Appendix D

RF Safety

125 Technology Parkway
Norcross, Georgia, US 30092

RF Exposure
Compliance Statement

FCC 15.247(b)(4)
&
FCC 2.1091
Mobile Devices

LXE Model 6726

FCC ID: KDZLXE6726M

LXE Project No: 01-073

LXE 6726 Transceiver

The LXE 6726 is an OEM Direct Sequence Spread Spectrum product manufactured by Cisco Systems.   It is IEEE 802.11b compliant and operates in the band of 2400-2483.5 GHz. The radio is capable of 4 data rates and self adjusts to the most appropriate rate depending on the performance required. The data rates are 11, 5.5, 2 and 1 Mbps, where 11 Mbps gives the maximum throughput for data transfer, and 1 Mbps gives the best coverage where only small data packets are sent.

The radio has 2 ports, each cable of TX/RX operation. The card can be used either with a single antenna scheme in the main port, or a diverse antenna scheme using both ports.

The conducted peak output power of the 6726 is 17.17 dbm

Intended Use

The LXE 6726 transceiver is integrated into LXE host products defined as mobile and portable according to section 2.1091 and 2.1093 respectively of the FCC rules. Portable hosts identified in this report are hand-held devices only and are not intended to be used on the body. Users instructions are being updated to inform the user of the correct way to use these devices in such a manner as to maintain a distance of 20cm from the rest of the body.

A separate certification has been obtained for this same radio for LXE devices defined as portable that are intended to be used on the operators body. The FCC ID for this certification is KDZLXE6726P.

Terminals currently targeted for integration of the 6726 radio card are the MX1, MX2, 2325, VX1, VX2 and 1590. These terminals are LXE PC based mini-computers equipped with PCMCIA slots to accommodate the various radio cards offered, or they can be used as batch terminals with no radio card at all. For batch operations, the PCMCIA slots are utilized as memory or storage space enhancements.

All terminals have been evaluated to, and found to comply with, FCC Part 15, Subpart B, Class A, and in some cases Class B emission requirements.

Antennas

The table below describes each of the antennas and in which terminal they are to be used

Manufacturer	Mfr. P/N	LXE P/N	LXE Model used on	Type	Gain (dbi)	Antenna Scheme
Cushcraft	RTN2400SXR	153180-0001	VX Series	Omni	0	Non-Diverse
Maxrad	MQWS2400RPC					
Huber & Suner	9090.16.0001	990004-0027	2325	Omni	1.8	Non-Diverse
LXE	155522-0001	155522-0001	MX1	Omni	0	Diverse
	155814-0001	155814-0001		Patch		
Toko	DAC2450CT1	NONE	MX2	Omni	2.15	Non-Diverse
Maxrad	MHWS2400RPC	480429-0400	MCWS	Omni	2.0	Non-Diverse
Cushcraft	S2400XXXX **	153179-0001	Access Points 6720, 6721	Omni	0	Both
		153325-0001		Omni	0	
		480424-0400		Omni	0	
	S2403XXXX **	153599-0001		Omni	3	
		153600-0001		Omni	3	
		480424-3404		Omni	3	
	S2406XXXX **	480424-1702		Directional	6	
		480424-3402		Patch	6	
		481246-2400		Patch	6	
	PC2415XXXX **	460601-3020		YAGI	15	
		460602-3020		YAGI	15	
	S2401290P 12RTN	480429-2703		90° Directional	12	
Hypergain	HG2415P	480429-0415		Omni	15	
LXE	Spire	155846-0001		Omni	3	
		155845-0001		Omni	6	
Mobile Mark	OD9-2400	480424-0411		Omni	9	
	OD12-2400	480429-0411		Omni	12	
Xertex	245BD5W-XXXX **	155311-0001		Patch	6	
		480424-3411		Patch	6	

Hand-Held Hosts

The MX1, 2325 and MX2 are intended solely for use in the operators hands. LXE offers no accessories with these devices to allow them to be used on the body, except in the hands.

The LXE MX product family is a series of rugged, handheld computers (HHC's). As with the VX series, these products are used typically in warehouse or port environments for inventory tracking applications. All are battery powered and are very similar in function. The models differ in features such as display and keyboard size and configuration, CPU speed, memory, mass storage, etc. Communications from the HHC to application server is via an RF link to LXE Access Points, devices used to connect the wireless LAN to a wired LAN.

