

Equipment Information

Radio Equipment Specifications

Exhibit 3
The Blue Zone Utah
Draper, UT

The following contains information provided by the manufacturer regarding the CPE and base station equipment to be utilized during the proposed system tests.

RedMAX Base Station (AN-100U) System Specifications

System Capability:	LOS, Optical LOS, non LOS Cell-based point-to-multipoint
RF Band:	3.3-3.5*; 3.4-3.6; and 3.6-3.8 GHz
Channel Size:	3.5 MHz, 7 MHz
RF Dynamic Range:	> 40 dB
Spectral Efficiency:	Up to 5 bps/Hz (over the air)
Over The Air Rate:	Up to 35 Mbps (7 MHz channel, rates depend on channel size)
Ethernet Data Rate:	Up to 23 Mbps (7 MHz channel)
Latency:	6-18 msec (depends on channel size, OFDM frame duration)
Maximum Tx Power:	+23 dBm across all modulation/coding levels (region specific)
Rx Sensitivity:	Better than -98 dBm @ BPSK 1/2 (based on BER of 1x10e-6)
IF Cable:	Maximum length up to 984 ft (300 m) using Redline recommended high-grade IF cable
Network Attributes:	Transparent bridge 802.1Q, TOS/DSCP and L2/L3 address, traffic classification DHCP client, client pass-through
Modulation/Coding Rates:	Auto-select modulation: BPSK, QPSK, 16 QAM, 64 QAM
Auto-select coding:	1/2, 2/3, 3/4
Over the Air Encryption:	DES and AES*
MAC:	Cell-based PMP deployment 802.16-2004 compliant PMP 802.16-2004 packet convergence sub-layer mode TDMA Access
Range:	Over 28 mi (40 km) LOS; 12mi (20 km) PMP Over 2 mi (3 km) non LOS
Duplex Technique:	TDD (time division duplex) HD-FDD (half duplex frequency division duplex)
Wireless Transmission (PHY):	256 FFT Orthogonal Frequency Division Multiplexing (OFDM) (Orthogonal Frequency Division Multiplexing)
Network Connections:	Standard: 10/100 Ethernet (RJ-45)
System Configuration:	HTTP (Web) interface, SNMP CLI via Telnet and Local Console
Network Management:	SNMP, standard and proprietary MIBs Full management by RedMAX Management Suite (RMS)
Power Requirements:	Auto-sensing 110/220/240 VAC 50/60 Hz Auto-sensing 18-72 VDC, 80 W maximum
Redundant Power:	Optional dual AC or dual DC power supply (dual cord) with automatic fail-over
Compliance:	EMC: EN 301 489-1, EN 301 489-4, EN 55022/CISPR 22
RF:	EN 302 326, Industry Canada: RSS-192
Safety:	IEC 60950-1, UL 60950-1
Operating Temperature: IDU:	0 C to 40 C
ODU:	-40 C to 60 C
Dimensions:	17 x 12 x 1.75 in (431.8 x 304.8 x 44.45 mm)
Weight:	5.5 lb (2.5 kg)
Humidity:	Up to 90% non-condensing

RedMAX Subscriber Unit (SU-O) System Specifications

System Capability:	LOS, Optical LOS, non-LOS Cell-based Point-to-Multipoint
RF Band:	3.3-3.5*; 3.4-3.6; and 3.6-3.8 GHz
Channel Size:	3.5 MHz, 7 MHz
Spectral Efficiency:	Up to 5 bps/Hz (over the air) Up to 3 bps/Hz (net to Ethernet)
Over The Air Rate:	Up to 35 Mbps (@7 MHz, rates depend on channel size)
Ethernet Data Rate:	Up to 23 Mbps (@7 MHz)
Maximum Tx Power:	Up to +20 dBm (region specific)
Rx Sensitivity:	Better than -98 dBm @ BPSK 1/2 (based on BER of 1x10 ⁻⁶)
Cable:	Maximum length up to 250 ft (76 m) using Redline recommended shielded outdoor cable
Network Attributes:	Transparent bridge 802.1p, 802.1Q VLAN port tagging 802.1Q, TOS/DSCP and L2/L3 address, traffic classification DHCP client
Modulation/Coding Rates:	Auto select: BPSK, QPSK, 16 QAM, 64 QAM
Coding Rates:	1/2, 3/4 and 2/3 Over the Air Encryption: DES and AES*
MAC:	Cell-based PMP deployment 802.16-2004 compliant PMP 802.16-2004 packet convergence sub-layer mode TDMA access
Duplex Technique:	TDD (time division duplex) HD-FDD (Half Duplex Frequency Division Duplex)
Wireless Transmission (PHY):	256 FFT Orthogonal Frequency Division Multiplexing (OFDM)
System Configuration:	SNMP, FTP, CLI
Network Management:	SNMP, standard and proprietary MIBs Full management by RedMAX Management Suite (RMS)
Power Requirements:	PoE-Standard IEEE 802.3af
Available Power Blocks:	Auto-sensing 110/220/240 VAC 50/60 Hz
Compliance: EMC:	EN 301 489-1, EN 301 489-4, EN 55022/CISPR 22
RF:	EN 301 021, EN 301 753, Industry Canada: RSS-192
Safety:	IEC 60950-1, EN 60950-1, UL 60950-1
Operating Temperature:	-40 C to 65 C
Antenna: Standard:	Integrated 14 dBi flat panel
Optional:	Selection of non integrated high gain antennas
Dimensions/Weight:	8" W x 8" L x 2.5" H (20 cm x 20 cm x 6.35 cm) / 4.5 lbs (2 Kg) not including mounting bracket