmed name of the channel will be displayed in the text section of the LCD. The display also provides the menu operation. In addition, there are 9 status ICON indicators that display the various statuses of the radio.

① Signal strength indicator is ON when the radio receives RF signal. The icon indicates 5 levels of signal strength.
② Transmit power indicator "L" is ON when low power is selected.
③ 2 or 5 Tone mode indicator is ON when the channel is programmed for 2 or 5 Tone operation. "T" indicates a subtone is associated with the channel.
④ VOX indicator is ON when the VOX mode is activated.
⑤ Scrambler mode indicator is ON when the scrambler function is activated.
⑥ Compander mode indicator is ON when the compander function is activated.
⑦ Radio generates several kinds of alert tones when the alert tone function is activated. This indicator will be OFF when this function is deactivated.
⑧ Lock indicator is ON when function buttons are locked.
⑨ Battery capacity indicator. All the segments are ON when the battery is fully charged. Loss of battery power will be indicated by fewer or no bars in the icon. The battery indicator will blink when the battery power is very low and needs to be recharged.

⑩ The text space in the LCD can show one line of 10 characters.

The LCD backlighting can be programmed to turn on for a certain time after a button is pressed. It will remain turned on for the programmed length of time after the button is released. It can also be programmed to remain off at all times.

BATTERY PACKS

The following battery packs are available for use with the TP-8000 series radio.

■ TA-2200LI: Rechargeable Battery Packs (2200 mAh Li-ion)

■ TA-2600LI: Rechargeable Battery Packs (2600 mAh Li-ion)

The TP-8000 series Radio receives power from high-performance Li-ion batteries that are safe and highly reliable.
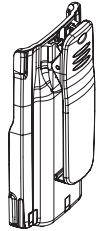
☞ **CAUTION**

It is recommended to only use authorized battery packs supplied by your Authorized Maxon Dealer or Maxon America, Inc.

Installing the Battery Pack

① ②
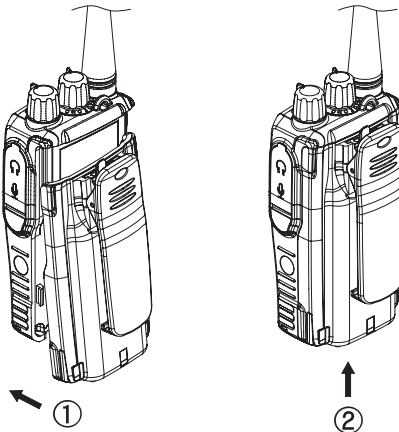
■ Ensure the ON/OFF volume switch is set to OFF position on the radio.

■ Hold the radio and battery pack with the back of them facing you. See Figure 1.

■ Align the hook back of the radio with the hook front side of the battery pack.

■ Press and slide the battery pack to the upper side of the radio until the battery release latch clicks into place.

Removing the Battery Pack

Battery
Latch

① ②
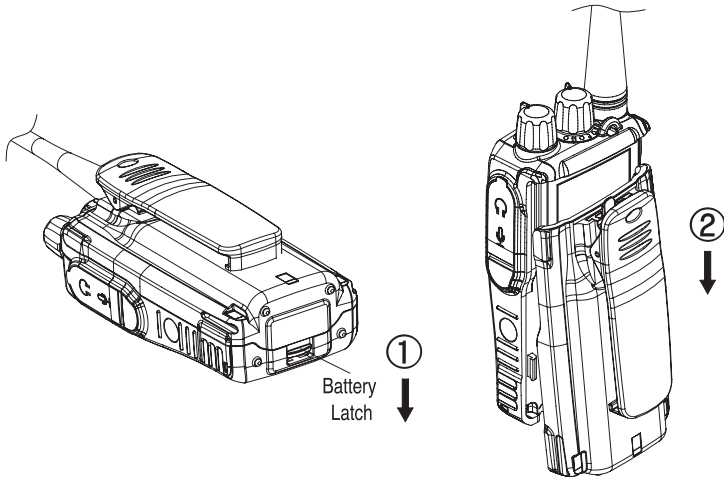
■ Ensure the ON/OFF volume switch is set to OFF position on the radio.

