

AIR

AIR-BB NEO 518

Provides robust, high-speed links to far away locations

The AIR-BB NEO 518 Point to Point link performance is strongly related to radio link quality and efficiency of the access protocol that decides when to transmit and what to transmit. While the link quality is much related to physical aspects such as distance between links, allowed output power in the frequency band and level of interference from other systems, the access protocol used on top of the physical layer plays a key role in how efficient the physical resources can be utilized.

AIR's Wireless Broadband products is using a proprietary Time Division Duplex (TDD) protocol, AIR-BB NEO 518, which optimizes the performance of our point to point links.

All AIR-BB NEO 518 products can be managed via Web interface (SNMP) as well as with the RCS Server Based Managements system. The AIR-BB NEO portfolio can also be monitored by the free AIR Cloud Network.

Operating in the 5 GHz unlicensed band at a data rate up to 245 Mbps aggregated throughput, the AIR-BB NEO 518 are designed to reliably transport your data, voice and video communications in virtually any environment – high-interference and longrange line-of-sight paths, over water and open terrain, even in extreme weather conditions.

TDD based software

AIR-BB NEO 518 technology to emulate full duplex links over a half duplex communication link. The radio link operates symmetric or asymmetric and optimizes the link for low latency. The proprietary TDD based protocol greatly reduces the impact of long distances compared with other technologies.

By using TDD based technology we enhance and strengthen the link against interference.

TDD Synchronization

Using the Repeatit SyncMaster-300, radio synchronization with GPS can be done with superb performance. Both together or separate between units at one or several Point to Point and Multipoint sites also possible.

TDD Multipoint support

AIR-BB NEO 518 can be configured to run multipoint with up to 16 clients.

In multipoint mode 16 timeslots are allocated and each client can be assigned 1-8 slots. For example using four clients, the clients can be assigned 8-4-2-2 timeslots getting 50/25/12.5/12.5% of the capacity.

High interference resistance

AIR-BB NEO 518 uses advanced interference resistance techniques to assure excellent operation in harsh conditions in licensed or unlicensed bands.

Combined with OFDM, AIR-BB NEO 518 uses MIMO 2x2 and antenna diversity technology to achieve wireline speeds over radio.

The built in antenna is dual polarised to achieve either higher throughput with dual streams or better link budget with single stream.

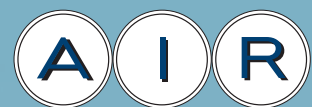
Configurable QoS

AIR-BB NEO 518 uses four transmit queues to prioritize traffic, the classification is based on DiffServ and/ 802.1p. The classification is configurable to give the user full freedom of how the traffic should be prioritized.



PRODUCT HIGHLIGHT

- 245 Mbps aggregated throughput
- Up to 80/20 asymmetrical traffic
- 5.150 –5.845 GHz
- 18 dBi Dual Polarized antenna
- TDD Synchronization
- TDD Multipoint support (up to 16 units)
- Variety of channel widths: 5/10/20/40 MHz
- Build-in RF ESD/Surge protection
- Easy alignment with LED
- Advanced spectrum analyser
- QoS: Four traffic classes prioritise traffic
- Free Network Management



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AIR-BB NEO 518 / 518 Plus

Radio

Frequency Bands	5.150 –5.845 GHz
Channel widths supported	5/10/20/40 MHz
Capacity	AIR-BB NEO 518 Plus: 245 Mbps AIR-BB NEO 518: 105 Mbps
Duplex Technique	TDD
Modulation	OFDM, PSK/QPSK/16QAM/64QAM
Max Tx Power	23 dBm
Max Rx sensitivity	-97 dBm
Error Correction	FEC; k=1/2,2/3,3/4, 5/6
Encryption	128 bit AES & MAC level Authentication
Surge Protection	15kV
Antenna Protection	Internal DC Grounding
DFS	Yes
QoS	Four Access Categories (AC) Voice, Video, Best Effort, and Background Traffic classification according to WMM
Bandwidth control	Yes

Inbuilt Antenna

Gain, typ.	18 dBi
VSWR	≤ 1.8
3 dB Beam-Width, H-Plane, typ.	17°
3 dB Beam-Width, E-Plane, typ.	17°
Polarization	Dual, Vertical and Horizontal
F/B Ratio	Dual Slant if mounted PLUS/MINUS 45°

Ethernet Interface

Type	10/100/1000 BaseT Interface with Auto-negotiation (IEEE 802.3), Manual
Number of Ethernet Ports	1
Framing/Coding	IEEE 802.3u
Traffic Handling	MAC layer bridging, self-learning 802.1q transparent
Data Latency	2-4ms (3ms typical)
Packets/second	> 40 000
VLAN ID for Management	Supported
Power over Ethernet	48V DC, 802.3af, <6W typical
Connector	RJ-45

Management

Link Management	Web interface
Protocol	SNMP
NMS Application	Costfree Cloud Network RCS Management Service
Tools in web interface	Spectrum Analyser Speed Test

Certifications

Radio	FCC Part 15.247 ETSI: EN 301 893 V1.5.1 ETSI EN 302 502 V1.2.1
EMC	FCC part 15 class B EN 55022:2010 Class B EN 55024:2010 ETSI EN 301 489-1 V1.9.2 ETSI EN 301 489-17 V2.1.1
Safety	IEC 60950-1 EN 60950-1
Health	EN 62311:2008

Environment

IP Code	IP67
Temperature	-40° / +55° C
Size	270 x 270 x 75 mm
Weight per unit	2.9 kg

Distance	AIR-BB NEO 518	AIR-BB NEO 518 Plus
< 1 km	105 Mbit	245 Mbit
2 km	105 Mbit	242 Mbit
3 km	93 Mbit	194 Mbit
4 km	62 Mbit	130 Mbit
5 km	62 Mbit	129 Mbit
6 km	62 Mbit	129 Mbit
7 km	41 Mbit	85 Mbit
8 km	41 Mbit	85 Mbit
9 km	31 Mbit	64 Mbit
10 km	30 Mbit	63 Mbit

Throughput UDP, 30dB max ETSI EIRP, 6dB margin

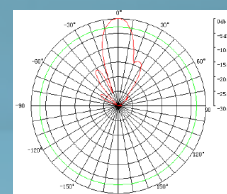
Radiations Patterns

Frequency 5500 MHz

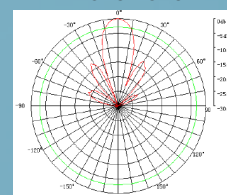
Gain, typ. 18 dBi

Vertical Polarization

E-Plane Pattern

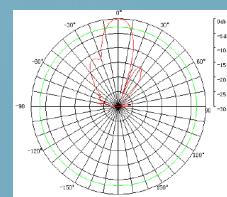


H-Plane Pattern

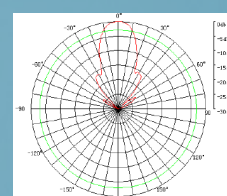


Horizontal Polarization

E-Plane Pattern



H-Plane Pattern



PTP