DATA SHEET

Adaptrum
ACRS2-B1000

TV White Space Basestation

Ultimate Long-Range Fixed Wireless Coverage

Adaptrum's ACRS2-B1000 provides the ultimate long-range non-line-of-site coverage for delivering fixed wireless internet service to rural areas with low population densities. When paired with an Adaptrum FP sector antenna, B1000 sectors operates at the highest permitted radiated power levels to provide the maximum coverage and optimum downlink performance. Fully compliant with TVWS regulations globally and interoperable with leading spectrum database providers, the ultra-wideband frequency-agile B1000 basestation radio, can operate in any available channel in the UHF TV Band.

Long Range. Great Penetration

Low frequency TVWS spectrum combined with Adaptrum's Non-Line-of-Sight (NLOS) OFDMA technology provides better propagation and improved signal penetration. Means reliable service even in rugged terrain and heavy foliage.

Fast & Low Latency

Industry leading channel efficiency and Just-In-Time OFDM Frame Buffering technology supporting up to 256-QAM provides highest data rates and lowest latency in any TVWS system. Means robust delivery of broadband services.

Expanded Performance

Supporting operation across two adjacent channels, the B1000 supports Adaptrum channel expansion feature to doubles the system capacity and maximum throughput.

Optimized Dynamic Access

Wideband frequency agile radios and patented Agile Sensing technology provide unlicensed access to underutilized TV White Space spectrum. Allows dynamic selection of best channels and optimal network channel planning.

Interference Free Coexistence

Patented Clean Radio Emission technology produces the cleanest out-of-band emission in the industry. Ensures each B1000 operates with interference free coexistence to TV broadcast systems and TVWS networks.

Future Proof Infrastructure

Built on a robust software defined platform, the B1000 is fully field upgradable enabling it to support future radio enhancements and additional features

Ultra Rugged

Sealed and ruggedized aluminum shell construction allows the B1000 to withstand the harshest environmental conditions and achieve extended outdoor life anywhere around the world.

Manage with Ease

Status and configuration of every device are instantly accessible remotely via the Adaptrum network manager system. Intuitive controls and rich data collection & analysis makes managing and monitoring whole networks easy.

Simple Deployment

The B1000 can be wall or pole-mounted with a simple, provided bracket. Along with a convenient carrying handle, allows easy installations and flexible deployments with existing infrastructure in any location.

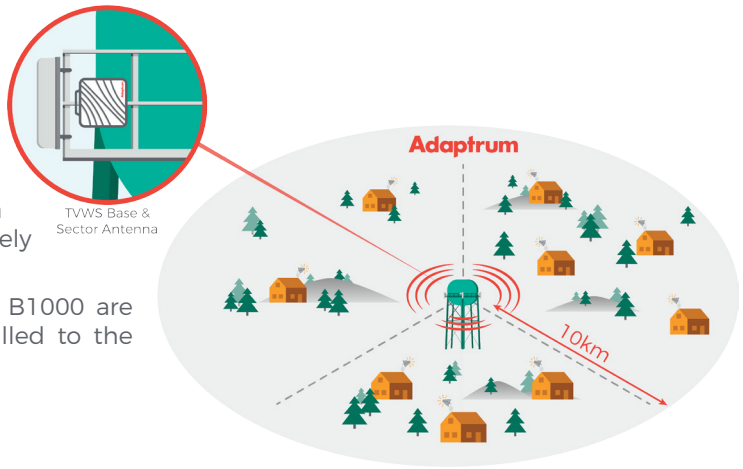
Auto Geo-Location

A built-in GPS receiver streamlines the deployment and initial configuration of database authorized access to the TV White Space spectrum.

360° Point-to-Multipoint TVWS Network

Supporting non-line-of-site links out to a distance of 6mi (10km), when deployed in a typical 3-sector configuration, a site using B1000 radios can cover a 360° area of approxmiately 120mi² (300km²)

To complete the fixed wireless point-to-multipoint network, B1000 are deployed along with ACRS2.0 client radios, which are installed to the exterior of homes and other subscriber end-points.



B1000 Technical Specifications

Performance

Max Data Rate (PHY):
26.7Mbps/6MHz; 37.3Mbps/8MHz; 46.7Mbps/10MHz

Delivered Throughput (IP):
13Mbps/6MHz; 20Mbps/8MHz; 24Mbps/10MHz

Bandwidth Efficiency: 94%

Latency: 15ms typical

Radio

Frequency Range: 400MHz - 1GHz (restricted by country)

Channel Bandwidth: 6/7/8MHz channel plans, supporting channel expansion to 10MHz for 6MHz channel plans

Modulation: QPSK, 16QAM, 64QAM, 256QAM

Max Conducted Power: 600mW (28dBm)

Adjacent Channel Emission: < -55dBc

Sensitivity (by channel size):

SNR	6MHz Ch.		8MHz Ch.		Modulation
(dB)	Sensitivity (dBm)	Rate (Mbps)	Sensitivity (dBm)	Rate (Mbps)	
3.5	-98.0	4.0	-96.75	5.6	QPSK 1/2
11.5	-90.0	10.6	-88.75	14.8	16QAM 2/3
21.5	-80.0	20.0	-78.75	28	64QAM 5/6
29.0	-72.5	26.7	-71.25	37.3	256QAM 5/6

Features

Agile Sense Channel Scan: Active scan monitors & logs on-going RF conditions across channels (no service impact)

Adaptive Resource Ratio: Dynamic auto-optimized down/up resource allocation

Auto Geo-Locaton: Integrated high sensitivty GNSS receiver with 3 system concurrent reception

Power

Max Power Consumption: 30W

System Power: Passive PoE 48V DC (110V/240V PoE Injector included optionally)

System Interfaces

External Antenna: N-Type Female

Data/Control/Power: 10/100 Ethernet

Management: Adaptrum HTTPS HTML5 based Web GUI & NMS, SNMPv3 Remote Monitoring

External Antenna Options

Log-Periodic: Vertically polarized 65˚, 11dBi

Panel Antenna: Vertically polarized 90˚, 11dBi

Physical

Size: 12in x 10.5in x 3.5i (310mm x 270mm x 85mm)

Weight: 10lbs (4.5kg)

Enclosure Characteristics: Weatherproof sealed aluminum

Mounting: Wall & pole mounting bracket included

Environmental

Operating Temperature: -40˚C to 50˚C (-40˚F to 122˚F)

Operating Humidity: 5% to 100%

Regulatory & Compliance

Approvals: FCC, Pending ETSI, iDA

About Adaptrum

Driving both technical and regulatory innovations, Adaptrum has pioneered the use of previously underutilized TV White Space spectrum. Founded by leading experts in wireless communications, our creative and experienced team is committed to fundamentally changing the wireless industry and enabling universally affordable broadband.

Adaptrum

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