Photographs showing the operating configurations and exposure conditions of each of the hosts have been submitted separately with this filing.

Based on the low output power of the radio, the limited gain of the antennas and the high SAR limits for the hands, we believe a SAR evaluation is not necessary for the hand-held computers. However in an effort to advise the user of the potential risk of excessive exposure, we intend to include the following statement in each of the manuals:

Caution 	*This device transmits RF energy and is designed for hand-held operation only. Use of this device in a manner not consistent with the users instructions can increase the risk of excessive RF exposure.*

Vehicle Mounted Hosts

The LXE VX product family is a series of rugged, vehicle mounted computers (VMC's), whose primary application is to provide data exchange with an application host via a wireless LAN network. The typical application is a VMC mounted on a lift truck in a warehouse or port environment, equipped with a laser barcode scanner, used as an inventory-tracking tool. Communications from the VMC to application server is via an RF link to LXE Access Points, devices used to connect the wireless LAN to a wired LAN.

All VMC's use the same antenna and when installed according to the installation guide, maintain a minimum of 20cm from the antenna to the general population. The following statement is included in the installation guide of each of the VMt's:

Caution 	*This device is intended to transmit RF energy. For protection against excessive RF exposure to humans and in accordance with FCC rules, this transmitter should be installed such that a minimum separation distance of at least 20cm is maintained between the antenna and the general population*

Sales brochures have been uploaded that show a typical installation and/or use for these devices.

Pushcart mounted host
The Mobile Clinical Workstation (MCWS) is a multi-purpose, mobile computer workstation. It is a medical-grade cart equipped with a rechargeable battery, power supply / charger, a fully functional Intel Pentium based computer and display, and associated peripherals. The MCWS is typically used by healthcare professionals in hospital environments, who require mobile, full-featured computers for inputting and retrieving patient information.

When installed according to the installation guide, the MCWS maintains a minimum of 20cm from the antenna to the general population. The following statement is included in the operators guide of the MCWS:

Caution	*This device is intended to transmit RF energy. For protection against excessive RF exposure to humans and in accordance with FCC rules, this transmitter should be installed such that a minimum separation distance of at least 20cm is maintained between the antenna and the general population*

Sales brochures have been uploaded that show a typical installation and/or use for these devices.

Wall or ceiling mounted hosts

Access Points : 6720, 6721, 6722, 6723, 6724
These products are the Access Points providing the bi-directional routing of data traffic between the wireless LAN (the VX and MX computers) and the wired LAN backbone in an installation.

The LXE model 6720 is a tabletop or wall mounted unit.
The LXE model 6721 provides a UL50, Type 4 (NEMA 4) rated weatherproof enclosure for the 6720 AP. Often mounted on outdoor masts or walls.
The LXE model 6722 provides a plenum-rated enclosure designed for installation in standard drop-ceilings for the 6720 AP. The 6722 AP is designed to appear like part of the HVAC system and is aesthetically pleasing. This AP is generally used in office or healthcare environments, and is used in conjunction with the LXE Mobile Clinical Workstations, described below.

When installed according to the installation guide, the MCWS maintains a minimum of 20cm from the antenna to the general population. The following statement is included in the operators guide of the MCWS:

Caution	*This device is intended to transmit RF energy. For protection against excessive RF exposure to humans and in accordance with FCC rules, this transmitter should be installed such that a minimum separation distance of at least 20cm is maintained between the antenna and the general population*

Sales brochures have been uploaded that show a typical installation and/or use for these devices.

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LXE Model MX1
with
# LXE Model 6726 Transceiver

FCC ID: KDZLXE6726M

LXE Project No: 01-073

The LXE Model MX1 is a high end, vertical hand-held terminal (VHHT) typically used in industrial , warehouse or retail settings. The MX1 is equipped with a PCMCIA slot, bar-code scanner and optional RS232 port. The MX1 is used by the operators to track smaller quantities of inventory, order entry and other applications of this nature. The information gathered is then either downloaded via an RS232 link, or transmitted to an LXE Access Point via an RF link. The Access Points are connected to a wired LAN via an Ethernet connection.

