



siae microelettronica

ALFO80 SERIES
Solution for E-band

ALFO80_002_E_GM - September 2011
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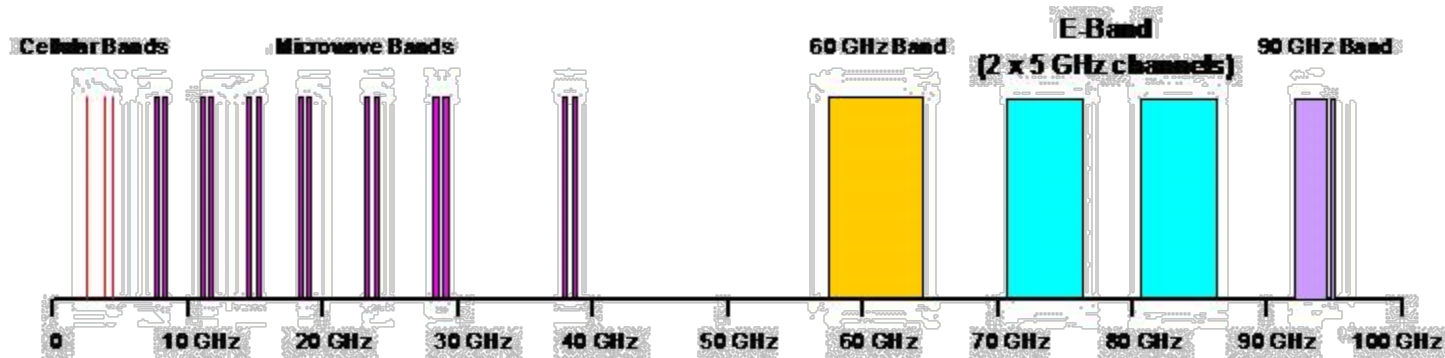


ALFO 80

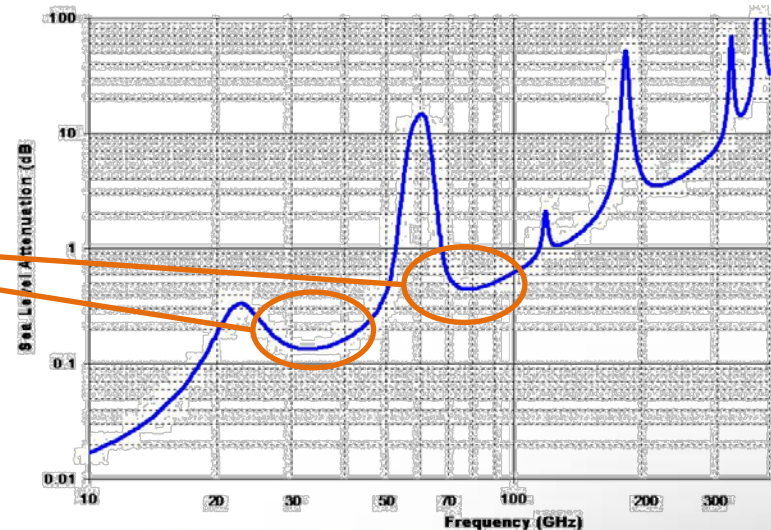
E-Band full outdoor Microwave Radio

E-BAND

- The “E-Band” offers 10GHz enabling Ultra High Capacity Millimetric wave radio for urban application, exceeding 2Gbps throughput



- Channel in 250 MHz steps.
- Propagation similar to 40 GHz band.



SIAE MICROELETTRONICA MILLIMETRIC WAVE SOLUTIONS

100% In-House design is our commitment to this Product Segment.

- In house RF Design
- In house Multigigabit wideband modem



SIAE MICROELETTRONICA E-BAND SOLUTION – I

1Gbps wire-speed “*Pure Packet Pipe*” applications:

- ▶ Fiber-like behavior
- ▶ 1GHz channel support @ 4 QAM to maximize radio link availability
- ▶ Layer2 transparent, does not require QoS and VLAN tagging setting
- ▶ Does not interact with E2E Network Qos Policy
- ▶ Synchronous Ethernet support
- ▶ Power Over Ethernet or separated power feeding
- ▶ Reserved 1Gbps DCN Port



SIAE MICROELETTRONICA E-BAND SOLUTION – II

High-Density applications with metro switch:

- ▶ 2 x GbE Ports
- ▶ Integrated Layer2 Carrier Ethernet switch
- ▶ 250, 500,750, 1000 MHz channel support
- ▶ Adaptive Coding & Modulation, from 4 up to 64QAM
- ▶ SIAE's PacketZip technology to increase throughput up to 200% (Multi-stage, L2/3/4 packet compression)
- ▶ Power Over Ethernet or separated power feeding
- ▶ 1.0 Gbps Ethernet throughput over a 250 MHz channel
2.0 Gbps Ethernet throughput over a 500 MHz channel



ETHERNET FEATURES

- 8 physical queues switch with flexible scheduler
- Jumbo frames up to 10.5 Kbyte
- MAC table enhanced, up to 8192 addresses
- MAC learning/aging (On/Off)
- 802.3x Flow Control
- IEEE 802.1w Rapid Spanning Tree
- M-STP Multiple Spanning Tree
- Ethernet OAM (802.1ag / Y.1731)
- G.8264 (SyncE)
- Link loss forwarding



