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Data Sheet

General Availability

ETS-1-1G

Ethernet Access Switches

- L2+ switches
- Stacking support
- Multicast support (IGMP Snooping, MVR)
- Advanced security (multilayer ACLs, IP Source Guard, and Dynamic ARP Inspection)

MARKET SEGMENTS AND APPLICATIONS

New generation access switches provide end users connectivity to large-scale networks, small and medium business networks, and service provider networks, using Gigabit Ethernet interfaces.

The switches support VLANs, multicast groups, and advanced security.

INTERFACE

Head-of-line blocking (HOL) protection

Back pressure

Auto MDI/MDIX

Jumbo frames

Flow control (IEEE 802.3X)

Port mirroring

MAC TABLE

Independent learning mode per VLAN

MAC Multicast Support

Configurable aging time of MAC addresses

Static MAC Entries

MAC Flapping logging

VLAN

Voice VLAN

IEEE 802.1Q

Q-in-Q

Selective Q-in-Q

GVRP

LAYER 2 MULTICAST

Multicast profiles

Static Multicast groups

IGMP Snooping v1,2,3

Port/host-based IGMP Snooping Fast Leave

IGMP proxy-report (for PoE options)

IGMP authorization via RADIUS

MLD Snooping v1,2

IGMP querier

MVR

LAYER 2

STP (Spanning Tree Protocol, IEEE 802.1d)

RSTP (Rapid Spanning Tree protocol, IEEE 802.1w)

MSTP (Multiple Spanning Tree, IEEE802.1s)

STP Multiprocess

PVSTP+

Spanning Tree Fast Link option

STP Root Guard

STP Loop Guard

BPDU Filtering

STP BPDU Guard

VLAN-based Loopback Detection (LBD)

ERPS (G.8032v2)

Private VLAN

Layer 2 Protocol Tunneling

LAYER 3

Static IP routes

Dynamic routing protocols RIPv2, OSPFv2, OSPFv3, BGP

Address Resolution Protocol (ARP)

VRRP

PIM SM, PIM DM, IGMP Proxy

RAD

Your Network's Edge®

ETS-1-1G

Ethernet Access Switches

ECMP Load Balancing

IP Unnumbered

LINK AGGREGATION

Static LAG

Dynamic LAG (LACP)

LAG Balancing Algorithm

IPV6

IPv6 Host

Dual-stack

SERVICE

Virtual Cable Testing (VCT)

Optical transceiver diagnostics

Green Ethernet

SECURITY

DHCP Snooping

DHCP Option 82

IP Source Guard

Dynamic ARP Inspection

sFlow

MAC-based authentication, Port Security, Static MAC entries

Port-based authentication IEEE 802.1x

DoS attack prevention

Traffic segmentation

Protection against non-authorized DHCP servers

DHCP clients filtering

BPDU attacks prevention

NetBIOS/NetBEUI filtering

PPPoE Intermediate Agent

ACL (ACCESS CONTROL LISTS)

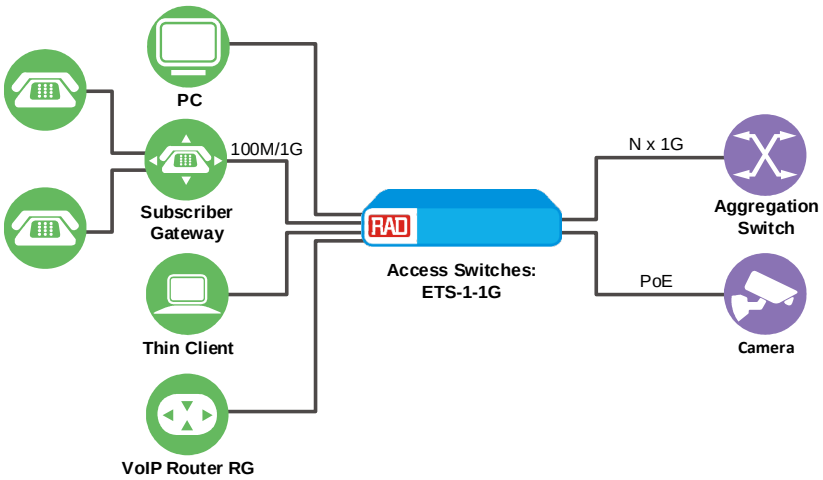
L2-L3-L4 ACL

Time-Based ACL

IPv6 ACL

ACL based on:

- Physical port number
- IEEE 802.1p
- VLAN ID
- EtherType
- DSCP
- Protocol type
- TCP/UDP port number
- User Defined Bytes



ETS-1-1G Ethernet Access Switches Use Case

ETS-1-1G

Ethernet Access Switches

QUALITY OF SERVICE (QOS) AND RATE LIMITING

QoS statistics

Shaping, policing

IEEE 802.1p Class of Service (CoS)