Figure 1: LXE Model MX1

Figure 2: MX1 with end-cap removed exposing antenna
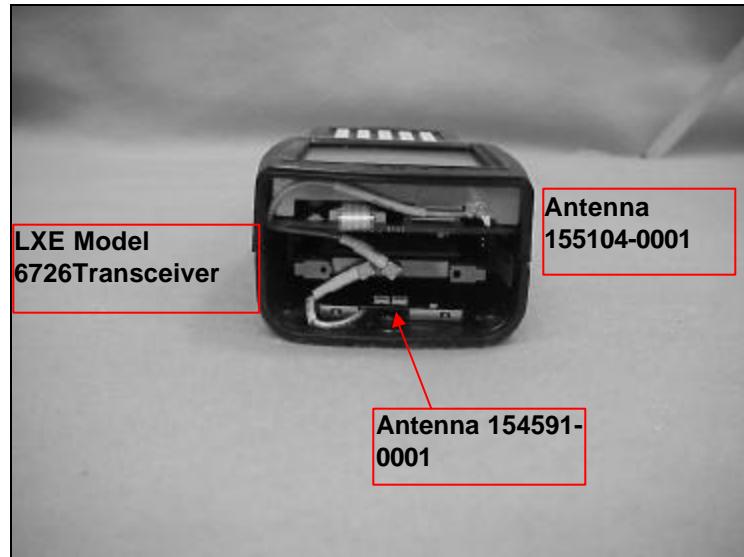
Figure 3: Internal view through end-cap
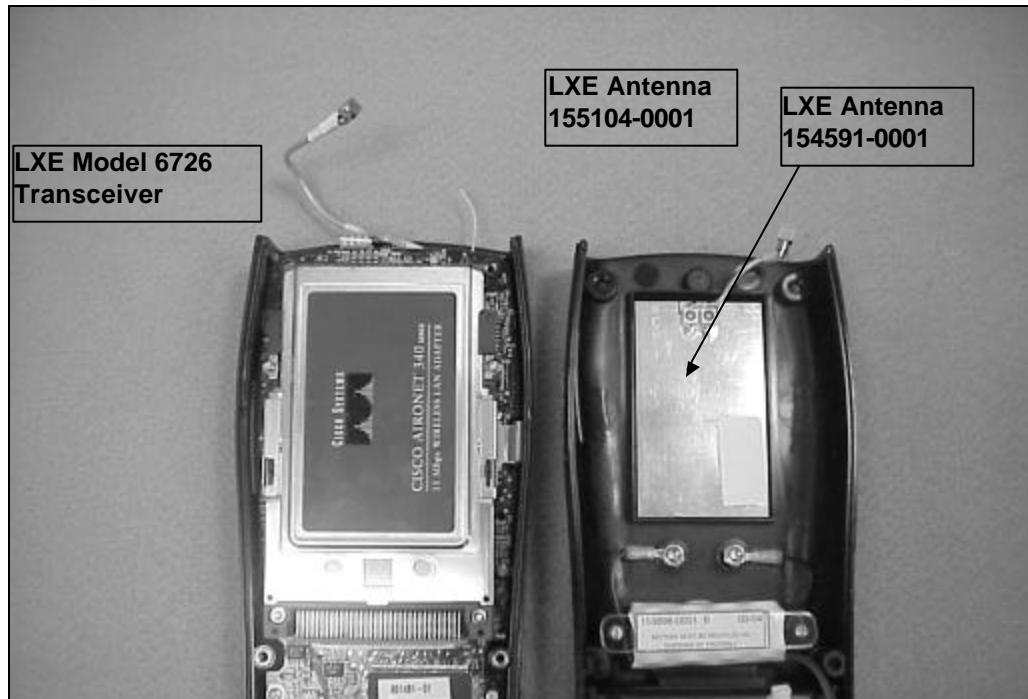
Figure 4: Internal view with back cover removed