■ Press down the release latch and slide the battery pack down side of the radio.
See Figures 1 and 2.

CHARGER

The standard desktop charger was designed to charge the high capacity batteries (2200/2600 mAh Li-ion) of the TP-8000 series radios.
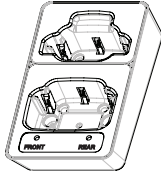
■ Input voltage: AC 85V ~ 250V
■ Battery: 2200 mAh Li-ion (2600 mAh Li-ion is optional.)
■ Rapid charging time: 3 hours and 30 minutes
■ Operating temperature: 0 ~ 50℃
■ Charging current: 900 mA (Rapid Charging)
Note: Charging for model TP-8102R requires charger model TA-800LAR.

Charging the Battery Pack

New batteries or batteries that have been stored for a long period of time should be fully charged before placing into service. Low battery voltage will shorten the talk range and reduce the performance of the radio.

How to Charge

■ Plug the standard desktop charger into an AC power outlet (100 ~ 200VAC).
■ The standard desktop charger has two slots for charging.
■ To recharge the radio with the battery installed, insert the radio into the front slot of the charger after you turned off the radio.
■ To recharge a battery only, insert the battery into either slot of the charger.
■ If both slots are being used for charging, the rear slot will not begin charging until the front slot LED indicates green.
■ Although the GREEN LED is on after recharging the battery, to ensure a complete charge, allow the battery to charge an additional 30 min.

S tatus	LED
Recharging	RED LED/ON
Charging Complete	GREEN LED/ON
Error	RED LED/BLINKING

☞ CAUTION
It is recommended that only Maxon supplied battery packs and chargers be used. Charging the battery on another manufacturer's charger can cause unexpected damage to the battery and the radio, voiding the warranty.

RADIO OPERATION

Installation and Removal of Antenna

Place the antenna into the antenna connector of the radio and turn the antenna clockwise for installation of antenna. To remove the antenna from the radio, turn the antenna counterclockwise.

☞ **CAUTION**

When installing the antenna, refrain from applying strong pressure or over tightening. Do not carry or pull on the antenna as this will damage the antenna and/or antenna connector, causing improper or failure of the radio operation.

Power On/Off

Turn the power switch clockwise to turn radio on; an alert sound is heard indicationg power is on. Turn power switch counterclockwise to turn radio off.

☞ **CAUTION**

If turning power on while pressing a button on the radio, the radio may enter into a special mode, In this case transmitting and receiving may not be possible.

Transmission

Press the PTT button on the left side of radio for transmission. Transmitting can occur after red LED is lit. If DTMF or 5 Tone is transmitted according to the programming of the radio, voice communication will not be transmitted until the red LED is lit. After transmitting, release PTT.

☞ **CAUTION**

Transmit may be prohibited if the BCLO or TOT functions is enabled.

Receiving

The radio operates in a receiving standby mode except for the transmitting period. The green LED is illuminated when the radio receives the RF signal. According to the settings of receiving and/or transmitting radio, the 2 Tone, DTMP, or 5 Tone tones can be heard.

If frequency is the same as current channel but sub-tone is not the same as current setting, the green LED will blink. In order to check if the current channel is in use, press the Monitor button (M) on the left side of the radio. If pressing the Monitor button (M) for more than 2 seconds, the Monitor function is activated with a "beep" sound. To release monitor function, press the monitor button again.

Changing Channels

The channel select switch is used for changing channels. Turn the channel switch clockwise to increase the channel number. Turn the channel switch counter-clockwise to decrease the channel number. The function buttons can also be programmed for changing of channels. Contact your Authorized Maxon Dealer for additional information.

Adjusting Transmitting Power

The transmitting power can be selected to High-Power or Low-Power mode if a pre-assigned button is programmed in the radio. Battery life may be extended by switching to Low-Power mode; please note that enabling Low-Power mode may decrease the range of communications. In the Low power mode, the icon "L" is displayed on the LCD.

