

APPLICATION		REVISIONS			
NEXT	USED ON	REV	DESCRIPTION	DATE	APPR
			SEE SHEET 2		

Approved Antenna Guide for  
LXE 2.4 GHz Radio Products

QTY REQD	ITEM NO.	PART OR IDENTIFYING NUMBER	NOMENCLATURE OR DESCRIPTION			
PARTS LIST						
DR BY Sam Wismer		DATE 09-22-99	<b>LXE</b> 125 Technology Parkway Norcross, GA 30092-9200 USA  Ref Dwg, Approved Antenna Guide for LXE 2.4 GHz Radio Products			
PROJ.		ENGR. Sam Wismer 09-22-99				
MED			SIZE	FSCM	DWG NO	REV
P. & C.			<b>A</b>	<b>31395</b>	156602-0001	<b>02</b>
SFTY			SCALE		SHEET	OF
APPD.					1	7
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**1.0 INTRODUCTION**

**1.1 Purpose**

The intent of this document is twofold. First, it is to formally identify antennas that are authorized for use on LXE radio products. Antennas that are not identified within this document should be considered unauthorized. Antennas will be added to this document after they have been approved for use by the appropriate agencies.

Secondly, this document provides information regarding the installation requirements of antennas used in LXE Spread Spectrum radios relative to the FCC's RF Safety requirements.

**1.2 Scope**

The scope of this document is limited to LXE 2.4GHz Spread Spectrum radio products, specifically LXE radio models 6430NXR1 and 6430NXR5, and LXE radio part numbers 480824-3300 and 480628-3700.

**1.3 Definitions**

480628-3700	- Lucent Technologies IEEE 802.11, PCMCIA Type 2, 2Mb/s, OEM radio.
480824-3300	- Proxim Inc. PCMCIA Type 2 OEM radio.
6430NXR1	- LXE Model 6430, 100mW Access Point. A productized Proxim Model 7520.
6430NXR5	- LXE Model 6430, 500mW Access Point. A productized Proxim Model 7521.
ETSI	- European Technical Standards Institute
EU	- European Union
FCC	- Federal Communications Commission
FCC OET	- FCC's Office of Engineering and Technology
Mobile Equipment	- Defined by the FCC in section 2.1091(b) of the rules as "...transmitters designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20cm is maintained between radiating antennas and the body of the user or nearby persons."
MPE	- Maximum Permissible Exposure
Portable Equipment	- Defined by the FCC in section 2.1093(b) of the rules as "...transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20cm of the body of the user."

**1.4 References**

ETSI Test Report 97313730 - Indicates all antennas that have been approved for use in ETSI accepting

- countries on LXE Radio Part 480824-3300. Located in the Approvals Library.
- ETSI Test Report 97313731 - Indicates all antennas that have been approved for use in ETSI accepting countries on LXE Radio Part 480824-3300. Located in the Approvals Library.
- ETSI Test Report 98406530 - Indicates all antennas that have been approved for use in ETSI accepting countries on LXE Radio Part 480628-3700. Located in the Approvals Library.FCC Part 15.247(b)(4) - Section of the FCC rules regarding RF Safety of Spread Spectrum Devices.
- FCC OET Bulletin 65 - With Supplement C: Edition(97-01):Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic fields.
- FCC Test Report(s) for FCC ID: IMKAP2-1121 - Indicates all antennas that have been approved for use in FCC accepting countries on the 6430NXR5. Located in the Approvals Library
- FCC Test Report(s) for FCC ID: IMKAP2-1020 - Indicates all antennas that have been approved for use in FCC accepting countries on the 6430NXR1. Located in the Approvals Library
- FCC Test Report(s) for FCC ID: KDZ4808243300M - Indicates all antennas that have been approved for use in FCC accepting countries on LXE Radio Part 480824-3300. Located in the Approvals Library
- FCC Test Report(s) for FCC ID: KDZ480628-3700 - Indicates all antennas that have been approved for use on LXE Radio Part 480824-3300. Located in the Approvals Library

## 2.0 FCC RADIOS

### 2.1 Approved Antennas

The table below identifies by a ✓, the antennas approved for use with LXE 2.4 GHz Spread Spectrum Radio Products in FCC accepting countries. The use of alternate antennas is prohibited unless otherwise approved by the appropriate approval agencies.

