

AGS20 series

Product Leaflet



siae microelettronica

Universal Aggregation Platform

Evolutions of the RAN are the main driver for changes in microwave products, like LTE requiring increased throughput and densification of the network, Small Cell and Cloud-RAN.

These changes lead to new technologies in the microwave industry to improve capacity by using complex modulation formats, dual carrier solutions, using new spectrum (60 and 80 GHz) and to improve network density at street level with NLOS sub-6 GHz.

AGS20 is the unique universal aggregation platform with IP/MPLS capability to address all these new application segments in a coherent solution.



Bologna, Italy

MICROWAVE RADIO

AGS20 is Universal Microwave Aggregation Platform addressing the need for carrier-class multi-technology traffic aggregation.

Based on high performance Carrier Ethernet 2.0 engine, MPLS capable, the platform enables convergence of the major microwave application segments:

- Next Generation indoor Unit for split Mount Radio
- Aggregation for All Outdoor Radio including E-Band
- Gateway handling Small Cell Radio Cluster

NEXT GENERATION UNIT FOR SPLIT MOUNT RADIO

AGS20 set a new industry benchmark in split mount microwave by featuring the following capabilities:

- Carrier Ethernet 2.0 data plane
- Modulation up to 4096 QAM
- Compatibility with existing ASN ODUs (common to ALS series) and support of legacy TDM traffic (native or through PWE3)
- Radio link aggregation up to 4 Gbps in a 1RU indoor unit
- Enhanced QoS feature set (ex. four level hierarchical scheduling)
- Extensive set of ethernet interfaces including 10 Gbps ports
- Time and phase synchronization according to ITU-T G.8275.1 (Telecom-Boundary Clock)
- IP/MPLS networking



ALL OUTDOOR RADIO AGGREGATOR

Radio Access migration towards full packet technology is boosting demand for All Outdoor microwave equipments.

AGS20 enables this move by providing:

- Connectivity towards any full outdoor including ALFOplus, ALFOplus2 and ALFOplus80 series
- 2.5 and 10 Gbps optical interface
- Single Network Element concept towards NMS
- Power over Ethernet and integrated lighting protection to direct feed all outdoor equipments
- Indoor and Outdoor mechanical arrangement



GATEWAY HANDLING SMALL CELL RADIO CLUSTER

Small cell layer is expected to increase number of transport connections of x10 factor compared to Macro-cell backhaul layer. Such network evolution demands for data traffic aggregation capability and some management intelligence in the network nodes to avoid flood of management traffic and prevent overwhelming complexity towards central NMS.

AGS20 (EasyCell Gateway) acts as small-cell cluster aggregator and manager providing the following features:

- Connectivity towards EasyCell small form factor radios
- Power over Ethernet and integrated lighting protection
- Gateway functionality between small cell backhauling radios and NMS: configuration, monitoring and management at cluster level

Universal Product Architecture

The increased number of application segments demands for a spread of microwave technologies in order to address each of the segments in an effective and efficient way. This scenario brings to a higher complexity in microwave portfolio challenging for the consistency of the overall network solution and streamlined roadmap.

SIAE MICROELETTRONICA answer is based on the adoption of a Unified Product Architecture, a common Ethernet hardware and software platform through all new generation products based on two main building blocks:

- Ethernet Core unit based on powerful switching gear featuring 46 Gbps full duplex capacity, high performance dual-core CPU and embedded IEEE1588v2 processor for frequency and phase synchronization
- SM-OS software based on carrier-grade field proven highly interoperable protocol stack to provision standard MEF and MPLS services and is SDN ready



Ethernet Core Unit



Operating System

AGS20s

New Generation split-mount Microwave

AGS20 can be configured as an Indoor Unit for split mount radio; named AGS20s. AGS20s brings superior packet capabilities, certified to comply with LTE transport requirements. It supports TDM traffic, both native and pseudowire, to allow easy network evolution from pure TDM to pure IP.

A complete range of interfaces (Radio, 10/2.5/1 Gigabit/Fast Ethernet, E1, STM-1) and a high degree of versatility allow very easy network planning and management.

Flexible Configuration

The IDU can host a variety of interfaces (a mix of GE and Radio IF interfaces), for maximum flexibility when interconnecting heterogeneous technologies. Up to ten interfaces can be equipped in single 1RU equipment allowing reaching up to ten different directions. Higher level of connectivity is provided by supporting IDU stackability for nodal configuration, addressing demand for higher number of radio directions, GE and TDM interfaces.

MAIN FEATURES

- 4 to 4096 QAM modulations
- Hitless ACM adaptive code and modulation
- Multi Layer Header Compression
- L1 Radio LAG up to 4 ODU's and XPIC configuration in a 1RU IDU
- Convergence of all outdoor and split-mount microwave
- Extended Ethernet connectivity: 2x10GE / 8xGE interfaces
- Multi-band L1 aggregation
- Mixed TDM/Ethernet interfaces for dual native transport
- PWE3 TDM services defined by software
- Synchronous Ethernet and IEEE 1588 v2 support
- AES128/256 Encryption
- SM-OS based platform
- CISCO Microwave Adaptive Bandwidth feature interworking
- POE support
- Indoor and Full outdoor mechanical arrangement
- Extended buffer for maximum TCP/IP efficiency in LTE networks
- Integrated antennas up to 6ft. in dia.
- Single Universal ODU for any capacity and modulation
- Unified Network Management System – NMS5

LAYER 2 MAIN FUNCTIONALITIES

- MEF 2.0 certified
- 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

LAYER 3 MAIN FUNCTIONALITIES

- LDP (Label Distribution Protocol) / TLDP
- RSVP/RSVP-TE
- MPLS L2VPN / VPLS
- MPLS L3VPN
- MPLS TE using RSVP-TE
- OSPFv2 and OSPF with TE extension
- BGPv4, MP-BGP
- IS-IS
- eBGP
- BDF bidirectional forwarding detection for PW VCCV
- FRR Fast Re-route
- LSP RSVP-TE protection 1:1
- MPLS-OAM (with MPLS-TP)

TYPICAL APPLICATIONS

- 2G/3G/4G Cellular Network backhauling infrastructure
- Leased Lines replacement
- Utility Networks
- (Railways, Oil&Gas)
- Private Data Networks (WANs, LANs, etc)
- WiMAX Backhauling
- Fiber Optics extension, termination and backup
- Small Cell backhauling
- Spur Links for Backbones/Rings
- High capacity Broadband Access Networks



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