SCAN Operating Mode

A Normal or Priority Scan function can be enabled if a pre-assigned button is programmed in the radio. If enabled, an alert "beep" sound will be heard and displayed on the LCD. Press this button again and the SCAN function will be deactivated.
A scan channel list must be created before SCAN can be used. The radio will not go into SCAN mode when no scan channels are programmed. Contact your Authorized Maxon Dealer for further information on scanning modes and operation.

Transmitting with SCAN Enabled

A choice of transmitting on home channels, last received channel, or current scan channel can be done per the programming of the radio. Contact your Authorized Maxon Dealer for further information on scanning modes and operation.

Emergency Call

The Emergency Call(Red) button located on the top of the radio can be assigned through programming to transmitting an emergency alert tone or 5-Tone message in Selcall mode. The user can also hear the emergency alert tone. If the radio is set up in repeat mode, the radio can also transmit the emergency alert tone periodically. Contact your Authorized Maxon Dealer for further information on Emergency Call and its operation.

Monitor

A function that opens the squelch to check if the channel is active by other users; when the squelch is opened, the LED indicator will illuminate green. Normally, the monitor button is the default for enabling and disabling this function, but any button can be assigned. Contact your Authorized Maxon Dealer for further information on the monitor function.

Sub-tone (CTCSS and DCS)

The radio can be programmed for CTCSS and DCS encode/decode tones. The indicator icon "T" will be displayed if a subtone is associated with the channel.

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CTCSS Tone Frequency

A list of standard tone frequencies for CTCSS are shown below.

No.	Frequency	No.	Frequency	No.	Frequency	No.	Frequency
1	67.0	15	110.9	29	179.9	43	196.6
2	71.9	16	114.8	30	186.2	44	199.5
3	74.4	17	118.8	31	192.8	45	206.5
4	77.0	18	123.0	32	203.5	46	229.1
5	79.7	19	127.3	33	210.7	47	254.1
6	82.5	20	131.8	34	218.1	48	165.5
7	85.4	21	136.5	35	225.7	49	171.3
8	88.5	22	141.3	36	233.6	50	177.3
9	91.5	23	146.2	37	241.8	51	60.7
10	94.8	24	151.4	38	250.3	52	62.5
11	97.4	25	156.7	39	69.3	53	64.7
12	100.0	26	162.2	40	159.8		
13	103.5	27	167.9	41	183.5		
14	107.2	28	173.8	42	189.9		

DCS Code
A list of standard DCS tone codes are shown below.

No.	DCS Code	No.	DCS Code	No.	DCS Code	No.	DCS Code
1	023	27	165	53	413	79	731
2	025	28	172	54	423	80	732
3	026	29	174	55	431	81	734
4	031	30	205	56	432	82	743
5	032	31	223	57	445	83	754
6	043	32	226	58	464	84	036
7	047	33	243	59	465	85	053
8	051	34	244	60	466	86	122
9	054	35	245	61	503	87	122
10	065	36	251	62	506	88	212
11	071	37	261	63	516	89	225
12	072	38	263	64	532	90	246
13	073	39	265	65	546	91	252
14	074	40	271	66	565	92	255
15	114	41	306	67	606	93	266
16	115	42	311	68	612	94	274
17	116	43	315	69	624	95	325
18	125	44	331	70	627	96	332
19	131	45	343	71	631	97	356
20	132	46	346	72	632	98	446
21	134	47	351	73	654	99	452
22	143	48	364	74	662	100	454
23	152	49	365	75	664	101	455
24	155	50	371	76	703	102	462
25	156	51	411	77	712	103	523
26	162	52	412	78	723	104	526

2-Tone Function

The radio decodes the received 2 Tone before receiving the transmission voice when current channel is activated for 2 Tone. Contact your Authorized Maxon Dealer for further information on 2 Tone and its operation.

VOX

The VOX function is set up by programming of the radio. VOX can be enabled to transmit without pressing the PTT key when the voice signal is transmitted through the microphone of the radio.

