



ALFOplus

7 - 38 GHz

HIGH CAPACITY IP ETHERNET FULL OUTDOOR *Series*



ALFOplus is a Full Outdoor, Full IP Next Generation Microwave Radio.

It is a zero footprint solution, fully integrable with 3G, 4G and LTE nodes, and ideal for a fast and flexible evolution towards full IP networks with the highest radio capacity and performance.

With its advanced Ethernet features and complete synchronisation management (SyncE and 1588v2), ALFOplus is a state of the art IP radio, providing the foundation for a leading edge network.



MICROWAVE RADIO

ALFOplus

HIGH CAPACITY IP FULL OUTDOOR Series

MAIN FEATURES

- 1 Gbits throughput per radio channel
- 7,14, 28, 56 MHz channel BW support
- 4 QAM to 1024 QAM modulations
- Adaptive Code and Modulation
- POE+ or dedicated power supply port
- 2 GE ports optical or electrical
- In-band management
- Layer 1/2/3/4 Header Compressor
- 1588 v2 support

LAYER 2 MAIN FUNCTIONALITIES

- Carrier Ethernet services (EVP- LINE/LAN/TREE)
- 8 queues with flexible scheduler (Strict, WFQ, mixed)
- Per queue WRED congestion avoidance
- Flow Based Ingress Policer (CIR & EIR definition)
- Flexible QoS definition based on VLAN, IPv4, IPv6, MPLS exp bits
- Extensive VLAN management
- Link aggregation
- Support for ERP
- Jumbo Frames up to 10Kbytes

TYPICAL APPLICATIONS

- Any G-Mobile backhaul for Access and Aggregation
- Emergency wireless links
- Last mile fibre extension for business customers
- Complementary solutions for fiber deploy
- ISP High Capacity LAN to LAN connections
- Zero footprint applications

Supported Configurations	(1+0), (1+1), 2x(1+0)						
Modulation Schemes	4/16/32/64/128/256/512/1024 QAM (with ACM)						
Supported Ethernet Throughput	50 Mbps to 1 Gbps						
Traffic Interfaces	2xGE electrical or optical						
Output Power at Point C' (dBm)	7/8 GHz	13 GHz	15 GHz	17 GHz UNLICENSED *	18 GHz	23 GHz	38GHz
4 QAM strong	+29	+28	+28	+22	+23	+23	+19
4 QAM	+29	+28	+28	+22	+23	+23	+19
16 QAM strong	+26	+25	+25	+20	+21	+21	+17
16 QAM	+26	+25	+25	+20	+21	+21	+17
32 QAM	+25	+24	+24	+18	+19	+19	+15
64 QAM	+25	+24	+24	+18	+19	+19	+15
128 QAM	+25	+24	+24	+18	+19	+19	+15
256 QAM	+25	+24	+24	+18	+19	+19	+15
512 QAM	+25	+24	+24	+18	+19	+19	+15
1024 QAM	+24	+23	+23	+17	+18	+18	+14
Receiver Sensitivity at BER 10 ⁻⁶ at point C (1+0 conf., 28/30 MHz RF Filter losses included)	7/8 GHz	13 GHz	15 GHz	17 GHz UNLICENSED *	18 GHz	23 GHz	38GHz
4 QAM strong	-90,5	-90	-90	-88,5	-89,5	-89,5	-87,5
4 QAM	-87,5	-87	-87	-87,5	-86,5	-86,5	-84,5
16 QAM strong	-83	-82,5	-82,5	-81	-82	-82	-80
16 QAM	-80	-79,5	-79,5	-78	-79	-79	-77
32 QAM	-78,5	-78	-78	-76,5	-77,5	-77,5	-75,5
64 QAM	-75,5	-75	-75	-73,5	-74,5	-74,5	-72,5
128 QAM	-72,5	-72	-72	-70,5	-71,5	-71,5	-69,5
256 QAM	-69,5	-69	-69	-67,5	-68,5	-68,5	-66,5
512 QAM	-66,5	-66	-66	-65,5	-66,5	-66,5	-63,5
1024 QAM	-63,5	-63	-63	-61,5	-62,5	-62,5	-60,5
Frequency Stability	± 5 ppm						
ATPC	20 dB range implemented in 1 dB steps						
RTPC	Up to 20 dB in 1 dB step, software programmable						
Service Channels	VoIP						
ODU Connector	RJ45 or SFP Optical Plug-in						
Management Interfaces	In band management, RJ45						
Mechanical Dimensions ODU (W x H x D)	254 x 254 x 154 (mm) 10 x 10 x 6 (in)						
Power Supply	35 ÷ 60 VDC floating						
Power Consumption (per terminal)	≤ 35W in 1+0 configuration ≤ 70W in 1+1 configuration						
Environmental Performace	IP65						
ODU Weather Proofing Class	-35° C to +55 ° C						
ODU Operational Temperature (standard range)							
Ethernet Characteristics	MAC address switching, ageing and learning VLAN / VLAN STACKING (IEE 802.1ad with QinQ) Ethernet QoS (IEEE 802.1p) Flow Control (IEEE 802.3x) RMON Statistics LLF (Link Loss Forwarding) LAG (Link Aggregation IEEE 802.3ad) ETH OAM (IEEE 802.1ag / ITU-T Y.1731) RSTP (Rapid Spanning Tree Protocol)						
Compliant with	ETSI, FCC						

* Unlicensed Frequency. Output Power values compliant with SRD ERC REC 70-03 using appropriated antenna, enhanced RTPC and Constant Avg Mode



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