Figure 5: Typical user operation
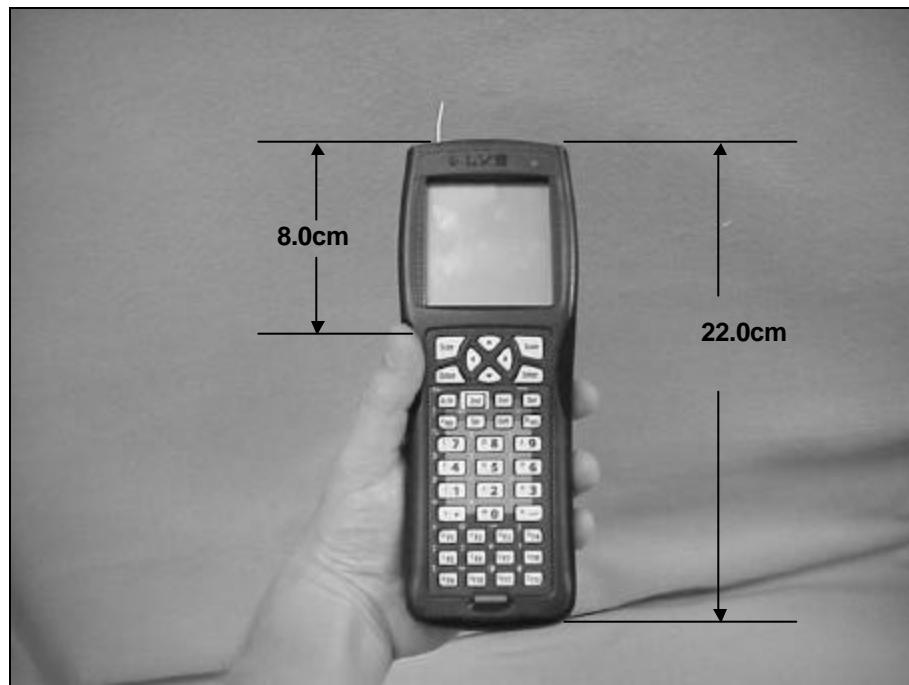
Figure 6: End-cap removed showing location of antenna 155104-0001 relative to the user
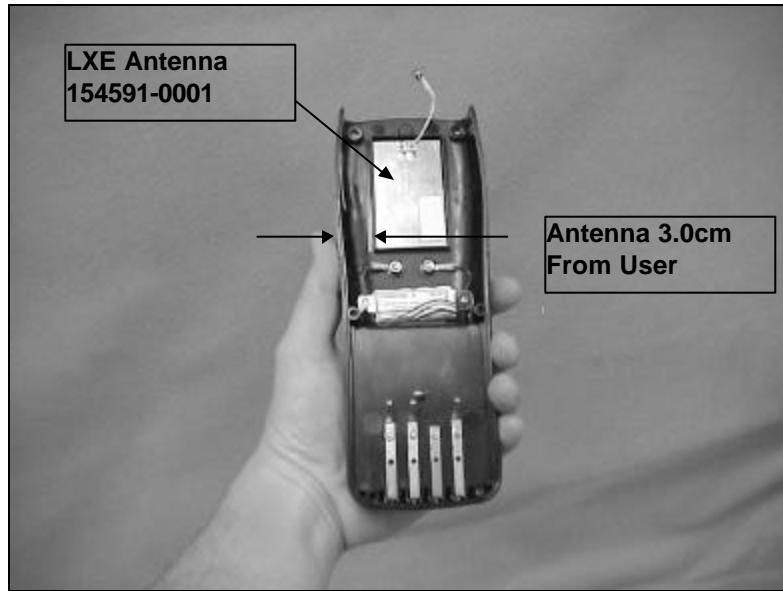
Figure 7: Location of antenna 154591-0001 relative to the user

LXE Model MX2
with
LXE Model 6726 Transceiver

FCC ID: KDZLXE6726M

LXE Project No: 01-073

The LXE Model MX2 is low cost, vertical hand-held terminal (VHHT) typically used in industrial , warehouse or retail settings. The MX2 is equipped with a PCMCIA slot, bar-code scanner and optional RS232 port. The MX2 is used by the operators to track smaller quantities of inventory, order entry and other applications of this nature. The information gathered is then either downloaded via an RS232 link, or transmitted to an LXE Access Point via an RF link. The Access Points are connected to a wired LAN via an Ethernet connection.

