LXE

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RF Exposure
Compliance Statement

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

LXE Model 6726

FCC ID: KDZLXE6726M

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Amendment 4: Revised RF Safety Statement (Rev. 03)

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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 average conducted output power of the 6726 is 19.29 dbm

Intended Use
The LXE 6726 transceiver is integrated into LXE host products defined as mobile according to section 2.1091 of the FCC rules. The hosts identified in this report are vehicle-mounted devices, wall-or-ceiling mount devices, and hand-held devices not designed to be used on the body.

Terminals currently targeted for integration of the 6726 radio card are the MX1, MX2, 2325, MCWS, and VX-Series. 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.

Table 1: Antennas

Manufacturer	Mfr. P/N	LXE P/N	LXE Model used on	Type	Gain (dbi)	Power Density (S), at 20cm, in mW/cm^2
Cushcraft	RTN2400SXR	153180-0001	VX Series	Omni	0	0.02
Maxrad	MQWS2400RPC					
Huber- Suner	9090.16.0001	990004-0027	2325	Omni	1.8	0.03
LXE	155522-0001	155522-0001	MX1	Omni	0	0.02
	155814-0001	155814-0001		Patch		
Toko	DAC2450CT1	NONE	MX2	Omni	2.15	0.033
Maxrad	MHWS2400RPC	480429-0400	MCWS	Omni	2.0	0.032
Cushcraft	S2400BFNM	153325-0001	Access Points 6720, 6721, 6723, 6724	Omni	0	0.02
	S2406PP18BLKNF	480424-3402		Patch	6	0.08
	PC2415N	460602-3020		YAGI	15	0.63
	S2401290P 12RTN	480429-2703		90° Directional	12	0.32
Hypergain	HG2415P	480429-0415		Omni	15	0.63
LXE	Spire	155846-0001		Omni	3	0.04
		155845-0001		Omni	6	0.08
Mobile Mark	OD9-2400	480424-0411		Omni	9	0.16
	OD12-2400	480429-0411		Omni	12	0.32

Notes: The MX1 employs two antennas for a diverse antenna scheme; only one antenna can transmit at any given time.

Power Density Calculations at 20cm: *Per OET Bulletin 65*

Using the calculation given in OET Bulletin 65, $S = \dfrac{PG}{4\boldsymbol{p}R^2}$, where

S = power density
P = power input to the antenna, in mW
G = power gain of the antenna
R = distance to the center of radiation of the antenna, in cm

Because the antenna gain is known in dBi, G must be converted first to a numeric gain by the equation:

$$G = 10^{\frac{dB}{10}}$$

For the values given for S in the table, a value of 100mW (max radio output power) is used for P, and R is set at 20 cm.

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). 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 include the following statement in each of the manuals:

Caution	*This device is intended to transmit RF energy. For protection against excessive RF exposure to humans and in accordance with FCC and Industry Canada rules, care should be taken to maintain a minimum separation distance of at least 20cm (7.8 in.) between the antenna and the general population. This device is not to be co-located with other transmitters.*

Because the MX1 and MX2 hosts employ internal antennas not visible to the user, an illustration showing the general location of the antennas will be inserted into the Operators Guide below the warning shown above.

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 operators 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 and Industry Canada rules, this transmitter should be installed such that a minimum separation distance of at least 20cm (7.8 in.) is maintained between the antenna and the general population. This device is not to be co-located with other transmitters.*

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 and Industry Canada rules, this transmitter should be installed such that a minimum separation distance of at least 20cm (7.8 in.) is maintained between the antenna and the general population. This device is not to be co-located with other transmitters.*

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 and Industry Canada rules, this transmitter should be installed such that a minimum separation distance of at least 20cm (7.8 in.) is maintained between the antenna and the general population. This device is not to be co-located with other transmitters.*