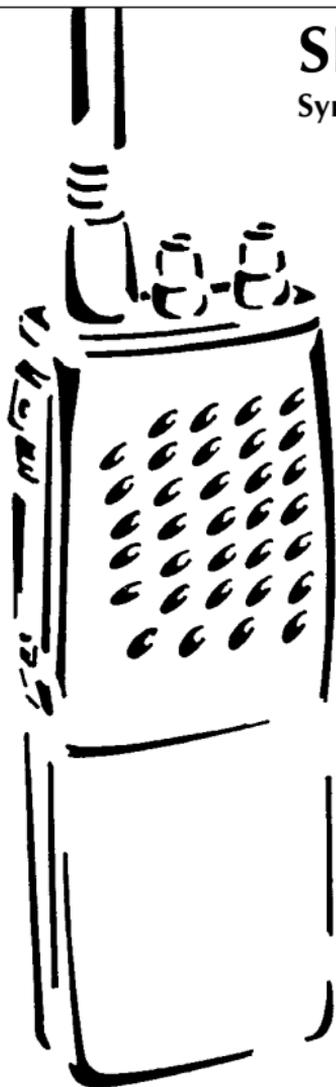

maxon®

SP-100 Series

Synthesized Two-Way Radio



Operating
Instructions

About Your SP-100 Series Radio

Congratulations, you now own the Maxon SP-100 Series two-way radio. Featuring 4 channel, 2 Watt operation, the SP-100 provides superior performance and reliability. Operation and functions for your radio are described in this instruction manual. **We urge you to thoroughly read this manual before operating the radio.**

About Maxon America, Inc.

Maxon America, Inc. is a world leader in the design and manufacture of portable and mobile CB radios, Family Radio Service radios, 49 MHz two-way radios, GMRS/DOT frequency radios, weather monitors, professional FM two-way Land Mobile Radios, Specialized Mobile Radios, pagers and paging equipment, data/telemetry modules and a variety of optional/accessory items.

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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.

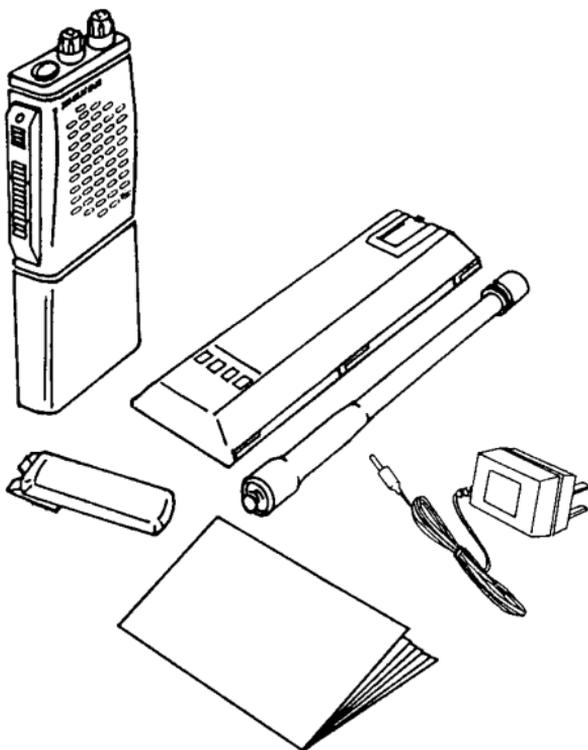
NOTE: **This radio operates in FCC regulated frequency bands. All radios must be licensed by the FCC before use. Because this radio contains a transmitter, Federal law prohibits unauthorized use or adjustments of this radio.**

Unpacking Information

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

- Radio Transceiver Unit
- Antenna
- Belt Clip
- Rechargeable Ni-Cd Battery Pack
- AC/DC Wall Charger
- Operating Instructions

