DATACOM

DM2500

ACCESS ROUTERS

DATASHEET

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DM2500

ACCESS ROUTERS

HIGH PERFORMANCE IN A COMPACT SOLUTION FOR ENTERPRISE INTERNET AND VPN SERVICES

DM2500 Routers are the ideal solution for Service Providers delivering Enterprise Internet Access or VPN Services at customer premises.

Implementing a comprehensive feature set including advanced routing protocols like RIP, OSPF and BGP, the products allow the configuration of advanced Quality of Service (QoS) policies, multiple Access Control List (ACL) entries and the establishment of private encrypted tunnels through public Internet infrastructure.

DM2500 product family is composed by four models ranging from 4 to 8 Gigabit Ethernet Ports and it is designed to make use of the hardware's advanced packet acceleration engine to ensure high-performance packet processing. Two of these models feature LTE interface.

Rollback and commit operations, complete AAA with TACACS+, RADIUS, Remote Syslog, NTP, PPPoE and DHCP clients are available to ease the provisioning, configuration, management and remote troubleshooting of the devices.

It is also provided support to proactive performance monitoring of IP services including loss, latency and jitter measurements through TWAMP protocol. Fast convergence times of dynamic routing protocols and static routes are possible using BFD.

The products offer a robust Command Line Interface (CLI) accessible through SSHv2, Telnet or locally through RS-232 console port and are remotely monitored by DmView or third party management systems through SNMP.

The DM2500 products are 1U high compact devices in a robust metallic enclosure and count with a built-in universal AC/DC power supply with automatic selection and optional redundancy available using an external power supply adapter. Up to two devices can be installed side-by-side in a 19-inch rack when using MA-01 tray.

- 1U high compact design
- Fanless version
- 4 to 6 copper ports 10/100/1000Base-T (RJ45)
- Up to 2 combo ports 1000Base-X (SFP) / 10/100/1000Base-T (RJ45)
- LTE support
- Integrated AC/DC full range power supply with automatic selection
- Optional redundant external power supply adapter
- Extensive support to advanced routing protocols
- Tunneling and cryptography to build VPN services
- Comprehensive management support

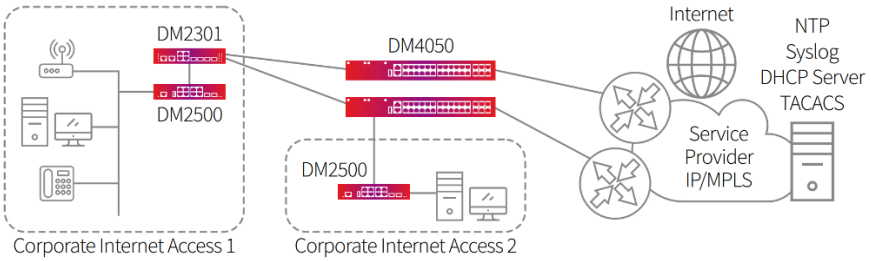
VIRTUAL PRIVATE NETWORKS

VPN technologies allow customer's private traffic to be transferred through public IP infrastructure in a secure and transparent way. The products of DM2500 router family support different encapsulation types, including modern encryption mechanisms to ensure data confidentiality and authenticity, also preserving the performance and assuring the user experience.

APPLICATIONS

INTERNET ACCESS ROUTER

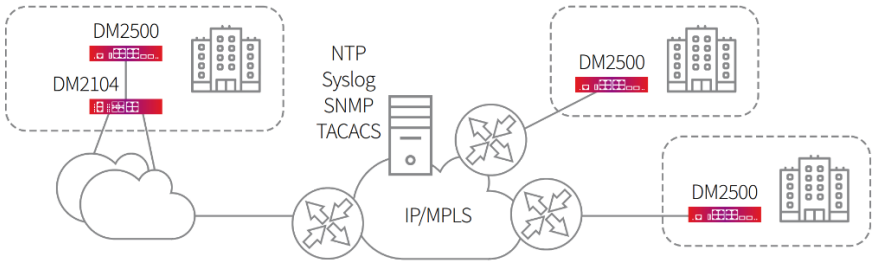
DM2500 routers offer a cost-effective solution for Corporate Internet Access Services with symmetric rates, ensuring flexibility and reliability at the customer premises. Advanced routing protocols, security mechanisms, traffic prioritization and management features are available, allowing Service Providers to monitor and control the services being offered to their customers.



ENTERPRISE TRIPLE-PLAY

The solution based on DM2500 router family can be deployed when offering symmetric point-to-point data, voice and video concentrated all in a single device. The products allow the prioritization and tunneling of packets traversing both the Service Provider owned infrastructure and the public Internet.

Additionally the devices offer dedicated support for traffic encryption, user authentication and Access List Control (ACLs) entries. Such mechanisms when combined can assure security, integrity and confidentiality of sensitive information being transferred among separate branches of the same organization.



