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## LIST OF EXHIBITS

EXHIBIT	47 CFR §§	CONTENTS
1:	2.1033(a) & (c)	General Information for Certification
2:	2.1033(c)(3)/24.52	Installation and Instruction Manual including Human Exposure Compliance Statement
3:	2.1033(c)(8)	DC Voltages Applied to and Currents into Final Amplifying Device
*4:	2.1033(c)(9)	Tune-up Procedure
*5:	2.1033(c)(10)	Schematic Diagrams
6:	2.1033(c)(10)	Means for Determining and Stabilizing Frequency, Suppression of Spurious Radiation, Limiting Modulation, and Limiting Power
7:	2.1033(c)(11)	FCC Labeling Information
8:	2.1033(c)(12)	Equipment Photographs
9:	2.1033(c)(13)	Detailed Description of Modulation System
10:	2.1033(c)(14)	General Measurement Information
11:	2.1046/24.232(a)	RF Output Power Measurements
12:	2.1049	Occupied Bandwidth Measurements
13:	2.1051/24.238(a)	Conducted Spurious Emissions Measurements
14:	2.1053	Radiated Spurious Emissions Measurements
15:	2.1055/24.235	Frequency Stability Measurements

\* = Exhibit filed confidentially with the FCC

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EXHIBIT 1

**GENERAL INFORMATION FOR CERTIFICATION**

The information provided in this exhibit is submitted in response to the requirements of § 2.1033 Application for a certification grant of equipment authorization.

**General Description of Equipment (Informative)**

The Xircom, Inc. [formerly Omnipoint Technologies, Inc. (OTI)] Core Engine 1900 MHz GSM Radio Module, FCC ID: **PUKGEM3501**, here after referred to as the Core Engine, is an RF transceiver which operates under the authority of Part 24, Subpart E--Broadband PCS--of the FCC Rules and Regulations. Furthermore, the Core Engine complies with all applicable national and international GSM standards including, for example, J-STD-007, PCS Air Interface Specification (PCS-1900), and the current family of ETSI (European Telecommunications Standards Institute) standards for GSM 900/1800/1900 MHz Phase 2 terminals.

As a wireless data terminal, the Core Engine permits access to the Global System for Mobility, or GSM, network, and ultimately the Public Switched Telephone Network (PSTN) and the internet. The Core Engine will enable a variety of fixed and mobile wireless data applications including Automated Meter Reading (AMR), alarm monitoring, telematics, e-mail and internet access. These types of PCS applications were made possible by the FCC's adoption in June 1996 of rules permitting flexible service offerings in the commercial mobile radio services (WT Docket No. 96-6, FCC 96-83, "Amendment of the Commission's Rules to Permit Flexible Service Offerings in the Commercial Mobile Radio Services, First Report and Order and Further Notice of Proposed Rulemaking," released August 1, 1996, ¶ 29). The Commission's ruling in this proceeding concluded that fixed services, such as those made possible by the Core Engine, are permissible service offerings on spectrum allocated for broadband PCS. This ruling is codified in § 24.3 which states "PCS licensees may provide any mobile communications service on their assigned spectrum. Fixed services may be provided on a co-primary basis with mobile operations."

An overview of Core Engine deployment in a GSM network is shown in Figure E1.1. Functional capabilities of the Core Engine include voice, circuit switched data up to 9.6 kpbs, and other GSM services for transmitting and receiving data (Short Message Service—SMS, Unstructured Supplementary Service Data—USSD and General Packet Radio Service—GPRS).

The Core Engine operates over a wide temperature range (-30°C to +55°C) with a fixed DC input voltage of +3.7 VDC +/- 0.5 VDC. Connection to and communication with the host application is via a sixty pin molded connector; RF interface is through a mini GSC connector. Physically, the EUT consists of a single printed circuit board (PCB) of approximate dimensions 2.09" x 1.37" which is completely encased by top and bottom single-piece metal shields snapped in place onto a fence apparatus soldered to the PCB.