Figure 1: MX2 Front View

Model DAC2450CT1 - 2.15dBi Omni-Directional Antenna

Display

Front Cover
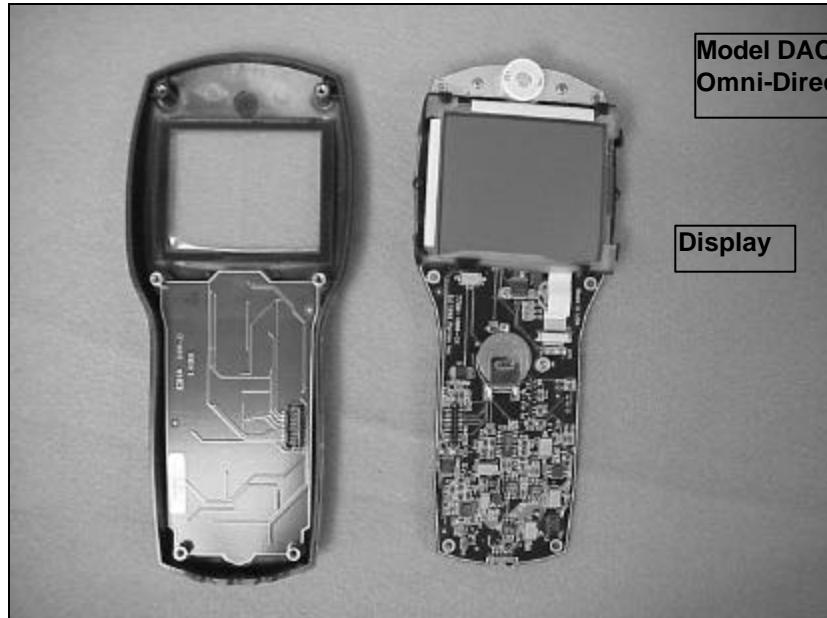
Figure 2: MX2 Opened - Front View with Antenna

Cable to Antenna on Front Side of Board
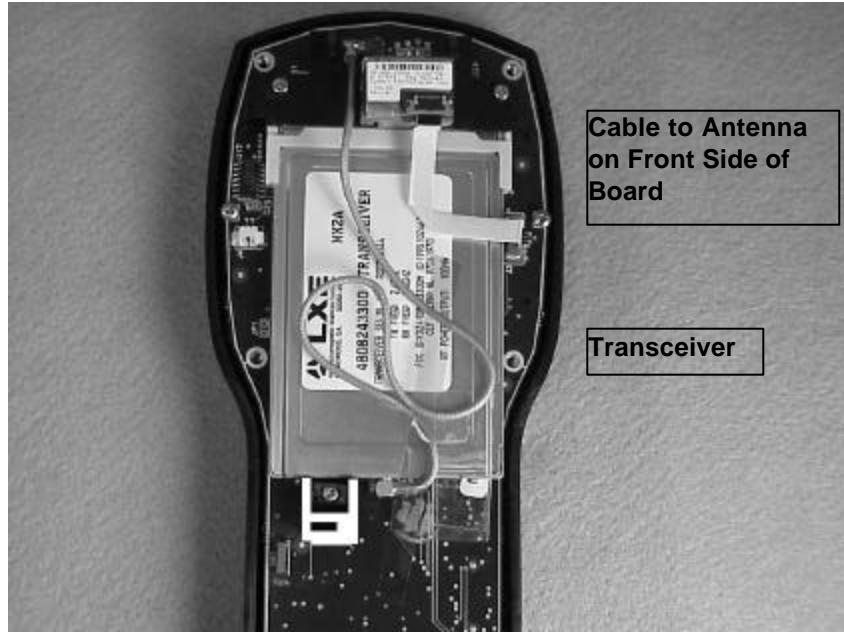
Transceiver