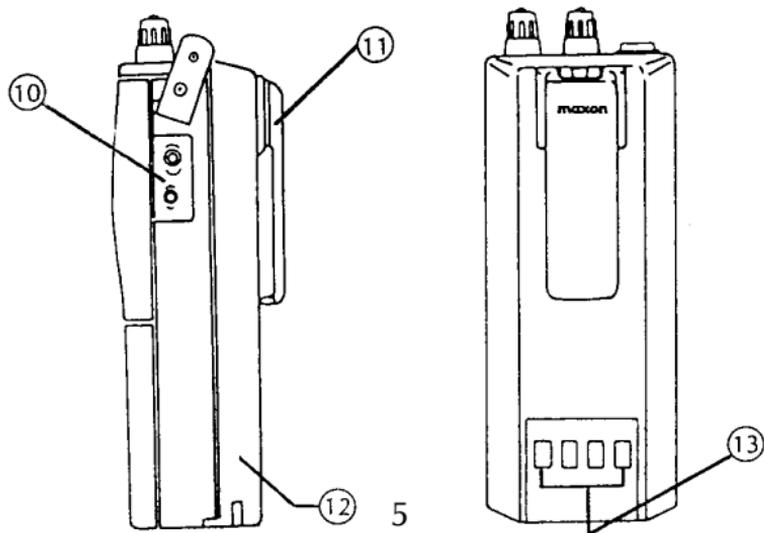
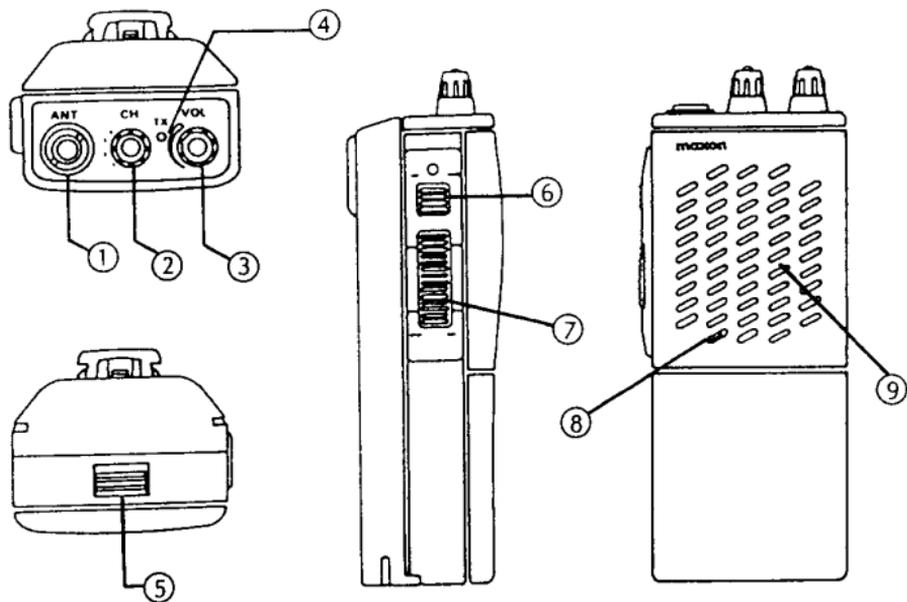
If any items are missing, please contact the place of purchase or Maxon America, Inc.



Radio Controls / Functions

- 1) Antenna Receptacle**
- 2) Channel Selector Knob**
- 3) On/Off - Volume Control**
- 4) Busy/TX/BT Indicator**
- 5) Battery Latch**
- 6) Monitor Button**
- 7) Push-To-Talk (PTT)**
- 8) Microphone**
- 9) Speaker**
- 10) Accessory Jacks**
- 11) Belt Clip**
- 12) Battery**
- 13) Battery Charge Contacts**

Radio Controls / Functions, Continued



FCC Licensing Information

The Maxon SP-100 Series features 3 radio models, requiring two different licensing types. Before using your Maxon SP-100, you must obtain / possess a radio license issued by the Federal Communications Commission (FCC). It is illegal to transmit without the appropriate license.

The SP-100H (VHF) and SP-100U (UHF) radios operates on FM radio communication frequencies, commonly referred to as DOT radio or business itinerate frequencies. These DOT radio frequencies are allocated by the FCC for business use only.

The SP-100G operates on General Mobile Radio Service (GMRS) frequencies, which are allocated by the FCC for personal uses, including recreation and travel.

