SP-510

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. Maxon subscribes to the same safety standard for the use of its products. 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.

RF EXPOSURE COMPLIANCE AND CONTROL GUIDELINES AND OPERATING INSTRUCTIONS

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits, always adhere to the following procedures.

Guidelines:
• Do not remove the RF Exposure Label from the device.

Operating Instructions:
• Hold the radio in a vertical position in front of face with the microphone (and the other parts of the radio, including the antenna) at least one inch (2.5 cm) away from the nose. Keeping the radio at the proper distance is important because RF exposures decrease with distance from the antenna. The antenna should be kept away from eyes.

• When worn on the body, always place the radio in a Maxon Telecom approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of Maxon Telecom or other manufacturer's non-approved accessories may result in exposure levels which exceed the FCC's occupational/controlled environment RF exposure limits.

• Use only Maxon Telecom approved supplied or replacement antennas, batteries, and accessories. Use of non-Maxon Telecom approved antennas, batteries, and accessories may exceed the FCC RF exposure guidelines.

About Your SP-510 Radio

Maxon's SP-510 Radio feature up to 13 groups and up to 16 channel operation per group for a total channel capacity of 208 channels of superior performance and reliability. Operation and functions for Maxon's SP-510 Radios are described in this manual.

We urge you to thoroughly read this manual before operating the radio.

Application of some of the functions described in this manual is determined by the system you use. Your Maxon Dealer will program your radio so that you have the greatest number of functions possible relative to your needs.

Should you have questions regarding the operation of the radio please consult your Maxon Dealer.

About Maxon America, Inc.

Maxon America, Inc. designs and manufactures professional FM two-way radio equipment to serve a wide variety of communication needs. Maxon produces equipment for the Land Mobile Radio and Specialized Mobile Radio markets (business, industrial, government and public safety).

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Safety Information

The Federal Communications Commission (FCC), with its action in General Docket 79-144, March 13, 1985, has adopted a safety standard for human exposure to Radio Frequency (RF) electromagnetic energy emitted by FCC regulated equipment. Maxon subscribes to the same safety standard for the use of its products. Proper operation of this radio will result in user exposure far below the Occupational Safety and Health Act and Federal Communications Commission limits.

WARNING - DO NOT hold the radio in such a manner that the antenna is next to, or touching, exposed parts of the body, especially the face or eyes, while transmitting.

WARNING - DO NOT allow children to operate transmitter - equipped radio equipment.

CAUTION - DO NOT operate the radio near unshielded electrical blasting caps or in an explosive atmosphere unless it is a type especially designed and qualified for such use.

CAUTION - DO NOT press and hold the transmit switch (P-T-T) when not actually wishing to transmit.

NOTE: This radio operates in FCC regulated frequency bands. All radios must be licensed by the FCC before use. Because this radio contains a transmitter, Federal law prohibits unauthorized use or adjustments of this radio.

Unpacking Information

Remove and carefully inspect the contents of your package(s) for the following items:

> Radio
> Battery Pack
> Battery Charger
> Battery Charger Power Supply
> Antenna
> Spring Belt Clip
> Operating Instructions

If any items are missing, please contact your Dealer or Maxon.

SP-510 Features

- Wideband frequency separation

- Revision Display

- DTMF Encoding / Decoding Display

- 2 / 5 Tone

- Squelch Option

- Pass Word Function

- VOX Function

- Programming / Cloning

- Programmable

- Emergency Function

- 1 or 5 W programmable output power

- Programmable 12.5/25 kHz channel spacing

- Channel scan

- Scan Delete

- Battery Level

- Priority channel scan

- Look back channel

- CTCSS/DCS/DTMF tone signaling

- Busy channel lockout

- Time-out timer

- Scan List Edit

- Priority Channel Edit

Description of Radio Components

1) **Antenna Receptacle**

2) **Channel Selector Key**

3) **On/Off - Volume Control**

4) **Busy/TX/ Indicator**

5) **Battery Latch**

6) **Push-To-Talk (PTT)**

7) **Monitor Key**

8) **Scan Key**

9) **Emergency Key**

10) **Function Key**

11) **Microphone**

12) **Accessory Connector**

13) **Belt Clip**

14) **Battery**

15) **Battery Charge Contacts**

16) **LCD Display**

17) **Speaker**

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Antenna Installation

Fasten the antenna to the radio by turning the antenna clockwise into the receptacle on top of the radio.