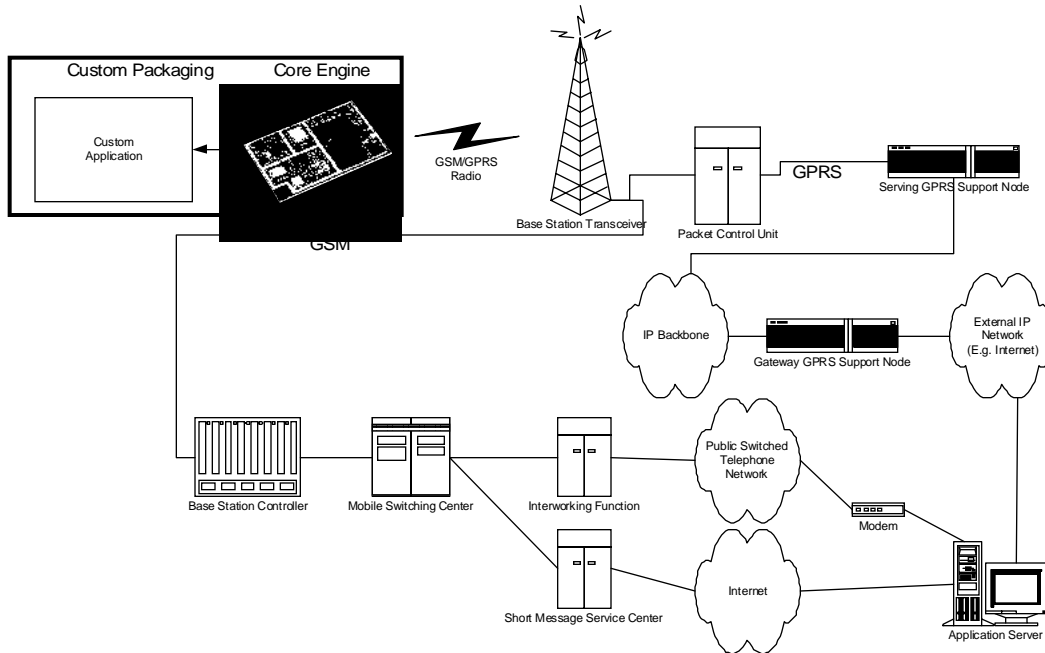


Figure E1.1. Core Engine Deployment in a GSM/GPRS Network.

**Section 2.1033(a) Application for certification**

A completed FCC Form 731 “Application for Equipment Authorization” accompanies this document, both of which have been filed electronically.

**Section 2.1033(c)(1) Name of Applicant**

Applicant: Xircom, Inc., an Intel company  
1357 Garden of the Gods Road  
Colorado Springs, CO 80907

Manufacturer: Siemens Energy & Automation, Inc.  
3000 Bill Garland Road  
Johnson City, TN 37601

Siemens Energy & Automation is a contract manufacturer and will be the final manufacturer of the equipment described in this application.

**Section 2.1033(c)(2) Equipment Identification and FCC Identifier**

Product Name: Core Engine1900 MHz GSM Radio Module  
Model Number: GEM3501  
FCC ID: PUKGEM3501

**Section 2.1033(c)(3) Core Engine Technical Specification**

Refer to Exhibit 2. Included is a statement affirming that the Core Engine complies with current FCC requirements addressing human exposure to radiofrequency radiation, pursuant to the requirements of § 24.52.

**Section 2.1033(c)(4) Type of Emission (Emissions Designator)**

Emissions Designator: **250KGXW**

The maximum measured occupied bandwidth of the signal transmitted by the Core Engine is 250 kHz and thus the sequence 250K was chosen as the first four characters of the emissions designator.

The emissions classification of GXW was determined using the guidance presented in § 2.201. The Core Engine transmits a Gaussian Minimal Shift Keying (GMSK) modulated carrier, a type of phase modulation. Per § 2.201(c), the first symbol of the emission classification, type of modulation of the main carrier, is therefore G.

The second symbol describes the nature of the signal modulating the main carrier. In the Core Engine, a digital signal representing sampled, quantized voice or other audio information, or subscriber and control data, is used to modulate the main carrier. Time Division Multiple Access (TDMA) techniques are used to increase capacity. Per § 2.201(d), the symbol X is appropriate.

Information transmitted by the Core Engine is a combination of subscriber and control data. The third symbol of the emissions classification, which describes the type of information to be transmitted, is thus W as listed in § 2.201(e).