DOT Frequency / Business Itinerate Radios

For the DOT frequency / business itinerate radios (SP-100H and U), you must submit FCC Form 600 and any appropriate attachments to the Personal Communications Industry Association (PCIA). This organization is responsible for coordinating frequencies available to U.S. businesses to prevent regional communication conflicts. For more information about PCIA, call 1-800-759-0300; in Virginia, call 1-703-739-0300. Submit completed Form 600 to:

PCIA Frequency Coordination
P.O. Box 25648
Alexandria, VA 22313-5648

GMRS Radios

For GMRS radios (SP-100G), you must submit FCC Form 574 directly to the FCC at this address:

Federal Communications Commission
General Mobile Radio Service
P.O. Box 358230
Pittsburgh, PA 15251-5230

FCC Licensing Information, Continued

FCC Forms and Information

To obtain current FCC forms and filing instructions, you can:

- Have the forms **mailed to you** by calling the FCC Forms Hotline 1-800-418-FORM (3676).
- Have the forms **faxed to you** by the FCC's Fax-On-Demand System by calling 1-202-418-0177.

As a reminder, request Form 600 for Maxon models SP-100H or SP-100U. You can request:

Document 006000 for all forms and filing instructions

Document 006001 for instructions only

Document 006002 for Form 600 main form only

Document 006003 for all schedules

Request Form 574 for Maxon model SP-100G. A booklet entitled "Form 574 Instructions" can be obtained as well.

For more information regarding the licensing application, contact: the FCC at 888-CALL-FCC (255-5322).

For more information regarding PCIA, or Form 600, contact:

PCIA Frequency Coordination

703-739-0300

FCC Part 90 Information

You are required to have in your possession a current copy of Part 90 of the FCC Rules and Regulations before operating your radio. It is your responsibility to insure your radio operates in accordance with the guidelines established by the FCC. You should familiarize yourself with Part 90 of the FCC Rules before operating your radio. NOTE: FCC Rule 95.5 applies to GMRS radios, as they are for personal use only.

FCC Licensing Information, Continued

To obtain current copies of FCC Rules, Part 90 or Part 95, contact:
Superintendent of Documents
Government Printing Office
Washington, DC 20402-9371

or by phone: 1-202-783-3238 (8:00 AM to 4:00 PM EST, Monday thru Friday, excluding Holidays).

Many larger metropolitan areas have U.S. Government book stores. Check the business listings of your local telephone directory under "Government Book Stores" for listings and locations.

Battery Charging and Care

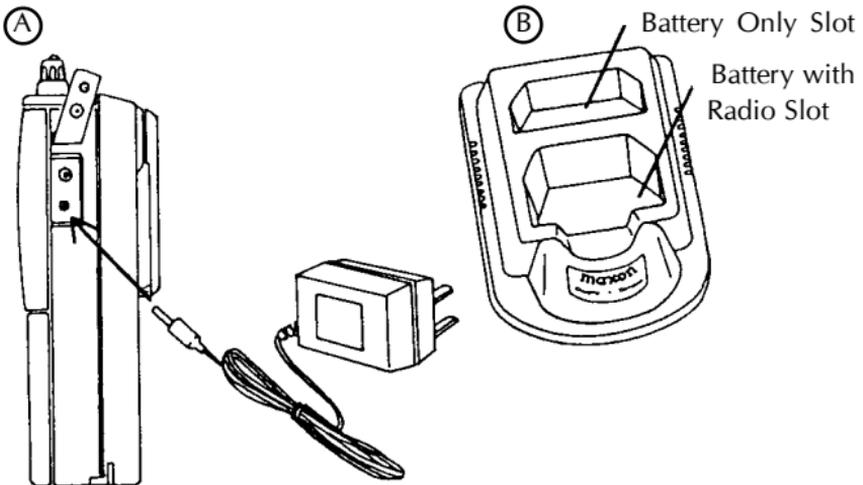
To ensure peak performance from your radio, the battery pack must be fully charged. Proper care and charging will allow maximum performance and life from your battery pack.

The SP-100 comes standard with a wall charger. Turn radio off and insert charging adapter into lower hole of accessory jacks. The charging cycle with this charger is overnight (12-16 hours). (See figure A.)

The optional QPA-1125 Desktop Charger provides "one hour" charging and normal "slow" charging to one radio and one battery. The high capacity 1200 mAh battery pack will take longer to fully charge. (See figure B.)

See accompanying instructions included with these chargers for more information.

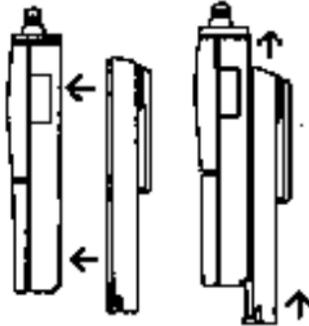
To receive maximum performance from your radio and battery pack, periodically completely discharge and recharge the battery pack.