Installing and Removing the Battery Pack

To Install:
Position the guides of the battery in line with the radio battery guide rails and slide the battery into position until a click is heard.

To Remove:
Holding radio in one hand, push and hold battery latch button located in the upper right hand corner of the battery pack , held as if looking at the back of the unit. Hold radio firmly and slide battery in downward direction while pushing the battery latch button.

Attaching and Removing the Belt Clip

To Install:
Install belt clip onto the belt clip holder located on the upper left hand corner of the radio, held as if looking at the back of the unit. Locate slot location in belt clip and push belt clip until a click is heard.

To Remove:
Push and hold release button located at top of belt clip and slide clip off the belt clip holder.

Battery Charging and Care

To ensure peak performance from your radio, the battery pack must be fully charged. Proper care and charging will allow maximum performance and life of your battery pack.

The ACC-400 Desktop Charger provides 1.5 hours charging and normal "slow" charging to one radio and one battery.

See accompanying instructions included with this charger for more information. (Remove this line)

To receive maximum performance from your radio and battery pack, periodically completely discharge and recharge the battery pack.

SP-510 Operations

Power On-Volume
Turn the radio on by rotating the on/off - volume control clockwise until you hear a click and the self test "alert" tone. When the power is on, beep sound would occur five-times to show that the radio power is on. Time length of the beep sound is 50msec. An interval between the beep sound is also 50msec. A Single tone of 1200Hz

User Alert Tones
The User Alert tone will be sound for the following reasons.
 Keypad button press
 Side option button press

Tones Alerts for Received Calls
 Up to 4 different alert sequences shall be programmed to inform the User of the call type a ground call,
 Or emergency call etc. Tone length, tone gap and repeatability will be individually programmable.
  The numbers 1,2,3 and 4, shall be used to represent low tones to high tones.
 One to three of the four tones shall be selectable via the software and allocated as Alert1, Alert2, Alert3,
  Alert4. These Alerts shall then be assigned to a particular DECODE, e.g. Group call

Channel Select/Channel Group Select

The SP-510 is capable of up to 13 programmed groups with up to 16 channels per group for a total channel capacity of 208 channels. To change channels press and release the or buttons to change channels (remove). A press and hold will scroll through your programmed channels. Channel numbers will appear in the LCD located at top of unit. If your radio has been programmed for Channel Group Scan you must enter the scan mode by pressing the scan button which is the first button located beneath the PTT button. The Channel Group to be scanned will be shown in the display. In order to change the Channel Group press the or ▼ buttons to select desired group to be scanned.

Transmit

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CAUTION
OPERATION OF THE TRANSMITTER WITHOUT
A PROPER ANTENNA INSTALLED MAY RESULT IN
PERMANENT DAMAGE TO THE RADIO

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1)Press the monitor button to monitor the channel for activity. To avoid interrupting another user, make sure the channel is clear before you begin transmitting.

NOTE: Federal Communications Commission Rules and Regulations require that you monitor a channel for activity before transmitting.

NOTE: The tri-color LED located on the top panel can help with channel monitoring. It will glow amber if RF activity is present; or green if the transmission has a CTCSS or DCS or DTMF tone that matches a tone programmed for receive in your radio. When this LED is not illuminated, the radio is indicating a "clear" channel.

2)When the channel is clear, hold the radio upright with the antenna vertical and the front microphone area about 1 inch from the mouth, keeping the antenna away from the face and eyes. Press and hold the P-T-T bar on the side of the radio, and speak slowly and clearly into the microphone area.

NOTE: The LED will glow red when transmitting. This indicator should be on continuously while the P-T-T bar is being pressed and the radio is transmitting. Should the red LED be "flashing", the battery needs to be recharged   and transmission will cease. Recharge the battery before attempting more than one transmission.

Receive
When you have finished transmitting, release the P-T-T bar to receive.

Power Off
When finished transmitting, receiving, monitoring, etc., turn the radio off by rotating the on/off-volume control fully counter-clockwise, to the detent position.

Status Indicators and Audible Alert Tones

Your SP-510 has a sophisticated microprocessor control which provides a series of audible alert tones.