**Section 2.1033(c)(5) Frequency Range**

The Core Engine operates within the combined 1850–1910 MHz and 1930–1990 MHz frequency bands under the authority of Part 24, Subpart E—Broadband PCS. By established convention, broadband PCS terminals transmit in the lower and receive in the upper of the broadband PCS frequency block pairs defined in § 24.229. These blocks and the corresponding Core Engine transmit and receive frequency ranges are listed in Table E1.1.

Table E1.1. Broadband PCS blocks / Core Engine frequencies of operation.

PCS Block	Core Engine Transmit Frequency Range	Core Engine Receive Frequency Range
A	1850 – 1865 MHz	1930 – 1945 MHz
B	1870 – 1885 MHz	1950 – 1965 MHz
C	1895 – 1910 MHz	1975 – 1990 MHz
D	1865 – 1870 MHz	1945 – 1950 MHz
E	1885 – 1890 MHz	1965 – 1970 MHz

F	1890 – 1895 MHz	1970 – 1975 MHz
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**Section 2.1033(c)(6) Range of Operating Powers**

The range of Core Engine transmitter output power levels, as measured at the RF output connector, are as follows:

Measured Maximum Output Power: 29.5 dBm (0.89 W)

Measured Minimum Output Power: 0.15 dBm (1.04 mW)

Maximum RF output power is set during transmitter tune-up at the factory (refer to Exhibit 4 for a description of the tune-up procedure) and cannot be changed during equipment installation or operation.

The RF output power level of each transmitted burst can be adjusted over a 30 dB range (16 steps of 2 dB each). The specific RF output power level chosen by the Core Engine for each transmitted burst is determined by and under the control of the PCS 1900 network, specifically the Base Transceiver Station (BTS). Terminal RF power control is employed by the GSM network to minimize the transmit power required while maintaining the quality of the radio link.

**Section 2.1033(c)(7) Maximum Power Rating**

Per §24.232(a) of the FCC Rules and Regulations, in no case may the peak output power of a broadband PCS base station or fixed terminal exceed 100 W (50 dBm), nor may peak e.i.r.p. exceed 1640 W. Mobile/portable stations are limited to 2 W e.i.r.p. peak power in accordance with the requirements of § 24.232(b). In all applications, the output power of the Core Engine is under control of the GSM network and is kept at the minimum level necessary to ensure successful communications. Furthermore, the Core Engine complies with the RF hazard requirements applicable to licensed PCS equipment for both fixed and mobile uses as specified in § 24.52 and a statement affirming compliance with these requirements is contained in the Core Engine Approvals Guide (refer to Exhibit 2).

**Section 2.1033(c)(8) DC Voltages Applied to and Currents into Final Amplifying Devices**

Refer to Exhibit 3.

**Section 2.1033(c)(9) Tune-up Procedure**

Refer to Exhibit 4. Note that this exhibit has been filed confidentially with the FCC.

**Section 2.1033(c)(10) Schematic Diagram**

Refer to Exhibit 5. Note that this exhibit has been filed confidentially with the FCC.

**Section 2.1033(c)(10) Means for Determining and Stabilizing Frequency, Suppression of Spurious Radiation, Limiting Modulation, and Power**

Refer to Exhibit 6.

**Section 2.1033(c)(11) FCC Labeling Information**

Refer to Exhibit 7.

**Section 2.983(g) Equipment Photographs**

Refer to Exhibit 8.

**Section 2.1033(c)(13) Detailed Description of Modulation System**

Refer to Exhibit 9.

**Section 1.033(c)(14) Measurement Data**

Measurement data and results, as required by § 2.1033(c)(14) and described in §§ 2.1046 through 2.1057, inclusive, are contained in separate exhibits as detailed in Table E1.2. A description of the equipment used to make the required measurements, the general measurement configuration, and the amplitude calibration of the set-up is presented in Exhibit 10.

Furthermore, as summarized in Table E1.2, the Core Engine complies with all applicable requirements, as detailed in each exhibit.

Table E1.2. Measurements required, corresponding exhibits, and summary of results.

Exhibit	47 CFR §	Description	Result
11	2.1046 / 24.232(a)	RF Output Power	COMPLIES
12	2.1049	Occupied Bandwidth	250 kHz
13	2.1051 / 24.238(a)	Conducted Spurious	COMPLIES
14	2.1053	Radiated Spurious	COMPLIES
15	2.1055 / 24.235	Frequency Stability	COMPLIES

**Section 2.1033(c)(15)-(17)**

The requirements of these sections are not applicable.