Installing / 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, slide and hold battery latch. With the other hand, push the battery in downward direction.

Antenna Installation

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

Installing / Removing the Belt Clip

To Install:

Install belt clip on back of battery until it clicks into place.

To Remove:

Pull release tab outward and push belt clip up.



SP-100 Series Operations

Power On-Volume

Turn the radio on by rotating the on/off - volume control clockwise until you hear a click and a single tone.

Transmit

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

- 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: FCC 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 tone that matches a tone programmed for receive in your radio. When the 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 2-3 inches 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.

SP-100 Series Operations, Continued

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-100 Series radio has a sophisticated microprocessor control which provides a series of audible alert tones. Upon initial power up, a single tone indicates that the self-test of the microprocessor functions has been completed satisfactorily. A tone, or series of tones, may be sounded with any of the following conditions:

- Attempt to transmit on a channel set for receive only
- Transmitting time has exceeded time-out timer time of 5 minutes of continuous transmitting
- Low battery condition
- Selecting a channel with no frequency programmed on it

STATUS	DESCRIPTION	LED COLOR	AUDIBLE TONE
NORMAL	Power On - Ready	N/A	Single tone
	Busy Channel	Amber	N/A
	Correct all w/ tone	Green	N/A
	Transmit	Red	N/A
SCAN	Scan is initiated	Green, flashing	N/A
WARNING	Time-Out Timer	N/A	Single tone
	Battery Low	Red, flashing	Four beeps, repeat
ERROR	EEPROM Error	Red, flashing	Single beep, repeat
	PLL Error	Red, flashing	Double beep, repeat
	Filtering Error	Red, flashing	Triple beep, repeat

Accessories

The Maxon SP-100 Series radio is designed to work with a variety of accessory products. These accessories are available for the SP-100:

QPA-600G*	600 mAh Ni-Cad Battery Pack
QPA-700G	700 mAh Ni-Cad Battery Pack
QPA-1200G	1200 mAh Ni-Cad Battery Pack
CA-1410C*	AC/DC Wall Trickle Charger
QPA-1130	Dual Slot/Dual Rate Desktop Charger with Power Supply
QPA-1425	Lapel Speaker/Microphone
QPA-1480	Voice Operated/P-T-T Mini-VOX Headset
QPA-1491	Heavy Duty Leather Case
QPA-1496C	Camouflage Canvas Case
SPK-400C	Programming Kit (includes cable and disk)

* Comes standard with the SP-100 radio.

These accessories can be purchased from your local Maxon supplier, or you may contact Maxon at 816/891-6320, ext. 707.

Programmable Features

Channel Programming

Your Maxon SP-100 Series radio has several programming options. For programming options, Maxon's SPK-400C PC programmer and cable are required. The programmer works with an IBM® or compatible PC (one 3.5" floppy and one hard drive with at least 300K of available memory). The SPK-400C allows you to program channel frequencies, CTCSS private tone codes per channel, and a scan function. The following shows possible channel frequencies for each version of the SP-100 Series:

SP-100H (VHF radio):

151.6250	Red DOT
151.9550	Purple DOT
154.5700	Blue DOT
154.6000	Green DOT
162.5500	NOAA Weather Channel 1
162.4000	NOAA Weather Channel 2
162.4750	NOAA Weather Channel 3
162.4250	NOAA Weather Channel 4
162.4500	NOAA Weather Channel 5
162.5000	NOAA Weather Channel 6
162.5250	NOAA Weather Channel 7
SCAN	

NOTE: NOAA Weather Channels are receive (RX) only, the radio will not transmit on these channels.

NOTE: The SCAN feature can be programmed on Channel 4 only.

Programmable Features, Continued

SP-100U (UHF radio):

464.5000	Brown DOT
464.5500	Yellow DOT
467.7625	"J" DOT
467.8125	"K" DOT
467.8500	Silver Star
467.8750	Gold Star
467.9000	Red Star
467.9250	Blue Star
SCAN	

NOTE: The SCAN feature can be programmed on Channel 4 only.

