

Our experience, your advantage

ALFOplus

High Capacity IP Ethernet Full Outdoor

ALFOplus is a Full-Outdoor, full IP Next Generation Microwave Radio. Its zero footprint solution allows for fast rollouts of LTE full IP backhaul networks. Ideal for a fast and flexible evolution towards full IP networks, it offers best in class performance and lowest power consumption for a green but performing network

ALFOplus combines compactness, best in class performance and lowest power consumption in a single efficient and cost effective full-outdoor device. It offers up to 1Gbps transport capacity also liaising over higher modulation schemes of 1024 QAM. ALFOplus is optimized for TCP/IP transport compliant to LTE traffic needs including packet synchronization techniques.



ALFOplus

COMPANY WITH
QUALITY SYSTEM
CERTIFIED BY DNV GL
= ISO 9001:2015 =

MAIN FEATURES

- 4 QAM to 1024 QAM modulation
- Hitless Adaptive Code Modulation
- MultiLayer Header Compression
- 1 Gbits throughput radio
- Best in Class for SystemGain
- FCC/ETSI Channels supported
- Advanced Pure IP engine
- CISCO Microwave Adaptive Bandwidth feature interworking
- Synchronous Ethernet support
- IEEE 1588 v2 support
- Extended buffer for TCP/IP efficiency in LTE networks
- Optical or Electrical port options
- Lowest power consumption
- Integrated antennas up to 1.8m (6ft)
- Network Management System: NMS5
- SDN Microwave Domain Controller: SM-DC

LAYER 2 MAIN FUNCTIONALITIES

- MEF-9 and MEF-14 compliant
- 8 queues with flexible scheduler (Strict WFQ and mixed)
- Flexible QoS definition based on VLAN, IPv4, IPv6, MPLS exp bits
- Per queue WRED congestion avoidance
- Flow Based Ingress Policing (CIR & EIR definition)
- Flow Control IEEE 802.3x
- RMON Statistic management
- VLAN/VLAN STACKING (IEEE 802.1q with QinQ)
- Link Aggregation IEEE 802.3ad
- ETH OAM IEEE 802.1ag/ITU-TY 1731
- Jumbo Frames up to 10 Kbytes

TYPICAL APPLICATIONS

- Any-G Mobile Backhaul for Access and aggregation
- ISP High Capacity LAN to LAN connections
- Last Mile fiber extension for business customers
- Emergency wireless links
- Complementary solution to fiber deploy
- Zero footprint applications



Frequency band	7/8 GHz	11 GHz	13/15 GHz	17 GHz UNLICENCED	18 /23 GHz	24 GHz UNLICENCED	24 GHz FCC/IC UNLICENCED*	26 GHz	32 GHz	38 GHz	42 GHz
Frequency range	7.1-8.5	10.2-11.7	12.7-13.2 14.5-15.2	17.1-17.3	17.7-19.7 22.0-23.6	24-24.2	24-24.2	24.5-26.5	31.8-33.4	37-39.5	40.5-43.5
Modulation schemes	4 / 16 / 32 / 64 / 128 / 256 / 512 / 1024 QAM with Hitless Adaptive Code and Modulation										
Supported configurations	(1+0), 2x(1+0)										
Throughput	1 Gbps										
Traffic interfaces	2 x GE electrical / optical										
Output power (dBm) at point C**											
4 QAM	+28	+28	+28	+22	+23	+20	-3	+23	+20	+19	+17
16 QAM	+26	+25	+25	+20	+21	+18	-3	+21	+18	+17	+15
32 QAM	+25	+24	+24	+18	+19	+16	-3	+19	+16	+15	+13
64 QAM	+25	+24	+24	+18	+19	+16	-3	+19	+16	+15	+13
128 QAM	+25	+24	+24	+18	+19	+16	-3	+19	+16	+15	+13
256 QAM	+25	+24	+24	+18	+19	+16	-3	+19	+16	+15	+13
512 QAM	+25	+24	+24	+18	+19	+16	-3	+19	+16	+15	+13
1024 QAM	+24	+23	+23	+18	+18	+15	-3	+18	+15	+14	+12
Receiver sensitivity (dBm) at BER 10 ⁻⁶ at point C (1+0, 28 MHz BW, RF filter losses included)											
4 QAM	-90.5	-91	-91	-89.5	-90.5	-87	-87	-89	-88	-88.5	-86.5
16 QAM	-83	-84	-84	-82.5	-82.5	-80	-80	-82	-81	-81.5	-79.5
32 QAM	-78.5	-78.5	-79.5	-78	-79	-75.5	-75.5	-77.5	-76.5	-77	-75
64 QAM	-75.5	-76.5	-76.5	-75	-76	-72.5	-72.5	-74.5	-73.5	-74	-72
128 QAM	-72.5	-73.5	-73.5	-72	-73	-69.5	-69.5	-71.5	-70.5	-71	-69
256 QAM	-69.5	-70	-70	-68.5	-69.5	-66	-66	-68	-67	-67.5	-65.5
512 QAM	-66.5	-67.5	-67.5	-66	-67	-63.5	-63.5	-68.5	-64.5	-65	-63
1024 QAM	-63.5	-63.5	-63.5	-62	-63	-59.5	-59.5	-61.5	-60.5	-61	-59
Frequency stability	±5 ppm										
ATPC	20 dB range implemented in 1 dB steps										
RTPC	Up to 20 dB in 1 dB steps, software programmable										
ODU connector	RJ45 or SFP Optical Plug-in										
Management Interfaces	In-band management										
Dimensions (WxHxD)	254 x 254 x 154 (mm) / 10 x 10 x 6 (in)										
Weight	4,25 Kg / 9,4 (lb)										
Power supply	35 ÷ 60 VDC floating										
Power consumption (per terminal)	≤ 35W in 1+0 configuration										
ODU weather proofing class	IP65										
ODU operational temperature (standard range)	-35° C to +55 ° C										
Ethernet characteristics	MAC address switching, ageing and learning VLAN / VLAN stacking (IEE 802.1ad-QinQ) Ethernet QoS (IEEE 802.1p) Flow Control (IEEE 802.3x) RMON Statistics (RFC 2819) LLF (Link Loss Forwarding) LAG (Link Aggregation IEE 802.3ad) ETH OAM (IEEE 802.1ag / ITU-T Y.1731) RSTP (Rapid Spanning Tree Protocol)										
Compliant with	ETSI/FCC Part 101 (Licensed), FCC Part 15/RSS-210 (24 GHz US/Canada)										

* Unlicensed frequency: Output Power values compliant with SRD ERC REC 70-03 using appropriated antenna, enhanced RTPC and Constant Avg Mode. For FCC, output power is compliant to Part 15 using approved antennas. For Canada, output power is compliant to RSS 210 using approved antennas.



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