Upon initial power up, a quick melody indicates that the self-test of
the microprocessor functions has been completed satisfactorily. A series of tones may be sounded with any of the following conditions:

· Attempt to transmit on a channel set for receive only
· Attempt to transmit on a channel that is already in use when busy   channel lockout has been programmed into the radio *
· Transmitting time has exceeded time-out timer programmed length *
· Low battery condition
· Selecting a channel with no programmed frequency

* Indicates a function that is initially programmed into the radio by your Maxon Dealer.

NOTE: All audible tones can be programmed off for silent operation.

Status	Decription	LED color	LCD Indication	Audible Tone
Normal	Power On - Ready	N/A	Maxon Logo	Melody
	Call Received	Orange	Channel number	N/A
	Correct Call	Green	Channel number	N/A
	Busy Channel	Orange	Channel number	N/A
	Transmit	Red	Channel number	N/A
	Transmit not allowed	Red Flashing	AlternatingUL/Channel number	Twobeeps repeated
Scanning	Normal Scan mode	Green Flashing	Group number or channel number (remove)	N/A
	Priority Scan Mode	Green Flashing	Group number or channel number (remove)	
	PriorityLook BackScan Mode	Green Flashing	PS/Channel number	N/A
Scan Edit	Edit scan list	Red single Flash	Scnl	N/A
Priority Edit	EditPriority channel	Red two Flashes	Pscn	N/A
Warning	Low Battery	Red Flashing	Low-BATT	3 beeps repeated
	BusyChannel lockout	orange	Busy-Lock	Singlebeep repeated
	TX penalty	N/A	TX-P	Two beeps
	Time-out-timer	N/A	TIME-OUT	Singlebeep/3 beeps repeated
	Scan Delete	N/A	Delete	Single Beep
	Scan All Delete	N/A	All-DEL	Two Beep
	PC-Program(Read)	N/A	READING	
	PC-rogram(Write)	N/A	WRITING	
	Clone Master	N/A	MASTER	
	Clone Slave	N/A	SLAVE	
	Unlock	N/A	UNLOCK	Twobeeps repeated

Scan Modes

Scanning is a Dealer programmable feature that allows you to monitor a number of channels or channels within a Group. Your Dealer will help you define a scanning mode and your channel "scan list" .

Normal Channel Scan
Once the scan list has been established you can initiate scan by press and release of scan button, first button located beneath the PTT button. The top panel LED can be programmed to flash green as the radio is scanning.

If a conversation is detected on any of the channels in the scan list, the radio will stop on that channel and you will be able tohear the conversation. If programmed for normal scan TX you will be able to transmit on that active channel during the pro-grammable scan delay time. The scan delay time is the amount of time the radio will stay on that channel once activity has ceased (Dealer programmable, 4-7 seconds is typical). The radio will resume scanning once the scan delay time has expired. Scanning will continue until the channel is changed.

Priority Channel Scan
A single channel may be programmed as the "Priority" channel. The radio will constantly monitor this channel while scanning   and when the radio has stopped on an active channel. If a call is detected on the "Priority" channel, the radio will automatically   move to, and remain on, the "Priority" channel for as long as the priority conversation takes place. "Priority" channel activity takes precedence over all other conversations. To activate Priority scan press and release the scan button, first button beneath the PTT button. When priority scan has been activated display will show PS to indicate priority scan has been activated. (Remove)

Other Scanning Features

·**Look Back:** Any channel, when not in the scan mode, can be programmed to "look back" at the "Priority" channel. (Remove) This feature   is ideal for those who do not need scan as defined above, but want to make sure that they never miss a call on the "Priority" channel if another channel has been selected. Once a "look back" (Remove) channel other than the priority channel has been selected, the radio will periodically "look back" at the Priority" channel. If activity is detected on the "Priority" channel, the radio will move to that channel for as long as it remains active. To enter look back mode, press and hold the scan button, first button located beneath the PTT button. Pscn will be shown in the display and the LED will flash green.

   NOTE: Look Back requires that the radio leave the active channel for a fraction of a second (at regular intervals) to check the priority channel for activity. Depending upon how the radio is programmed (scan speed, etc.) this may or may not be noticeable as "breaks" on the active channel for that same fraction of a second. A transmission will be made on the selected channel at all times.