Figure 3: MX2 Opened - Rear View with Radio
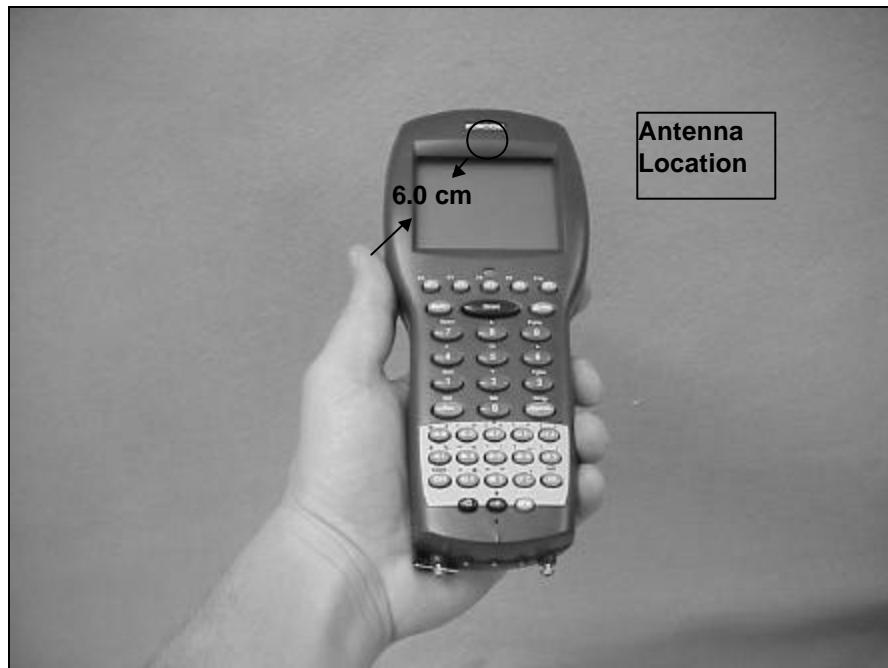
Figure 4: Typical User Configuration
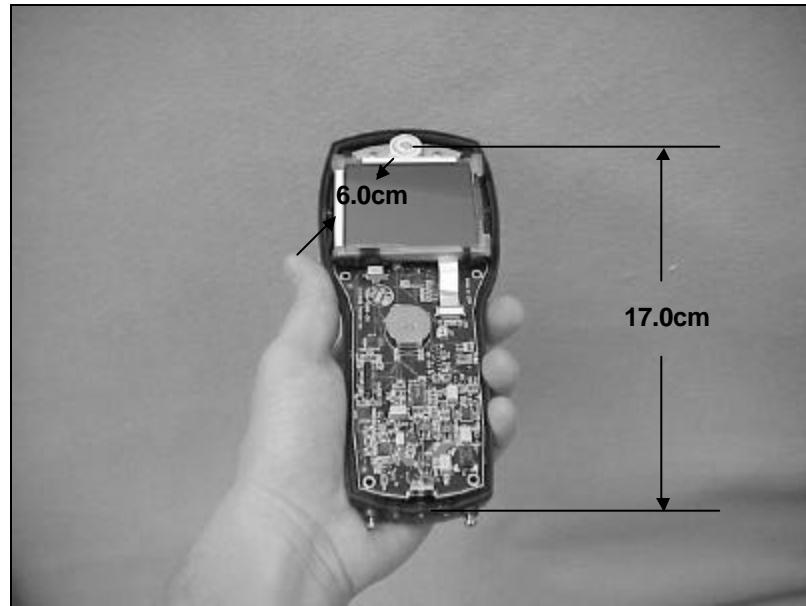
Figure 5: Antenna Location Relative to the User

LXE Model 2325
with
LXE Model 6726 Transceiver

FCC ID: KDZLXE6726P

LXE Project No: 01-073

The LXE Model 2325 is low cost, vertical hand-held terminal (VHHT) typically used in industrial , warehouse or retail settings. The 2325 is equipped with a PCMCIA slot, bar-code scanner and optional RS232 port. The 2325 is used by the operators to track smaller quantities of inventory, order entry and other applications of this nature. The information gathered is then either downloaded via an RS232 link, or transmitted to an LXE Access Point via an RF link. The Access Points are connected to a wired LAN via an Ethernet connection.
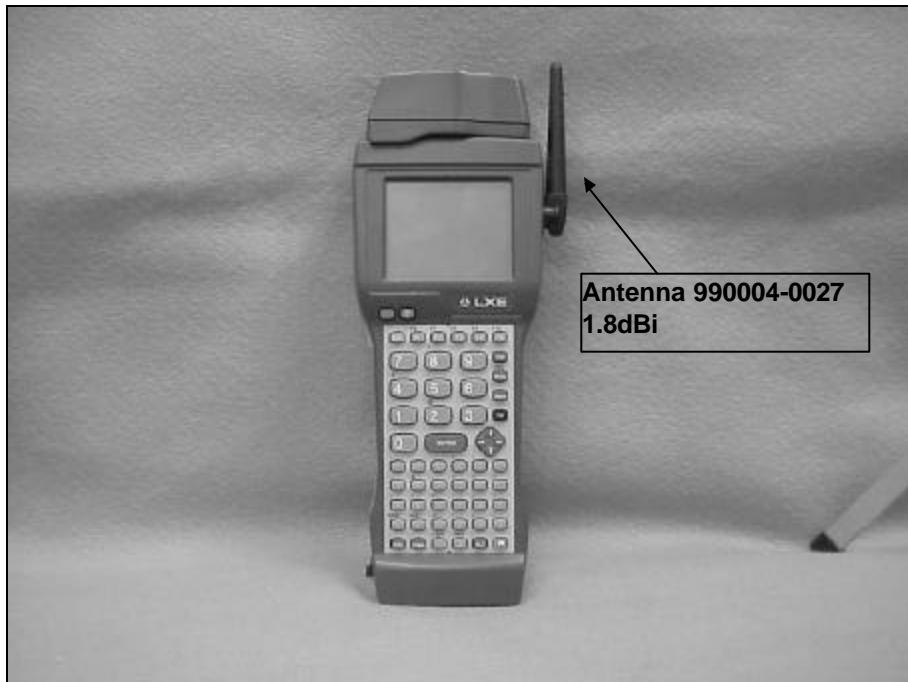