ETHERNET FEATURES

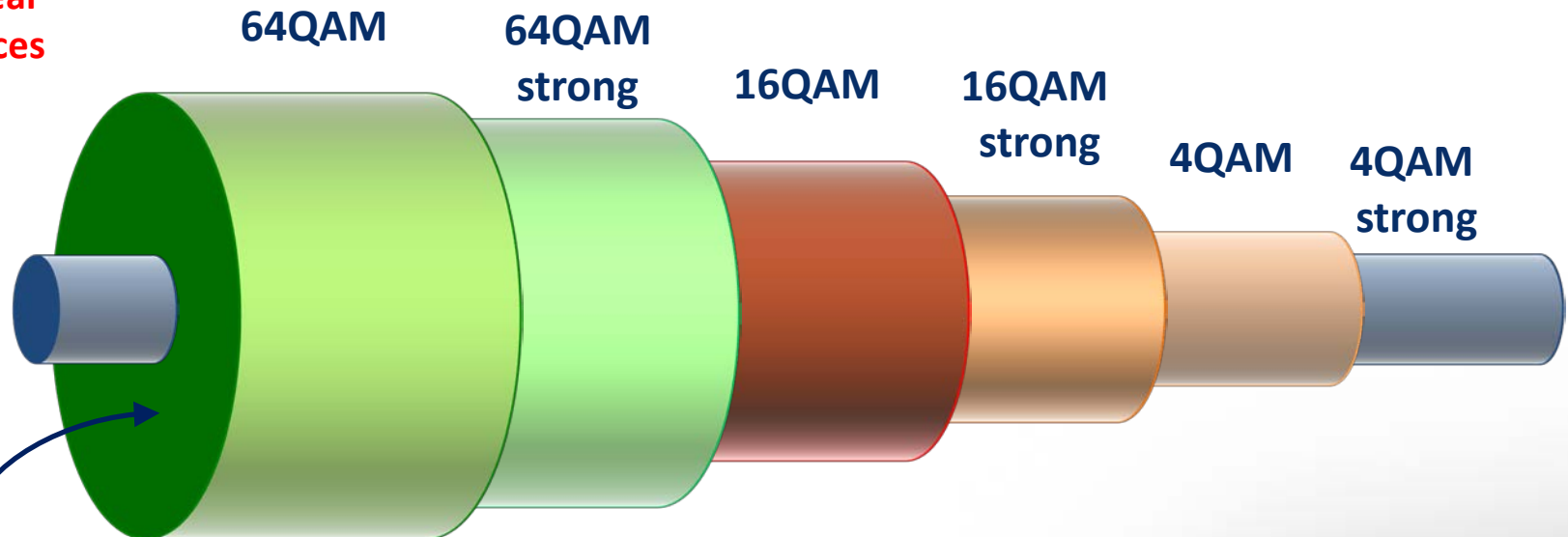
- RMON monitoring for VLAN
- VLAN Management
- G.8264 (SSM, quality of the synchronization)
- QoS based on:
 - ▶ IPv4
 - ▶ IP-v6
 - ▶ VLAN .1p bits
 - ▶ MPLS Exp-bits
- Color-aware WRED classification
- Flexible Ingress policy (CIR/EIR/VLAN based)



ALFO80 – ADAPTIVE CODE AND MODULATION

- ACM Adaptive Code Modulation with 6 profiles
- Hitless modulation and code selection from 4 to 64QAM
- MSE based hitless modulation switch (Quality of Signal based)
- Fast ACM switch-over (up to 400changes/sec & 40dB/sec guaranteed)
- “Strong” modulations: maximize link availability at higher capacity

Voice & real
time services



Non-real
time services

ALFO80 – THROUGHPUT

ALFO80 – Ethernet Throughput					
		250MHz	500MHz	750MHz	1000MHz
Fixed Modulation	4QAM	-	-	-	1000Mbps
	4QAM	250 Mbps	475 Mbps	720 Mbps	900 Mbps
ACM Mode	16QAM	675 Mbps	1275 Mbps	1940 Mbps	2500 Mbps
	64QAM	1025 Mbps	1910 Mbps	n.a.	n.a.

ALFO80 – RADIO PERFORMANCES

ALFO 80 – Radio Performances (*Preliminary Typical Values*)

Channel BW (Mhz)	Modulation	Ptx (dBm)	Prx@10-6 (dBm)
1000	4 QAM	18	-63
500	4 QAM	18	-69
500	16 QAM	15	-58
500	64 QAM	13	-52
250	4 QAM	18	-72
250	16 QAM	15	-61
250	64 QAM	13	-55

ALFO80 – NETWORK MANAGEMENT

- **Equipment provides:**
 - ▶ HTTP/HTTPS Web Browser Interface, SNMP
 - ▶ comprehensive MIB
 - ▶ Local storage of events
 - ▶ Remote Monitoring (RMON) statistics
 - ▶ Complete Ethernet MIB statistics
 - ▶ RADIUS authentication or local authentication
- **Ethernet OAM:**
 - ▶ 802.3ah (Clause 57)
 - ▶ 802.1ag - CFM/Service OAM
 - ▶ Y.1731 – Performance Monitoring
- **Management Platforms**
 - ▶ Web LCT
 - ▶ NMS5-UX
 - ▶ NMS5-LX

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