

# AXS-BS-453-N

3.5 GHz / 5 GHz BAND BASE STATION

Strong protection against interference

Net capacity of 70 Mbps + 70 Mbps

QoS per CPE and service

Synchronism GPS integrated

High coverage range LOS

Full-outdoor IP67

Ultra-compact and energy-efficient

4 carriers of 10MHz



## PRODUCT OVERVIEW

The new AXS-BS-453-N base station has been designed to provide coverage to access networks in the 5 GHz band and the 3.5 GHz band at the same time.

It delivers up to 70 Mbps + 70 Mbps by using four 10 MHz radio channels and provides equivalent to cable networks (HFC) QoS.

It is a very compact full-outdoor and low power consumption base station, with high throughput and processing capacity. The AXS-BS-453-N base station minimizes the spectral use and the investment thanks to the use of very narrow channel bandwidths.

Designed with aerDOCSIS technology, it is completely interoperable with other 802.16 implementations. This helps protect the ISP's investment, guaranteeing the best profitability for wireless access networks in the 5 GHz licensed band.

## APPLICATIONS

- WISP
- Rural broadband access
- VoIP and videoconferencing
- Leased lines for corporate access
- Extension of fiber optic networks
- IPTV
- Smart-metering

## RADIO PARAMETERS

Frequency band	4900-5875MHz + 3300-3900MHz
Channel step	1MHz
Net capacity	70 Mbps + 70 Mbps
Channel bandwidth	10 / 7 / 5 / 3.5 / 1.75 MHz
Independent radio carriers	4 (2 for 3.5 GHz and 2 for 5GHz)
Net spectral efficiency	3,5bps/Hz
BPSK sensitivity	-92 dBm @ 10MHz -99 dBm @ 1.75MHz
64QAM sensitivity	-74 dBm @ 10MHz -82 dBm @ 1.75MHz
Max. transmission power	23 dBm per channel / 29 dBm total
Antenna	4 connectors N per external antenna
Modulation	OFDM 256 subcarriers
Subcarrier modulation	Adaptive BPSK, QPSK, 16QAM y 64QAM (7 levels depending on FEC combination)
FEC	Yes, concatenated Reed-Solomon and convolutional code
DFS	Yes
Spectrum analyser	Yes, intelligence
Downlink/Uplink	From 12% to 95%
Access control protocol	Synchronous TDMA with hardware implementation
Duplexing technique	TDD (Time Domain Duplexing)
Synchronism TDD	GPS integrated

## QUALITY OF SERVICE (QoS)

QoS control	5 QoS levels (BE, nRTPS, eRTPS, RTPS, UGS). Separate queues per service and user
Max. number of services	Unlimited
Service differentiation	Layer 2: MAC source/destination address, EtherType, VLAN tag Layer 3: DSCP ToS, IP source/destination address, subnet, protocol Layer 4: TCP or UDP source/destination port
Max. CPEs per sector	Unlimited

## NETWORKING AND SECURITY

Layer 2 functionality	Bridging (IEEE 802.1)
VLAN	802.1q, 802.1p, soporte q-in-q, unlimited VLANs
Layer 3 functionality	Dynamic/static routing, NAT, DHCP server/client
Encryption	AES128/256
Latency	5ms
X.509 certificates	Yes
Data interface	Gigabit Ethernet
Max. packet size	2048 bytes

## MANAGEMENT

Remote	Web, SSH, XML-RPL, SNMP v1, 2 & 3
Advanced	SMC channel support, double IP data/management
User provisioning	Radius, CPS and xml local file

## PHYSICAL FEATURES

Dimensions	330 x 330 x 110 mm (packaged)
Dimensions	265 x 265 x 70 mm (without packaging)
Weight	4,5 kg
PoE supply	PoE 802.3af Class 4 (60W) 48-57VDC (4 pairs)
Power consumption	22W typ., 35W max (100% traffic)
Temperature range	De -30°C a +55°C (working environment temperature)

## STANDARDS

Protocol	aerDOCSIS compatibility with 802.16-2012
Radio	ETSI EN 302 326-2 ETSI EN 301 893 V2.1.1 ETSI EN 302 502 V2.1.1
Environment	IP67 (protection) ETSI EN 60951-1 (security) UNE EN 60068-1-1/2/11/14/30 (environment) ETSI EN 301 489-1 V1.9.2 (EMC) ETSI EN 301 489-17 V2.2.1 (EMC)