SP-100G (GMRS radio):

462.5500	GMRS Channel 1
462.5750	GMRS Channel 2
462.6000	GMRS Channel 3
462.6250	GMRS Channel 4
462.6500	GMRS Channel 5
462.6750	GMRS Channel 6
462.7000	GMRS Channel 7
462.7250	GMRS Channel 8
462.5625	GMRS Interstitial Channel
462.5875	GMRS Interstitial Channel
462.6125	GMRS Interstitial Channel
462.6375	GMRS Interstitial Channel
462.6625	GMRS Interstitial Channel
462.6875	GMRS Interstitial Channel
462.7125	GMRS Interstitial Channel
SCAN	

NOTE: Only Channels 1 through 8 can be programmed for repeater operation, transmit (TX) at 5 MHz higher than receive (RX).

NOTE: The SCAN feature can be programmed on Channel 4 only.

Programmable Features, Continued

Continuous Tone Coded Squelch System (CTCSS)

CTCSS is used to give you semi-private conversation by eliminating unwanted reception of signals on the same channel, but not programmed with the same CTCSS code. There are 38 standard tones you can program on any channel, except NOAA Weather channels.

The **CTCSS** tones are as follows:

OFF	103.5	162.2
67.0	107.2	167.9
71.9	110.9	173.8
74.4	114.8	179.9
77.0	118.8	186.2
79.7	123.0	172.8
82.5	127.3	203.5
85.4	131.8	210.7
88.5	136.5	218.1
91.5	141.3	225.7
94.8	146.2	233.6
97.4	151.4	241.8
100.0	156.7	250.3

Scan Mode

The SP-100 allows for a channel scan function. The scan feature can be programmed onto Channel 4 only, (making the radio a 3 channel radio with scan) and no channel frequency may be programmed onto Channel 4 with scan. The scan function will scan all programmed channels (Channel 1 ~ 3). NOTE: The programmed will not allow you to program less than 3 channels when the scan feature is enabled.

To initiate the Scan mode, (when programmed), turn the channel selector knob to Channel 4 position - the radio will start to scan. The top panel LED will flash green as the radio is scanning. If conversation is detected on any channel, the radio will stop on that channel and you will be able to hear the conversation. You will be able to transmit

Programmable Features, Continued

(TX) on that active channel during the scan delay time of 5 seconds. Scan delay time is the amount of time the radio will stay on a channel once activity has ceased. The radio will resume scanning once the scan delay time has expired. Scanning will continue until the channel is changed.

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™). This program is being funded through the use of license fees paid by the battery and product manufacturers to place the RBRC™ 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.

INMETCO

245 Portersville Road
Ellwood City, PA 16117
Tel: 412-758-2800
Fax: 412-758-2842

KINSBURSKY BROTHERS INC.

1314 N. Lemon Street
Anaheim, CA 92801
Tel: 714-738-8516
800#: 800-548-8797
Fax: 714-441-0857

Software Copyrights

The Maxon products described in this operating instruction manual may include copyrighted Maxon software programs stored in semiconductor memories or other media. Laws in the United States and other countries preserve for Maxon certain exclusive rights for copyrighted 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.

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 the place of purchase for any service or repairs, or call Maxon direct at: 816/891-6320, ext. 499

Maintenance

Your SP-100 Series radio 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

The Consumer Products Division of Maxon America, Inc. (hereafter referred to as "Maxon") warrants that its Products and their included accessories will be free from defects in workmanship or materials under normal use and service for a period of one (1) year from the date of purchase by the original end user, provided that the buyer has complied with the requirements stated herein.

If the Product fails to function under normal use because of manufacturing defect(s) or workmanship during the one (1) year period following the date of purchase, it will be replaced or repaired at Maxon's option at no charge when returned to the place of purchase. The defective unit must be accompanied by proof of the date of purchase in the form of a sales receipt.

Maxon's sole obligation hereunder shall be to repair or replace the Product covered in this Warranty. Replacement, at Maxon's option, may include a similar or higher-featured product. Repair may include the replacement of parts or boards with functionally equivalent reconditioned or new parts or boards. Replaced parts, accessories, batteries, or boards are warranted for the balance of the original time period. All replaced parts, accessories, batteries or boards become the property of Maxon America, Inc.

Maxon shall have no obligation to make repairs or to cause replacement required through normal wear and tear or necessitated in whole or in part by catastrophe, fault or negligence of the user, improper or unauthorized alterations or 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.

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.

Limited Warranty, Continued

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 U. S. A.

maxon[®]

A World of Communications

Maxon America, Inc.

Consumer Products Division

10828 NW Air World Drive

Kansas City, Missouri 64153

Phone: 816/891-6320; Fax: 816/891-8815