Exhibit 3 – Description

Motorola Customer Premise Equipment (CPE)

FCC ID: MIJMILCPE-USA-01

Millitech Part No. 9031295602

3.0 Transmitter Description

The Millitech CPE (Customer Premise Equipment) is part of an LMDS point to multi-point networking system. It is an outdoor unit that is physically located at the subscriber side of the LMDS wireless link. The CPE functions as a wireless transceiver to bridge the gap between baseband modem frequencies and FCC allocated LMDS frequencies. The interfacing modem and LMDS signals will be referred to as IF and RF respectively for the remainder of this document. Figure 3.0-1 depicts the major functional interfaces of the CPE.

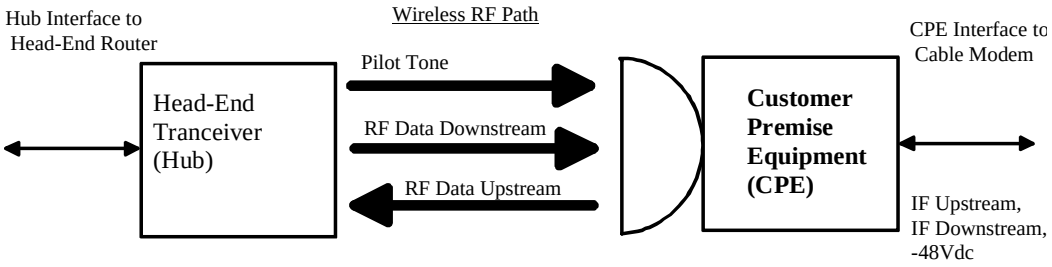
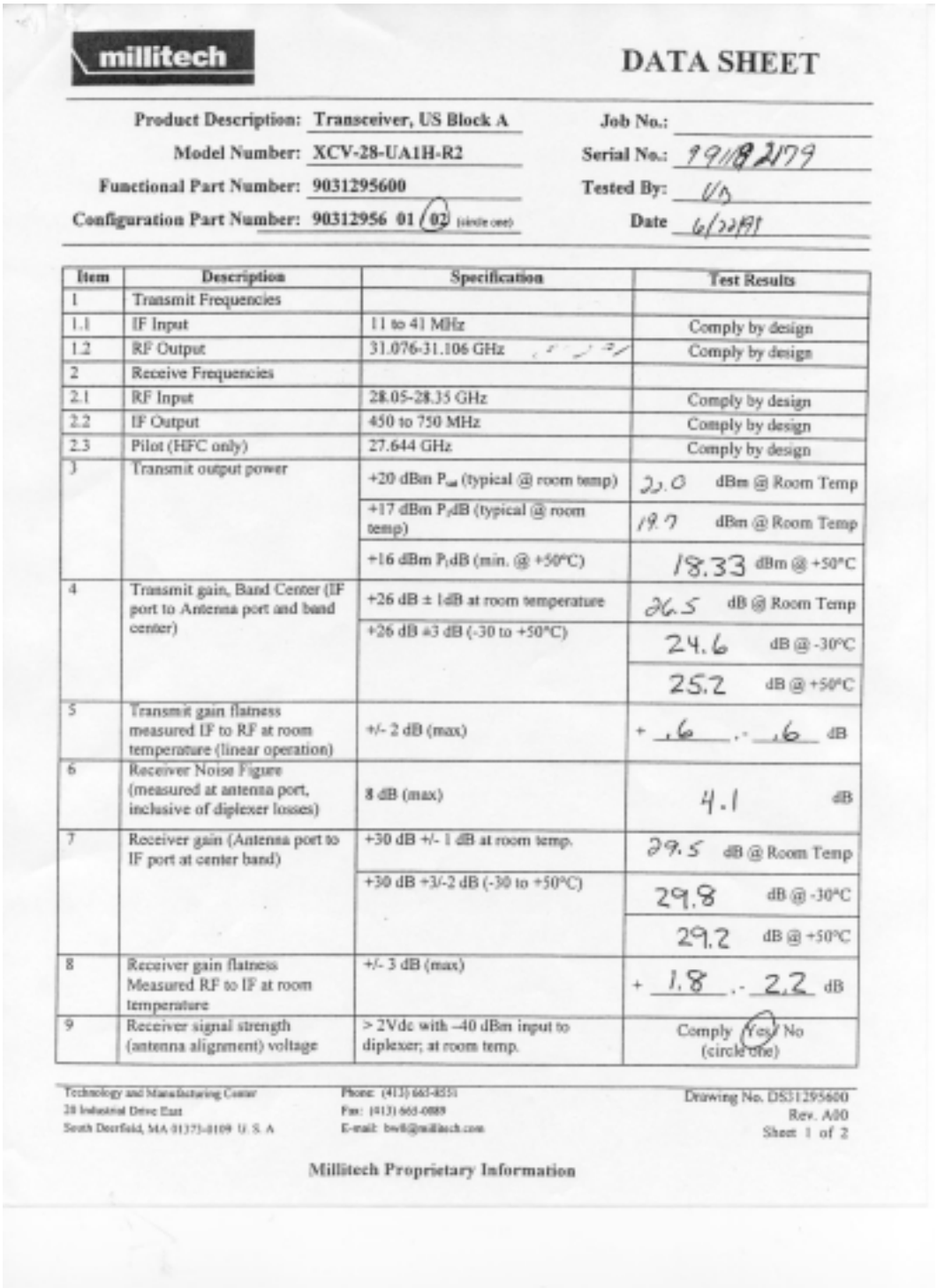