Figure 1: 2325 front view
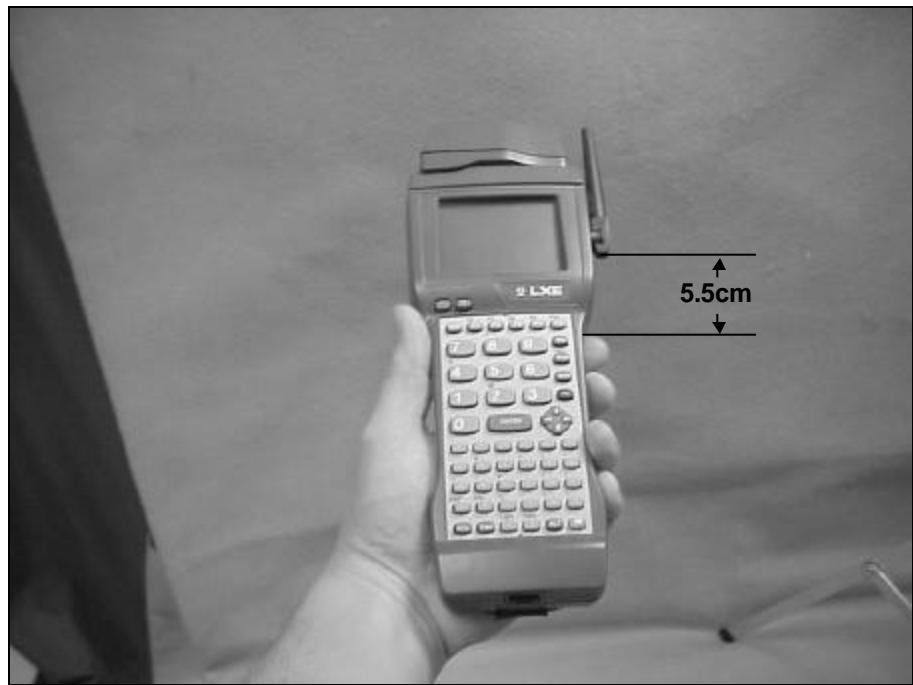
Figure 2: Typical user configuration
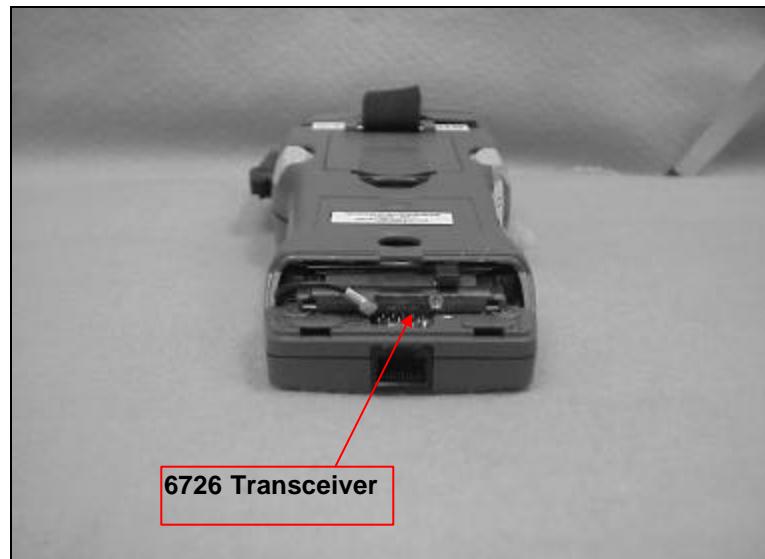
Figure 3: Location of transceiver installed in PCMCIA slot