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Our experience, your advantage

ALFOplus2

The RF Multicore solution

ALFOplus2 is the next generation 2/4 Gbps full outdoor solution providing best TCO by boosting capacity and availability of the network and simplifies installation with fully integrated branching and zero indoor footprint.

Thanks to its unmatched spectrum efficiency and larger channel selection (1x 14 MHz up to 2x 112 MHz channels), ALFOplus2 offers the highest capacity and channel flexibility, with no restriction in channel allocations either adjacent or co-polar with best in class system gain.

With integrated XPIC capability, and using 34% less power consumption, ALFOPlus2 provides future proof architecture while quadrupling the throughput, achieving better link availability and reducing the antenna size, than two single carrier radios.

Coupled with ALFOplus80HDX, operators can deploy a full outdoor multicarrier aggregation over single antenna solution boosting capacity and distances.

ALFOplus1

ALFOplus2

UNIVERSAL PRODUCT ARCHITECTURE

Microwave radio products evolved in terms of functionalities and physical mechanical arrangements to cover in an effective and efficient way all the different applications.

ALFOplus2 as part of the SIAE MICROELETTRONICA Unified Product Architecture run at its core the SM-OS operating system based over three major components:

Network Management Plane

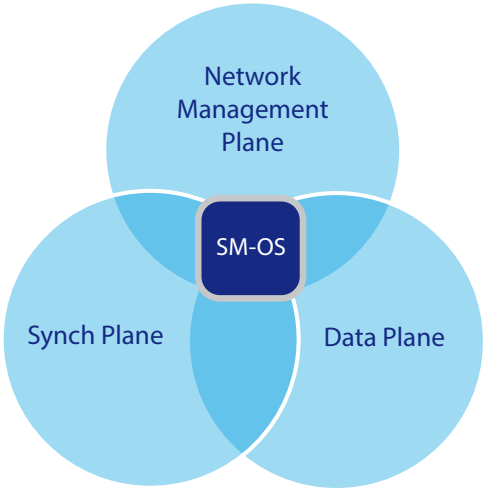
- NETCONF/Yang in SDN deployment
- SNMP v1/v2c/v3, HTTPs, SSH, SFTP
- RADIUS for centralized user management

Data Plane

- MEF 2.0 – Carrier Ethernet Services
- IP/MPLS – L2/L3 VPN Services
- QoS/HQoS – queue management/policing and shaping

Synch Plane

- Synchronous Ethernet
- ITU-T G.8275.1 Profiles (T-BC)
- 1 PPS in/out port



MAIN FEATURES

- SM-OS based platform
- 4 to 4096 QAM modulation
- 6 GHz to 42 GHz licensed bands
- Up to 2x 112 MHz channels
- Multi Layer Header Compression
- L1 Radio LAG over multiple ODU
- Extended Ethernet connectivity: 10 / 2.5 / GE interfaces
- Multi Carrier Aggregation
- In-house RF Multicore technology
- Integrated XPIC circuitry
- AES128/256 Encryption
- PoE and dedicated power feeder connectors
- L1 link aggregation
- Network Management System: NMS5
- SDN Microwave Domain Controller: SM-DC

ALFOplus2 Supported Configurations:

- Single Unit - Dual Core: 1+0 / 1+1 / 2+0 / XPIC
- Two Units - Quad Core: 2+2 / 4+0 / 1+1 XPIC

LAYER 2 MAIN FUNCTIONALITIES

- MEF 2.0 carrier ethernet services
- 8 queues with flexible scheduler (Strict Priority, WRR and mixed)
- 4 level hierarchical scheduler (H-QoS)
- Flexible QoS definition based on VLAN, IPv4, IPv6, MPLS exp bits
- Per queue WRED congestion avoidance
- Flow Based Ingress Policing (CIR & EIR definition)
- Egress shaping
- Ethernet Ring Protection G.8032
- RMON statistics per service VLAN stacking (IEEE 802.1ad QinQ)
- Link Aggregation IEEE 802.3ad
- Ethernet OAM 802.3ah/ 802.1ag/ Y.1731
- Jumbo Frames up to 12 Kbytes