Compander

When voice compander is enabled, it transmits compressed audio when transmitting and expands the compressed voice when receiving, both of which improve the communication audio. When the compander function is activated the compander icon will be displayed on the LCD. Contact your Authorized Maxon Dealer for further information on voice compander and its operation.

Scramble

The scramble function is used to protect your voice transmission from being recognized by other users on the same frequency. The scramble can be activated by pressing the button that is programmed in the radio. When the scramble function is enabled, the scramble icon will be displayd on the LCD. Contact your Authorized Maxon Dealer for further information on voice scramble and its operation.

Stun/Revive Function

It is possible to stun and revive radio remotely with Stun ID. If the radio receives Stun ID then all of the keys and buttons of the radio will not work and the red and green LED will blink periodically and also indicated on the display. In this state, pressing the PTT button will activate an alert sound.
Although the power is turned off and on, this status is maintained. If the radio receives Revive ID from another radio, the radio returns back to the original mode and an alert "beep" will sound. Contact your Authorized Maxon Dealer for further information on Stun/Revive and its operation.

Busy Channel Lock (BCL)/Busy Channel Lock Override (BCLO)

BCL/BCLO function is used to not interrupt the other users who are using the same frequency. If BCL/BCLO is activated then transmitting is prohibited from the same channel that is being used for others. In this case, an alert sound is heard.
BCL : Prohibit transmission from the same frequency.
BCLO : Prohibit tranmission in case of different sub-tone.
Contact your Authorized Maxon Dealer for further information on BCL/BCLO and its operation.

Time Out Timer (TOT)

The TOT function is used to prevent from using one channel continuously for a disignated amount of time. If the radio transmits over the TOT time continuously, the transmitting is automatically ceased and an alert sound is generated. Contact your Authorized Maxon Dealer for further information on TOT and its operation.

Key Lock

Key Lock prohibits the use of buttons when activated and can only be implemented when the radio is in standby mode. The buttons that are not affected by this function are the PTT and this button. Key Lock function is deactivated by pressing the pre-assigned button once more. Contact your Authorized Maxon Dealer for further information on Key Lock and its operation.

Password

If the password function is enabled, the radio will request the password on the LCD screen when the user turns on the radio. When the user inputs the correct password, the radio is activated. Contact your Authorized Maxon Dealer for further information on Password and its operation.

Power Save Control (PSC)

Battery lifetime can be increased when the PSC function is activated. Contact your Authorized Maxon Dealer for further information on PSC and its operation.

Squelch Level

The user can set squelch to 9 different levels on the radio. Contact your Authorized Maxon Dealer for further information on Squelch Level and its operation.

Cloning

The radio personality data, such as frequency/tone/scan, can be copied to another radio directly using the cloning function. Contact your Authorized Maxon Dealer for further information on Cloning and its operation.

TP-8102R/8402R RECORDING FUNCTION GUIDE

Recording Features Summary

The TP-8000R series provides the recording of all transmit and receive occurrences. The recording time within the radio is approximately 100 hours with up to 970 Megabytes of storage capacity. Messages can be played back directly from the radio and also transferred to a PC with the appropriate audio download cable. Each recording is individually date and time stamped.

Automatic formatting of the recorded files can be adjusted through the programming software. This limits the number of recordings stored in the radio and automatically deletes them when full. Say for example the format size remaining is set to 20% (approximately 200MB); when reached, all files will automatically be deleted so the recorded files should be backed up on a PC on a regular basis. If the format size remaining is set to "off" and the memory is full, the radio will stop recording and no formatting is done.

IMPORTANT NOTE:

The date/time function is powered by an internal coin battery. There are no visual or audible indicators for the battery status. It is charged by the radio's external battery pack when the radio is either in the on or off state. Therefore it is important to keep a charged battery on the radio at all times.

Initialization

When powering on the radio, the display will indicate a Memory Check, the amount of space available for recording (in Megabytes), and the date and time stamp will be shown. This initialization process of the radio may take up 20 seconds and is much longer than traditional 2-way radios; therefore the ability to transmit, receive and record cannot occur until this initialization process is completed.