Storm Control

Bandwidth management

Scheduling algorithms: Strict Priority/Weighted Round Robin (WRR)

Three marking colors

ACL-based traffic classification

Setting the IEEE 802.1p priority for management VLAN

DSCP to CoS/CoS to DSCP remarking

ACL-based VLAN assignment

802.1p, DSCP mark assignment for IGMP

Technical Features – ETS-1-1G Product Family

Specification	ETS-1-1G/2S/10U/AC	ETS-1-1G/2S/2U/8P/AC	ETS-1-1G/2S/2U/8P/DC
Packet Processor		Marvell 98DX3233	
	Interfaces		
10/100/1000BASE-T (RJ-45) PoE/PoE+	-		8
10/100/1000BASE-T (RJ-45)	10		2
1000BASE-X (SFP)	2		2
Console port		RS-232/RJ45	
	Performance		
Bandwidth		24 Gbps	
Throughput for 64 bytes		17.7 MPPS	
Buffer Memory		12Mb	
RAM (DDR3)		512 MB	
ROM (RAW NAND)		512 MB	
MAC table		16K	
Quality of Service (QoS)		8 egress queues per port	
TCAM		For routing: 1024 For traffic processing: 1024 x 24B	
ARP table*		1K	
Link Aggregation Groups (LAG)		16, up to 8 ports per LAG	
Maximum size of ECMP groups		8	
L2 Multicast groups (IGMP Snooping)		2K	
VLAN table		4K	
Jumbo frame size		10240 bytes	
Stacking		8 devices	

**For each host in the ARP table, an entry is created in the routing table*

Power, Physical, and Environmental Specifications – ETS-1-1G Product Family

Specification	ETS-1-1G/2S/10U/AC	ETS-1-1G/2S/2U/8P/AC	ETS-1-1G/2S/2U/8P/DC
Maximum power consumption (including PoE)	20W	270W	
PoE budget	-	240W	
Power supply	110 VAC – 264 VAC, 50 Hz	176 VAC – 264 VAC, 50 Hz	36 VDC – 72 VDC
Operating temperature	-20 to 55°C (-4 to 113°F)	-20 to 55°C (-4 to 122°F)	-20 to 55°C (-4 to 113°F)
Storage temperature		-40 to 70°C (-40 to 158°F)	
Operating humidity		80%	
Cooling		Passive cooling	
Dimensions (W x D x H)	310 x 158 x 44 mm (12.2 x 6.2 x 1.7 in)	430 x 158 x 44 (17 x 6.2 x 1.7 in)	
Weight	1.45 kg (3.2 lb)	2.55 kg (5.6 lb)	2.35 kg (5.2 lb)

ETS-1-1G

Ethernet Access Switches

Data Sheet

OAM/CFM

IEEE 802.3ah Ethernet Link OAM

Dying Gasp

IEEE 802.3ah Unidirectional Link Detection (UDLD)

MANAGEMENT

Download and upload of configuration file via TFTP/SFTP

Redirecting output of CLI commands to an arbitrary file on ROM

SNMPv3

Command Line Interface (CLI)

Web interface

Syslog

SNTP (Simple Network Time Protocol)

Traceroute

LLDP (802.1ab) + LLDP MED

Access control – privilege levels

Management interface blocking

Local authentication

IP addresses filtering for SNMP

RADIUS, TACACS+ clients

SSH server

SSL

Macro commands

CLI commands logging

System log

DHCP autoprovision

DHCP Relay (IPv4 support)

DHCP Option 12

DHCP Relay Option 82

PPPoE Circuit-ID tag

Flash File System

Debugging commands

Rate limit of traffic to CPU

Password encryption

Password recovery

Ping (IPv4/IPv6 support)

DNS server

DNS client

MONITORING

Statistics on interfaces

RMON/SMON

CPU utilization monitoring per task and per queue

RAM utilization monitoring

Temperature monitoring

TCAM utilization monitoring

Ordering

ETS-1-1G/2S/10U/AC
ETS-1 Ethernet switch, 10 x 10/100/1000BASE-T ports, 2 x 1000BASE-X ports, L2+, 220V AC

ETS-1-1G/2S/2U/8P/AC
ETS-1 Ethernet switch, 8 x 10/100/1000BASE-T (PoE/PoE+) ports, 2 x 1000BASE-X ports, 2 x 10/100/1000BASE-T ports, L2+, 220V AC

ETS-1-1G/2S/2U/8P/DC
ETS-1 Ethernet switch, 8 x 10/100/1000BASE-T (PoE/PoE+) ports, 2 x 1000BASE-X ports, 2 ports of 10/100/1000BASE-T, L2+, 48V DC

Pulse Supply
909 Ridgebrook Road.,Sparks,Maryland
21152,USA TEL : +1-410-583-1701
FAX : +1-410-583-1704
E-mail: sales@pulsesupply.com https://
www.pulsesupply.com/rad

www.pulsesupply.com/rad

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