DATA SHEET

# Adaptrum
# ACRS2-**B2000**


## Super far. Super fast.
## TV White Space Broadband.

The Adaptrum ACRS2-B2000 basestation delivers the broadband capacity across the longest distances of any fixed wireless solution. Adaptrum's ACRS2-B2000 adds dual carrier aggregation that enbles it to operate across two non-contiguous channels and doubling the capacity delivered. Fully compliant with TVWS regulations globally and interoperable with leading spectrum database providers, the wideband frequency-agile B2000 basestation radio, can operate in any available channels in the UHF TV Band. In a rugged connectorized enclosure, the ACRS2-B2000 is the ideal radio for delivering affordable wireless service : from rural broadband for underserved communities, to machine-to-machine communication.

### 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.

### Super Fast Broadband
Combining dual carrier aggregation and dual channel expansion with industry leading channel efficiency, the B2000 is capable of deliveriing up to 42Mbps of throughput to meet today's demanding broadband needs.

### Dynamic Access
Wide-band 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 planning.

### Interference Free
Patented Clean Radio Emission technology produces the cleanest out-of-band emission in the industry. Ensures each B2000 operates with interference free coexistence to TV broadcast systems and TVWS networks.

### Future Proof Infrastructure
Built on a robust software defined platform, the B2000 is fully field upgradeable enabling it to support future radio enhancements and additional features

### Ultra Rugged
Sealed and ruggedized aluminum shell construction allows the B2000 to withstand the harshest environmental conditions ad achieve extended outdoor life anywhere around the world.

### Manage with Ease
Status and configuration of every device are instantly accessible remotely via Adaptrum management software tools. Intuitive controls and rich data collection & analysis makes managing and monitoring whole networks easy.

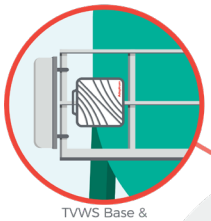
### Simple Deployment
The B2000 can be wall or pole-mounted with the provided bracket. Along with a convenient carrying handle, allows easy installations and flexible deployments with existing infrastructure in any location.

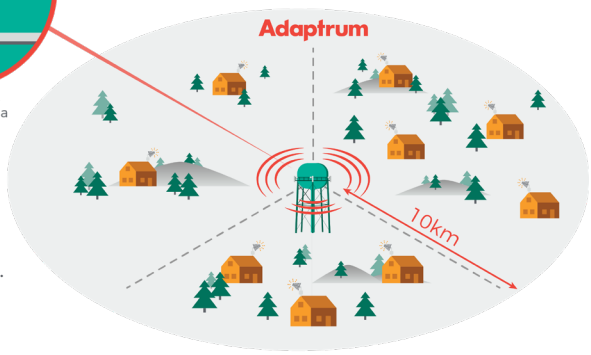
### Auto Geo-Location
A built-in GPS receiver streamlines the deployment and initial configuration of database authorized access to the TV White Space spectrum.

## 360° Point-to-Multipoint TVWS Network

Supporting non-line-of-sight links out to a distance of 6mi (10km), a site using B2000 radios can cover a 360° area of approximately 120mi² (300km²) when deployed in a typical 3-sector configuration,

To complete the fixed wireless point-to-multipoint network, B2000 are deployed along with ACRS2 client radios and directional client antennas, which are installed to the exterior of homes and other subscriber end-points.


TVWS Base & Sector Antenna




## B2000 Technical Specifications

### Performance

Max Data Rate (PHY): 46Mbps/2x6MHz; 65Mbps/2x8MHz; 81Mbps/2x10MHz

Delivered Throughput (IP): 23Mbps/2x6MHz; 34Mbps/2x8MHz; 42Mbps/2x10MHz

Bandwidth Efficiency: 94%

Latency: 15ms typical

### Radio

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

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

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

Max Conducted Power: 200mW (23dBm)

Adjacent Channel Emission: < -55dBc

Sensitivity (by channel size):

| SNR | 1x6MHz Ch. | | 1x8MHz 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 sensitivity GNSS receiver with 3 system concurrent reception

### Power

Max Power Consumption: 42W

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

Database Access: PAWS (IETF RFC 7545)

Management: Adaptrum browser-based GUI & NMS, SNMP Remote Monitoring

### External Antenna Options

Log-Periodic: Vertically polarized 65˚, 11dBi

Panel Antenna: Vertically polarized 90˚, 11dBi

### Physical

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

Weight: 6.1lbs (2.8kg)

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: Pending FCC, 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.