<b>Approved Antenna/Radio Combinations For FCC Radios</b>						
<b>Antenna Information</b>			<b>LXE Radio Products</b>			
<b>LXE P/N</b>	<b>Antenna Type</b>	<b>Gain (dBi)</b>	<b>6430 (100mW)</b>	<b>6430 (500mW)</b>	<b>Proxim Type 2</b>	<b>Lucent 802.11(2Mb/s)</b>
153179-0001	Omni	0	✓	✓		✓
153325-0001	Omni	0	✓	✓		✓
153599-0001	Omni	3	✓	✓		✓
153600-0001	Omni	3	✓	✓		✓
480424-0400	Omni	0	✓	✓		
480424-3404	Omni	3	✓	✓		
480424-3402	Patch	6	✓	✓		
460602-3020	YAGI	15	✓			✓
480424-1702	Directional	6	✓	✓		
481246-2400	Patch	6	✓	✓		✓
153180-0001	Omni	0			✓	✓
460601-3020	YAGI	15	✓			✓
154803-0001	Patch	0			✓	
480426-0425	Patch	2.5				✓
155520-0001	Patch	0				✓
155846-0001	Omni	6	✓	✓	✓	✓
155845-0001	Omni	3	✓	✓	✓	✓
155522-0001	Omni	0				✓
155526-0001	Patch	0				✓
155814-0001	Patch	0				✓
154712-0001	Patch	0			✓	
480424-0411	Omni	9	✓	✓		✓
153139-0001	Omni	0			✓	
480424-3411	Patch	4&6	✓	✓		✓
155311-0001	Patch	4&6	✓	✓		✓

### **2.2 RF Safety**

In accordance with the FCC rules regarding Maximum Permissible Exposure(MPE), the antennas given in the table in section 2.1 that are intended for use on Mobile Equipment must be installed such that a minimum separation distance(MPE distance) of at least 20cm is maintained between the antenna and the general population.

### **3.0 ETSI Radios**

#### **3.1 Approved Antennas**

The table below identifies by a ✓, the antennas approved for use with LXE 2.4 GHz Spread Spectrum Radio Products in ETSI accepting countries. ETSI regulations limit the maximum EIRP for a system to 20dBm. This means that the radio power(dBm) plus the antenna gain(dBi) can not exceed 20dBm. The combinations given in the table will not exceed the 20dBm limit. The use of alternate antennas is prohibited unless otherwise approved by the appropriate approval agencies.

<b>Approved Antenna/Radio Combinations For ETSI Radios</b>					
<b>Antenna Information</b>			<b>LXE Radio Products</b>		
<b>LXE P/N</b>	<b>Antenna Type</b>	<b>Gain (dBi)</b>	<b>6430 (100mW)</b>	<b>Proxim Type 2</b>	<b>Lucent 802.11(2Mb/s)</b>
153179-0001	Omni	0	✓		✓
153325-0001	Omni	0	✓		✓
153599-0001	Omni	3			✓
153600-0001	Omni	3			✓
480424-0400	Omni	0	✓		✓
153180-0001	Omni	0		✓	✓
154803-0001	Patch	0		✓	
480426-0425	Patch	2.5			✓
155520-0001	Patch	0			✓
155845-0001	Omni	3			✓
155522-0001	Omni	0			✓
155526-0001	Patch	0			✓
155814-0001	Patch	0			✓
154712-0001	Patch	0		✓	
153139-0001	Omni	0		✓	

### **3.2 RF Safety**

Currently there are no RF Safety requirements in place for ETSI accepting countries. Antennas have no MPE distance restrictions.