

OctaveRG1600

Network Processor-Based 16-Port NGcN Switch

OctaveRG1600 Specifications

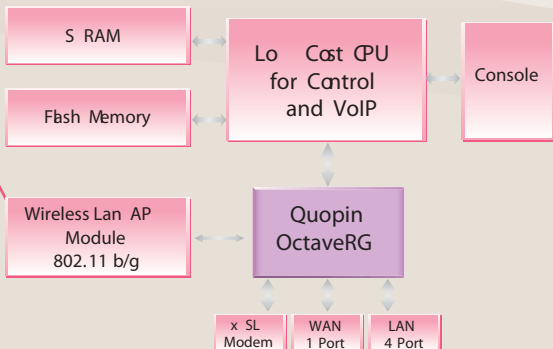
- 16 half and full-duplex 10/100 Mbps ports
- Wire-speed Layer 2/3 switching
- Wire-speed Layer 4 policy based switching
- 120-byte packet header lookup > all field remarkable
- (60-byte lookup for ORG2G600)
- Address&policy lookup table embedded: up to 4K entries
- Packet buffer embedded
- 4K VLAN support
- IEEE 802.1Q support based on port, MAC, tag, subnet protocol
- Stacked VLAN (Q-in-Q)
- IGMP Snooping support
- Broadcast storm filtering
- Link Aggregation function -IEEE 802.3ad
- Management support: SNMP, RMON, SMON
- Flow control (IEEE 802.3x pause function)
- Loop resolution -STP (Spanning Tree Protocol), Rapid STP (802.1W), Per VLAN STP
- IPv6 switch ready due to 120-bytes header lookup

L2/3/4 High Performance, NAT, NAPT

- Wire-speed Layer 2/3 switching on all ports
- Wire-speed NAT/NAPT
- Wire-speed session detection and access control

Filtering

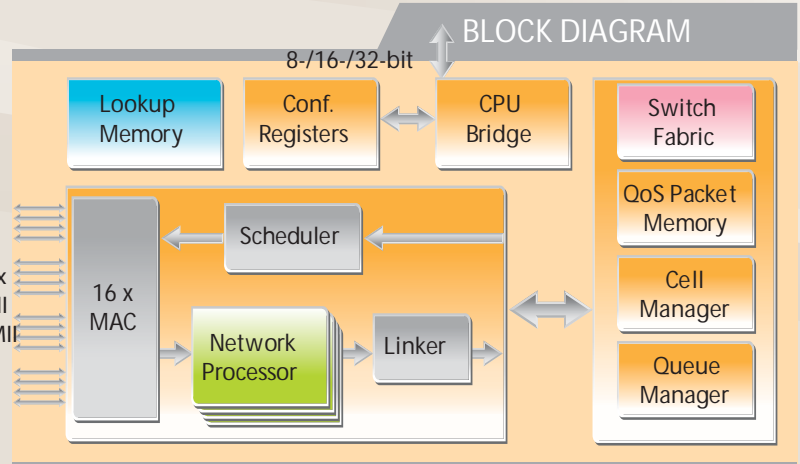
- MAC filtering, VLAN filtering, IP filtering
- TCP/UDP Port filtering, DHCP snoop/ARP snoop filtering
- NetBIOS, NetBEUI filtering, NBT (NetBIOS over TCP) filtering
- IPX socket number filtering
- Filtering rules can be added if necessary