Basic Key Functions

■ F1 and F2 are typically used to scroll up or down through the menus.
■ F3 is to toggle items on or off and the enter button.
■ F4 is for back one step or an exit button.

The setting of the date and time needs to be completed upon the first use of the radio or when the internal battery has discharged and the date and time are lost.

Note: the date and time can be accessed through the Menu Key if it needs updating such as for daylight saving time.

Setting the Date

The date is indicated by | Date: * |
year (4 digits), month (2 digits), and date (2 digits). An example of September 4, 2015 would be inputted as 20150904 (The date must be set in this sequence to continue to the next step.) Press F1 or F2 to move digits up or down. Press F3 to move to the next digit. When completed, press F3 to exit and proceed to setting the time.

Setting the Time
The time is indicated by military time of hours (2 digits), minutes (2 digits), and seconds (2 digits). An example of 8:24 pm would be set as 202400. (The time must be set in this sequence.) Press F1 or F2 to move digits up or down. Press F3 to move to next digit. When completed, press F3 to set and exit.
After the date and time are set, the radio will automatically stamp the date and time for each transmit and receive occurrence.

Instant Playback Instructions
Daily recorded conversations can be played back through the radio. A short press of the red key (default key) located on the top of the radio will instantly enter into the recorded files for the day. This is indicated by arrows progressing from left to right. Recorded files are in the format of Yr/Mo/Day_Hr/Min/Sec. Present day files are displayed first. Short presses of the F1 or F2 keys will move recorded files either forward or backwards. Note: these are not ring-type menus. To playback a message, press the F3 key. To review messages from previous days, a long press of F2 will move to the previous day, and then short presses of F1 and F2 will move through the recordings for that day. Keep performing the same sequence to continue recalling previous messages. If you encounter the message "Empty Date", it means that there are no recordings for that day.

Note: In playback mode, the radio will not transmit or receive.

Menu Key Instructions (Record Menu must be enabled by the programming software. Contact your Maxon Dealer for further information.) - This allows access to the menu items as listed below. A long press of the F3 key (default) places the radio into the Menu option. When entered, CHANGE GROUP is displayed. Next press the F2 key once (SET RECORD) followed by one press of F3 key. This accesses the Record options. Using F1 or F2, scroll through the menu.

a. Record ON: Select this to turn on or off the recording feature.
b. Time Display: Select this to view the current date and time.
c. Time Set SET: Select this to change the date and time on the radio.
d. Play SET: Select this to play any recorded file in the radio. Refer to the instructions above for Playback.
e. Record Usb OFF (Applies to model TP-8402R UHF only): Select this to transfer files to your computer's hard drive. Connect the audio cable (ACC-8050RU) to the radio and computer. If the radio is on, turn it off then back on. Using the Menu key go to CHANGE GROUP > SET Record > Record Usb OFF. Press F3, then OFF will flash. Press F2 once then F3 again. This will connect the radio to the computer by becoming a Removable Disk. Double click the folder to view the audio files. These files can be moved to the hard drive of your computer by the copy and paste commands.

Downloading files to a PC (Applies to model TP-8102R VHF only)
Connect the audio download cable (ACC-8050R) to the micro USB connector on the radio and the USB end into the PC. When the radio is powered on, the computer will display a new drive containing the recorded files. These files can be moved to the hard drive of your computer by the copy and paste commands.

Special Statement

English Warning Statement:

"This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device."

French Warning Statement:

"Le present appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisee aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioelectrique subi, meme si le brouillage est susceptible d'en compromettre le fonctionnement."

For Safe Operation

⚠ Warning   Don't transmit with antenna detached from the radio or don't damage or change antenna type. Strong electronic waves are emitted from the radio and damages or changes to the antenna may effect the performance of the radio, and it may cause the radio to be defective and not covered under warranty.

⚠ Warning   Don't use other manufacturers accessories. Unknown or unauthorized accessories may cause the radio to be defective and not covered under warranty.