Figure 3.0-1 CPE Functional Interface

The CPE IF signals interface with a cable modem that is located within the customer's premises. A single coax connector on the CPE carries IF signals both upstream and downstream, as well as DC power to the CPE. A reflector antenna, nominally 12 inches in diameter, provides the means for transmitting and receiving wireless RF signals. The maximum transmitted RF output power is limited by the saturated output power of the last amplifier stage. The typical saturated output power from the CPE is 0.25 watts.

Frequency translation between IF and RF frequencies is accomplished using four local oscillators. The oscillators are frequency locked to a single 100 MHz crystal reference. The crystal reference also passes through a frequency doubler to effectively form a fifth local oscillator. Using a common reference internal to the CPE ensures frequency coherence between the transmitter and receiver paths.

3.1 Transmitter Technical Characteristics



millitech

DATA SHEET

Product Description: Transceiver, US Block A
Model Number: XCV-28-UA1H-R2
Functional Part Number: 9031295600
Configuration Part Number: 90312956 01 (02) (circle one)

Job No.:
Serial No.: 991182179
Tested By: US
Date 6/22/99

Item	Description	Specification	Test Results
1	Transmit Frequencies		
1.1	IF Input	11 to 41 MHz	Comply by design
1.2	RF Output	31.076-31.106 GHz	Comply by design
2	Receive Frequencies		
2.1	RF Input	28.05-28.35 GHz	Comply by design
2.2	IF Output	450 to 750 MHz	Comply by design
2.3	Pilot (HFC only)	27.644 GHz	Comply by design
3	Transmit output power	+20 dBm P_{sat} (typical @ room temp)	20.0 dBm @ Room Temp
		+17 dBm P1dB (typical @ room temp)	19.7 dBm @ Room Temp
		+16 dBm P1dB (min. @ +50°C)	18.33 dBm @ +50°C
4	Transmit gain, Band Center (IF port to Antenna port and band center)	+26 dB ± 1dB at room temperature	26.5 dB @ Room Temp
		+26 dB ±3 dB (-30 to +50°C)	24.6 dB @ -30°C
			25.2 dB @ +50°C
5	Transmit gain flatness measured IF to RF at room temperature (linear operation)	+/- 2 dB (max)	+ .6 , - .6 dB
6	Receiver Noise Figure (measured at antenna port, inclusive of diplexer losses)	8 dB (max)	4.1 dB
7	Receiver gain (Antenna port to IF port at center band)	+30 dB +/- 1 dB at room temp.	29.5 dB @ Room Temp
		+30 dB +3/-2 dB (-30 to +50°C)	29.8 dB @ -30°C
			29.2 dB @ +50°C
8	Receiver gain flatness Measured RF to IF at room temperature	+/- 3 dB (max)	+ 1.8 , - 2.2 dB
9	Receiver signal strength (antenna alignment) voltage	> 2Vdc with –40 dBm input to diplexer; at room temp.	Comply (Yes) No (circle one)

Technology and Manufacturing Center
28 Industrial Drive East
South Deerfield, MA 01373-0109 U. S. A.
Phone: (413) 665-8551
Fax: (413) 665-0889
E-mail: bwh@millitech.com

Drawing No. DS31295600
Rev. A00
Sheet 1 of 2

Figure 3.1-1 CPE transmitters technical data sheet, 1 of 2

millitech

DATA SHEET

Product Description: Transceiver, US Block A
Model Number: XCV-28-UA1H-R2
Functional Part Number: 9031295600
Configuration Part Number: 90312956 01 / 02 (circle one)