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Frequeny band	6L/6U GHz	7/8 GHz	11 GHz	13/15 GHz	18 /23 GHz	26 GHz	28 GHz	32 GHz	38 GHz	42 GHz
Frequency range	5.9-7.1	7.11-8.5	10.2-11.7	12.7-15.3	17.7-23.6	24.5-26.5	27.5-29.5	32.8-33.4	37-40	40.5-43.5
Modulation schemes	4 / 16 / 32 / 64 / 128 / 256 / 512 / 1024 / 2048 / 4096 QAM									
Channel spacing	14 MHz / 20 MHz / 28 MHz / 30 MHz / 40 MHz / 50 MHz/ 56 MHz / 60 MHz / 80 MHz / 112 MHz									
Throughput	Up to 2 Gbps									
Output power (dBm) at point C'*										
4 QAM	+32	+32	+30	+28	+23	+22	+21	+20	+19	+17
16 QAM	+29	+29	+27	+25	+21	+20	+19	+18	+17	+15
32 QAM	+29	+29	+27	+25	+21	+20	+19	+18	+17	+15
64 QAM	+28	+28	+26	+24	+19	+18	+17	+16	+15	+13
128 QAM	+28	+28	+26	+24	+19	+18	+17	+16	+15	+13
256 QAM	+27	+27	+25	+23	+18	+17	+16	+15	+14	+12
512 QAM	+27	+27	+25	+23	+18	+17	+16	+15	+14	+12
1024 QAM	+26	+26	+24	+22	+17	+16	+15	+14	+13	+11
2048 QAM	+26	+26	+24	+22	+17	+16	+15	+14	+13	+11
4096 QAM	+26	+26	+24	+22	+17	+16	+15	+14	+13	+11
Receiver sensitivity (dBm) at BER 10-6 at point C (1+0, 28 MHz BW, RF filter losses included)										
4 QAM	-88.5	-88.5	-88	-88	-87.5	-87	-85.5	-85	-85.5	-84.5
16 QAM	-82.5	-82.5	-82	-82	-81.5	-81	-79.5	-79	-79.5	-78.5
32 QAM	-77.5	-77.5	-77	-77	-76.5	-76	-74.5	-74	-74.5	-73.5
64 QAM	-74.5	-74.5	-74	-74	-73.5	-73	-71.5	-71	-71.5	-70.5
128 QAM	-71	-71	-70.5	-70.5	-70	-69.5	-68	-67.5	-68	-67
256 QAM	-68	-68	-67.5	-67.5	-67	-66.5	-65	-64.5	-65	-64
512 QAM	-67	-67	-66.5	-66.5	-66	-65.5	-64	-63.5	-64	-63
1024 QAM	-64	-64	-63.5	-63.5	-63	-62.5	-61	-60.5	-61	-60
2048 QAM	-59.5	-59.5	-59	-59	-58	-58	-56.5	-56	-56.5	-55.5
4096 QAM	-56	-59.5	-55.5	-55.5	-55	-54.5	-53	-52.5	-53	-52
Frequency stability	±5 ppm									
Frequency agility	250 KHz (software programmable)									
RTPC	Up to 30 in 1 dB steps									
ATPC	Up to 30 in 1 dB steps									
Dimensions (WxHxD)										
ALFOplus1	254 x 320 x 176 (mm) / 10 x 12.5 x 6.9 (in)									
ALFOplus2	252 x 363x 176 (mm)* / 9.9 x 14.3 x 6.9 (in)*									
Weight										
ALFOplus1	7,2 Kg / 15.8 lbs									
ALFOplus2 < 18 GHz	11,5 Kg / 25.3 lbs									
ALFOplus2 ≥ 18 GHz	8 Kg / 17.6 lbs									
Power supply	-48 Vdc (-15%, +20%)									
Power consumption	≤ 54 W (with ATPC)									
Environmental performance	ODU Weather Proofing Class: IP65					Operational Temperature Range: -33°C ÷ +55°C Temperature range degraded performances: -40°C ÷ +60°C				
Compliant with	ETSI , FCC									

* OMT/hybrid branching included

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