xDSL+ NP Switch + Access Point + VoIP

OoS All Features Covered

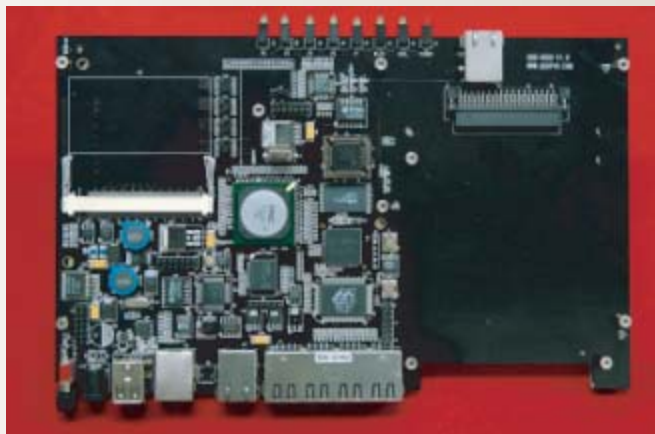
- ACL (access control list)
 - L1: Physical Port
 - L2: Destination MAC address, Source MAC address, Ethertype COS, VLAN ID
 - L3: Source IP address, Destination IP address, TOS, Protocol ID
 - L4: Source port number, Destination port number
- NetBIOS/NetBEUI, value/mask, range, unicast MAC, unknown MAC, multicast MAC, broadcast MAC, unicast IP packet, multicast IP packet
- ACL Output
 - Remarking, VLAN ID insert, filtering, port redirection, port mirroring, CPU redirection, CPU mirroring
- Prioritization
 - L2 CoS, L3 IPv4 TOS, L3 IPv4 DSCP, L3 IPv4 IP-precedence packet type (unicast/multicast), IPv6 TC
- Policing
 - Granularity, token bucket, priority based, multi-stage policing, operation position, port based policing, flow based policing
- Shaping
 - Buffering max. size, port based shaping, class based shaping
- Scheduling
 - SPQ, WFQ, WRR, DWRR
- Rate control support



ORG1600

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RGW Reference Board

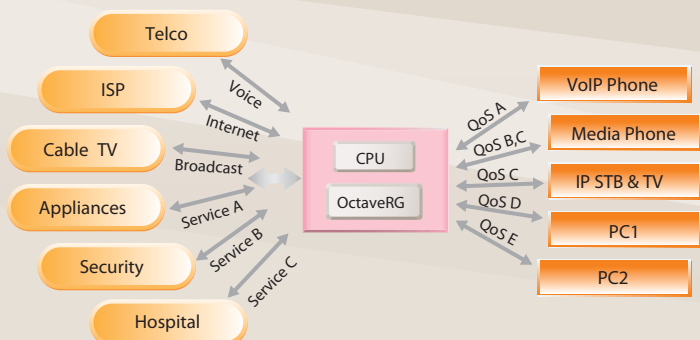


Switch + Access Point + xDSL

Applications

- RGW (residential gateway), or IAD (Internet access device)
- AP (access point) with perfect NAT/NAPT and QoS
- Switch/router for SME: SOHO switch/router, IP sharer
- Metro Ethernet switch: MPLS LES (Label Edge Switch)
- FTTH EPON switch: ONU/ONT
- IPv6 NGcN switch

Home/SOHO/SME Gateway Switch for IP Convergence Network



QoS Enhancement Features

- Hardwire 128 classification/ACL rules for 12-tuple
 1. physical port
 2. des. MAC
 3. src. MAC
 4. COS
 5. VLAN ID
 6. Ethernet type
 7. TOS
 8. protocol ID
 9. src. IP
 10. des. IP
 11. src. Port
 12. des. Port
- (128 x n) classification/ACL rules defined by Packet Processor after hardwire classification
- Minute per-flow bandwidth control: Flow-level bandwidth metering by a Packet Processor Flows are defined for any combination of 12-tuple
- VOQs(virtual output queues): Each flow's service policy is determined respectively in reference to output queue status.
- Priority remarking based on:
 - User priority bits of VLAN tag
 - Ether Type field value
 - TOS field value of IPv4 header
 - Flow label field value of IPv6 header
 Prioritized packets assigned to 4 priority queues.
- Mixed scheduler of strict priority queuing and deficit weighted round robin (DWRR) with 4-level priority

Interfaces

- 16 x SMII/S3MII or 4MII + 12 x SMII/S3MII
- 8-/16-/32-bit local bus for CPU interface

Device Specifications

- Package 289-FGBA
- Fabrication CMOS 0.18 μ
- Power Supply 1.8V Core, 3.3V I/O
- Power Dissipation 1.6 W
- System Clock 62.5 MHz