Job No.:
Serial No.: 99182175
Tested By: VD
Date 6/24/99

Item	Description	Specification	Test Results
10	Receiver input compression (P1dB)	-30dBm (min)	-20.0 dBm
11	IF Downstream Spurious emissions	Outside operating band: DC to 500 MHz -30 dBm (max)	-84.0 dBm
		Outside operating band: 750 MHz to 50 GHz -30 dBm (max)	-30.0 dBm
12	TX Spurious emissions (measured at antenna port with single carrier at +16dBm, and at room temperature)	Outside operating band: 30 MHz to 21.2 GHz -60 dBm (max)	Comply by design
		Outside operating band: 21.2 GHz to 50 GHz -30 dBm (max)	-38.0 dBm
		Inside operating band: 29.20 to 31.20 GHz -25 dBc (max)	-34.0 dBc
13	Phase Noise Transmit/Receive (at PLDRO):	1 KHz offset -75 dBc/Hz (max)	Comply by design
		10 KHz offset -80 dBc/Hz (max)	Comply by design
		100 KHz offset -95 dBc/Hz (max)	Comply by design
		1 MHz offset -120 dBc/Hz (max)	Comply by design
14	Antenna	Integrated 300 mm parabolic	Comply by design
15	Antenna Gain	34 dBi (typical)	Comply by design
16	Antenna Polarization	Single	Comply by design
17	Mount	64 to 114 mm dia. pole mount Elevation +/- 30 degrees coarse Azimuth 360 degrees	Comply by design
18	I/O Connector	Type F (female) Impedance: 75Ω	Comply by design
19	Power requirements	-48V +/- 20% (on coax center conductor) Power consumption: 35W typical 1 Amp (max) @ -48 Vdc	.532 A @ -48Vdc 25.5w
20	Weight	8 Kg (excluding mount) (max) 2.5 Kg (mount)(max)	Comply by design
21	Dimensions	365 dia x 200 deep (mm) (max)	Comply by design
22	Environmental		
22.1	Operating temp	-30 to +50°C	Comply (Yes) No (circle one)
22.2	Non-operating	-40 to +80°C	Comply by design
23.3	Humidity	5% to 95% non condensing	Comply by design

Technology and Manufacturing Center
20 Industrial Drive East
South Deerfield, MA 01373-0109 U. S. A.
Phone: (413) 665-8551
Fax: (413) 665-8089
E-mail: bwil@millitech.com

Drawing No. DS31295600
Rev. A00
Sheet 2 of 2

Figure 3.1-2 CPE transmitters technical data, sheet 2 of 2

3.1.1 RF Power Output

The CPE Data transmitter output power is +17dBm typical at room temperature. The specified minimum output power is +16dBm minimum from @ +50^{o} C. The CPE Data transmitter was operated at an output power of +18dBm.

3.1.2 Frequency Range

The CPE employs a single frequency in the 31.076 to 31.106 GHz frequency band.

3.1.3 Frequency Stability

Frequency stability is .001% by design.

3.1.4 Emission Designator

The CPE itself uses no modulation techniques. Modulation necessary to support the LMDS link is performed by equipment external to the CPE.

3.1.5 DC Voltage

The CPE operating voltage range is –48 volts ± 20%.

3.2 Transmitter Application

3.2.1 Power Supply Available

The CPE transceiver operates from –48Vdc power with a maximum current draw of 1.0 amperes.

3.2.2 Antenna Available

Figure 3.2-1 and Figure 3.2-2 provide the elevation and azimuth antenna gain patterns for the CPE antenna. The antenna is a 300mm parabolic antenna with a gain of 34 dBi (typical).