· **Scan Channel Delete:** To temporarily delete a channel from the scan list, simply press the monitor button while scanning and stopped on the channel to be deleted. This will remove that channel from the scan list until the channel is changed or the radio's power is reset. When power is restored or the scan list channel position is again selected, the original Dealer programmed scan list will be activated.

· **CTCSS/DCS/SELCALL Scanning:** The SP-510 can be programmed by your Dealer to scan for tone. This will help block out unwanted calls.

· **Normal Scan TX:** Allows a transmission only after a call is received, depending on the programmed scan delay time. After the scan resumes, and a transmission is made, the radio will sound an   alarm (two beeps) , display_h and will not allow a transmission.

· **Priority Scan TX:** Allows a transmission after a call is received depending on programmed scan delay time. The transmission will
   be made on the channel that the call was received. After the scan resumes, if a transmission is made, the radio will transmit on the programmed priority channel.

· **Priority Only TX:** Allows a transmission on the priority channel when scanning and not stopped on an active channel. It can also be programmed to (Remove) will always transmit on the priority channel if scanning or stopped on an active channel.

· **Receive Only Scan:** This allows only reception. If a transmission is made at any time, the radio will sound an alarm (two beeps), display and will not allow the transmission.

Scan List Edit
You as a user can edit your radio's scan list and priority scan channel at anytime form your radios original program.

Your radio may have been programmed for channel only scan operation or channel Group scan operation this operation was determined by your Dealer programming. Please note, if your radio has been programmed for channel only scan you will not be able to edit your scan list. You will be able to edit your priority channel.

Channel Only Edit: To edit the scan list in a radio programmed for channel only scan, turn radio off, press and hold scan button, first button beneath the PTT button. While holding scan button turn radio on, release the scan button after the first red flash of the LED and Scnl is shown in the display. Upon release of the scan button the first channel number will be displayed. If channel number is flashing that channel is already included in the scan list. If channel number is solid that channel is not included in the scan list To add or delete the selected channel to or from the scan list press and release the monitor button, second button located beneath the PTT button. The selected channel will flash if selected channel was added to the scan list or the selected channel will be solid if the selected channel was deleted from the scan list. To edit other channels press the buttons to select the desired channels to be added or deleted from the scan list and repeat the process. Upon completion of adding or deleting channels to or from you r scan list press and release the scan button, first button located below the PTT button, your new scan list should be entered at this time. (Remove entire statement)

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Channel Group Edit: To edit the Group scan list in a radio programmed for channel group scan, turn radio off, press and hold scan button, first button beneath the PTT button. While holding scan button turn radio on, release the scan button after the first red flash of the LED and Scnl is shown in the display. Upon release of the scan button the first group number will be displayed. If you do not wish to edit the group you have selected press the button to select those channel groups you wish to edit. After channel group selection has been made press and release the scan button, first button located beneath the PTT button, the channel number within your selected channel group may now be edited. If channel number is flashing that channel is already included in the scan list of the selected channel group. If channel number is solid that channel is not included in the scan list To add or delete the selected channel to or from the scan list press and release the monitor button, second button located beneath the PTT button. The selected channel will flash if selected channel was added to the scan list or the selected channel will be solid if the selected channel was deleted from the scan list. To edit other channels press the buttons to select the desired channel within the channel group to be added or deleted from the channel group scan list and repeat the process. Upon completion of adding or deleting channels to or from your channel group scan list press and release the scan button, first button located below the PTT button. your new channel group scan list should be entered at this time.

Priority Channel Edit: Only one priority channel can be programmed into the radio. To edit a priority channel, turn radio off, press and hold scan button, first button beneath the PTT button. While holding scan button turn radio on, release the scan button after the second red flash of the LED and Pscn is shown in the display. Upon release of the scan button the first channel number will be displayed. If displayed channel is not your desired channel to be the priority channel press and release the buttons to select the desired channel to become the priority channel. After you have selected the desired channel if the channel number is flashing that channel is already selected as the priority channel. If channel number is solid that channel is not selected as the priority channel. To add or delete the selected channel as the priority channel press and release the monitor button, second button located beneath the PTT button. The selected channel will flash if selected channel was added as a priority or the selected channel will be solid if the selected channel was deleted as the priority. Upon completion of adding or deleting the priority channel press and release the scan button, first button located below the PTT button, your new priority channel should be entered at this time.