⚠ Warning   Don't disassemble the radio. Disassembly of the radio may cause a serious defect or malfunction and not be covered under warranty.

⚠ Warning   Avoid excessive shock to the radio.
Don't place the radio where the direct sunlight or high temperature occurs.
Don't damage the battery pack by sharp object or an execssive shock.

⚠ Warning   Turn off the radio before boarding on an airplane.
Don't use the radio in the hospital without any pre-approval.
Don't use the radio at the place of where computer of other electronic devices are being used.

⚠ Warning
- Please keep the radio at least 1 inch away from the human body.
- Any damage to antenna, may cause RF exposure.
- When using earphone, please reduce the volume to a low level. If not, unexpected high sound may cause harmful effect to your ear.
- Don't touch the conductive metal of the battery radio with wet hands. It may cause damage on your hands.
- Be careful when putting the battery in a pocket or a bag to avoid contact with metal.

- **FCC RF EXPOSURE COMPLIANCE REQUIREMENTS FOR OCCUPATIONAL USE ONLY**
  The Federal Communications Commission (FCC), with its action in General Docket 93-62, November 7, 1997, has adopted a safety standard for human exposure to Radio Frequency (RF) electromagnetic energy emitted by FCC regulated equipment. Proper operation of this radio will result in user exposure far below the Occupational Safety and Health Act (OSHA) and Federal Communications Commission limits.

- **DO NOT** transmit for more than 50% of total radio use time (50% duty cycle). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded.

- This radio is NOT approved for use by the general population in an uncontrolled environment. This radio is restricted to occupational use, work related operations only where radio operator must have the knowledge to control the user's exposure conditions for satisfying the higher exposure limit allowed for occupational use.

- When transmitting, hold the radio in a vertical position with its microphone 1 inches (2.5 cm) away from your mouth.

- The radio is transmitting when the red LED on the front of the radio is illuminated. You can cause the radio to transmit by pressing the PTT bar on the radio

- These are required operating configurations for meeting FCC RF exposure compliance. Failure to observe these restrictions mean violation.

FCC Notice
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This devices may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

- **English Warning Statement:**
  "This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device."

- **French Warning Statement:**
  "Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

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Warranty Statement

Maxon America, Inc. offers to the original end user:

Three (3) Year Limited Warranty on Maxon TP-8000/8000R Series Radios (separate warranty period on battery and accessories).

One (1) Year Limited Warranty on Accessories (Includes, but not limited to, batteries, antennas, belt clips, chargers, audio accessories, nylon cases, leather cases, etc.)

Maxon warrants each new radio product manufactured or supplied by it to be free from defects in material and workmanship under normal use and service for the time period stated, provided that the user has complied with the requirements stated herein. The warranty period begins on the date of purchase from an Authorized Maxon Dealer. This warranty is not assignable or transferable. This warranty is void if the product serial number is altered, defaced or removed. Maxon is not responsible for any equipment that is attached to or used in conjunction with our products.

During the warranty period, if the product fails to function under normal use, because of manufacturing defects or workmanship, it should be returned to the Authorized Maxon Dealer from which it was purchased. The Authorized Maxon Dealer will repair the product or return the product for repair to Maxon or its Authorized Repair Depot. The user is responsible for the removal of the product from a vehicle or any equipment attached to it, or other site of its use; transportation of the product to the Authorized Maxon Dealer; for the return of the repaired or replacement product to the site of its use and for the reinstallation of the product.

Maxon shall have no obligation to make repairs or replacement of product which results from normal wear and tear, or is necessitated by catastrophe, fault, or negligence of the user, improper or unauthorized alterations or repairs to the product, incorrect wiring, use for which it was not designed or by causes external to the product. Maxon's sole obligation shall be to replace or repair the product covered by the warranty. Replacement is done at Maxon's discretion and may consist of a similar or higher featured product. Repair may include the replacement of parts with functionally equivalent new or reconditioned parts. All replaced parts and accessories are warranted for the balance of the original time period. All parts and accessories that are replaced become the property of Maxon America Inc.

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