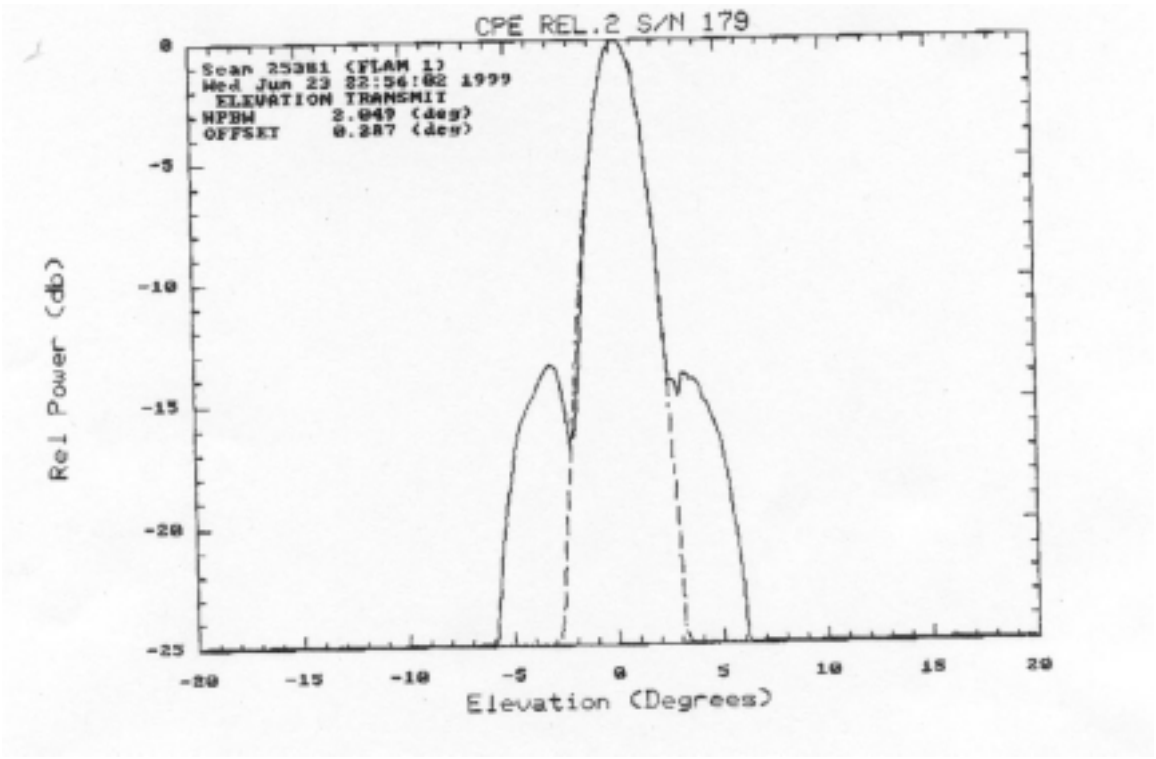


Figure 3.2-1 Elevation beamwidth for CPE transmit antenna

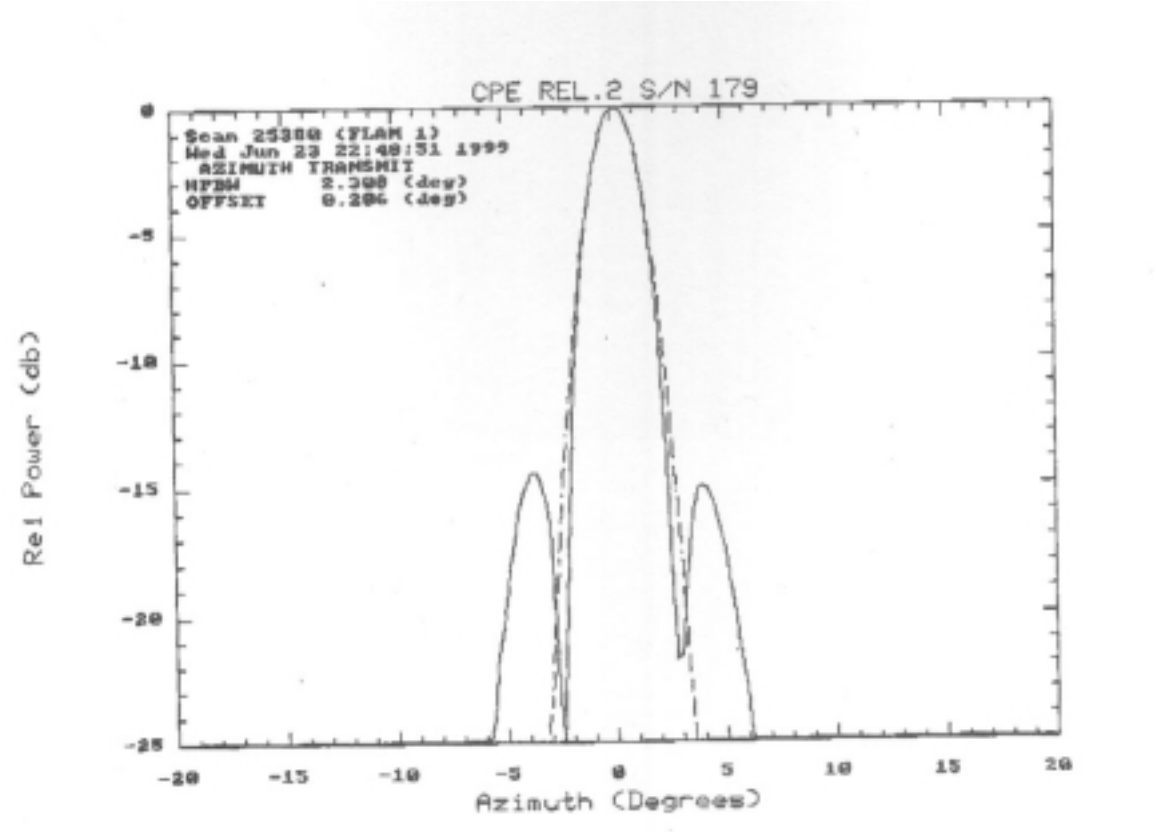


Figure 3.2-1 Azimuth beamwidth for CPE transmit antenna

3.2.3 Maximum Transmit Channel Capacity

The CPE is capable of a single frequency transmit.