Licensing and Service Information

FCC Licensing
The Federal Communications Commission requires that the operator of this radio be properly licensed under the applicable Part and/or Parts of the FCC Rules and Regulations.

Consult with your Maxon Dealer, or contact the nearest FCC Field Office for information about obtaining a license.

Service
Do not tamper with internal adjustments. Damage to the equipment and/or improper operation may result. There are no user serviceable items inside the radio.

It is recommended that you return your radio to a qualified Maxon Dealer for any service or repairs.

Recycling/Disposal of Batteries

The U.S. Environmental Protection Agency (EPA) classifies used Ni-Cd batteries as hazardous waste, unless certain exemptions apply.

The battery should be recycled at the end of its useful life. Under various state or local laws, such batteries must be recycled or disposed of properly and cannot be dumped in landfills or incinerators.

Maxon America, Inc. fully endorses and encourages the recycling of Ni-Cd batteries. A national program to collect and recycle used Ni-Cd batteries is being implemented by the Rechargeable Battery Recycling Corporation (RBRC Ö). This program is being funded through the use of license fees paid by the battery and product manufacturers to place the RBRCÖ Seal on the batteries.

The following is a list of facilities where the batteries can be shipped to be recycled. Contact these facilities for proper packaging and shipping guidelines.

Software Copyrights

The Maxon products described in this operating instruction manual may include copyrighted Maxon software programs stored in semi-conductor memories or other media. Laws in the United States and other countries preserve for Maxon certain exclusive rights for copy-righted software programs, including the exclusive right to copy or reproduce in any form the copyrighted software program. Accordingly, the copyrighted Maxon software programs contained in the Maxon products described in this operating instruction manual may not be copied or reproduced without the express written permission of Maxon. Furthermore, the purchase of Maxon products shall not
be deemed to grant either directly or by implication, estoppel, or otherwise, any license under the copyrights, patents or patent applications of Maxon, except for normal non-exclusive royalty free
license to use that arises by operation of law in the sale of a product.

Maintenance

Your SP-510Radio is designed to be maintenance free. To keep your radio in good working condition:
Clean external surfaces with a clean cloth dampened in a solution of dishwasher detergent diluted in water.
Apply the solution sparingly to avoid any moisture leaking into cracks and crevices. Do not submerge the radio. Use a non-metallic brush to dislodge stubborn particles, if necessary. Dry the surface thoroughly with a soft, lint free cloth.

DO NOT use solvents or spirits for cleaning - they may permanently damage the housing.
Clean the battery contacts on the back of the radio with a lint free cloth to remove dirt, grease, or other foreign material that may impede good electrical contact.

Limited Warranty

Maxon America, Inc. ("Maxon") warrants the Maxon Product
manufactured by it against defects in material and workmanship
under normal use and service for a period of two (2) years from the date of delivery to the original end user, provided that the user has complied with the requirements stated herein. This warranty is not assignable or transferable. Maxon is not responsible for any ancillary equipment which is attached or used in connection with this product.

Maxon shall have no obligation to make repairs or to cause replacement required which result from normal wear and tear or necessitated in whole or in part by catastrophe, fault or negligence of the user, improper or unauthorized alterations, repairs to the Product, use of
the Product in a manner for which it was not designed, or by causes external to the Product. This warranty is void if the serial number is altered, defaced or removed.

Maxon's sole obligation hereunder shall be to repair or replace the Product covered in the above warranty.

To receive warranty service, deliver or send the Product, transportation and insurance prepaid, to the place of purchase along with your proof of purchase.

THE EXPRESS WARRANTIES CONTAINED HEREIN ARE IN LIEU OF ALL OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED OR STATUTORY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

FOR ANY PRODUCT WHICH DOES NOT COMPLY WITH THE WARRANTY SPECIFIED, THE SOLE REMEDY WILL BE REPAIR OR REPLACEMENT. IN NO EVENT WILL MAXON BE LIABLE TO THE BUYER OR ITS CUSTOMERS FOR ANY DAMAGES, INCLUDING ANY SPECIAL, INCIDENTAL, INDIRECT OR CONSEQUENTIAL DAMAGES, OR FOR THE LOSS OF PROFIT, REVENUE OR DATA ARISING OUT OF THE USE OF OR THE INABILITY TO USE THE PRODUCT.

This warranty is void for sales and deliveries outside of the United States.