Feature List

ETHERNET

- WAN or LAN assigned to any Ethernet Port
- Digital Diagnostics Reading
- Auto-MDIX and Auto-negotiation
- Combo ports with automatic detection
- Ports and VLANs assigned to virtual bridges
- Link Aggregation Control Protocol (LACP)

MANAGEMENT

- CLI (Command Line Interface)
- Local management through RS-232 console
- Telnet and SSHv2 management
- Loopback interfaces
- Remote Syslog
- SNMP v2c e v3
- MIBs and traps for CPU and memory usage
- MIBs and traps for temperature reading and monitoring
- MIBs RMON
- Dying Gasp with trap sending
- Management and services accessible via IPv6
- Inventory reporting
- Download and upload of configuration files in readable format
- Storage of up to 2 firmware and up to 20 configuration files in non-volatile memory
- Firmware upgrade through HTTP, TFTP e SCP
- TACACS+ (AAA)
- RADIUS Authentication

SERVICES

- NTP server/client
- DHCPv4 server/relay/client
- DHCPv6 server/client
- DNS client
- PPPoE client (IPv4 and IPv6*)

ENCAPSULATION AND TUNNELING

- VLAN
- GRE (*Generic Routing Encapsulation*) (IPv4 e IPv6)

FILTERS AND SECURITY

- Access Control List (ACL) entries applied to any interface according to source MAC, VLAN, IP protocol, source/dest IP, and source/dest TCP/UDP port fields, TCP flags and ICMP codes.
- Traffic isolation with NAT (source/destination)
- Firewall stateful and zone based policy

QOS

- Packet classification and assignment to queues based on source Ethernet Port, Ethertype, source/dest MAC, VLAN, DSCP, IP protocol, source/dest IP, source/dest TCP/UDP port and linked to policy route rule
- PCP (VLAN) marking
- DSCP marking for conforming and exceeding traffic
- Rate limiters applied to inbound and outbound traffic
- FQ (Fair Queueing) and PQ (Priority Queueing) mechanisms
- Queue type Random Detect DSCP based

ROUTING

- Static Routing
- RIP, RIPng, OSPFv2, OSPFv3 e BGP-4
- PBR (Policy-based Routing) (IPv4/IPv6)
- IPv6 routing
- VRRPv2 (IPv4 and IPv6)
- VRF-lite
- Multicast Routing
- PIM-SM and PIM-SSM (IPv4)

OAM

- Ping and Traceroute
- Traffic counters per physical port, per VLAN and per tunnel
- TWAMP (Two-Way Active Measurement Protocol) including traffic loss, latency and jitter statistics MIBs
- BFD (Bidirectional Forwarding Detection) associated to static IPv4/IPv6 routes, OSPFv2 or BGP
- IPFIX (Flow Accounting) including NetFlow v9 support

TRAFFIC ENCRYPTION

- IPsec with authentication and encryption (aes128, aes256 and 3des)
- Tunnel and GRE over IPsec modes (IPv4/IPv6)
- Authentication with pre-shared keys and certificates

(*) Feature in Roadmap. Contact Datacom for availability information.

STANDARDS

IETF

draft-grant-tacacs-02	The TACACS+ Protocol
RFC768	User Datagram Protocol (UDP)
RFC791	Internet Protocol (IP)
RFC792	Internet Control Message Protocol (ICMP) (Ping IPv4)
RFC793	Transmission Control Protocol (TCP)
RFC826	An Ethernet Address Resolution Protocol (ARP)
RFC854	Telnet Protocol Specification
RFC894	A Standard for the Transmission of IP Datagrams over Ethernet Networks
RFC950	Internet Standard Subnetting Procedure
RFC1035	Domain Names – Implementation and Specification
RFC1212	Concise MIB Definitions
RFC1213	Management Information Base for Network Management of TCP/IP based internets: MIB-II
RFC1215	A Convention for Defining Traps for Use With the SNMP
RFC1441	SNMPv2 Protocol Framework
RFC1700	Assigned Numbers
RFC1812	Requirements for IP Version 4 Routes (IPv4)
RFC2080	RIPng for IPv6
RFC2131	Dynamic Host Configuration Protocol (DHCP)
RFC2178	OSPF Version 2
RFC2403	The Use of HMAC-MD5-96 within ESP and AH
RFC2404	The Use of HMAC-SHA-1-96 within ESP and AH
RFC2453	RIP Version 2
RFC2474	Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers
RFC2475	An Architecture for Differentiated Services
RFC2578	Structure of Management Information Version 2 (SMIv2)
RFC2579	Textual Conventions for SMIv2
RFC2597	Assured Forwarding PHB Group
RFC2784	Generic Routing Encapsulation (GRE)
RFC2863	The Interfaces Group MIB
RFC3022	Traditional IP Network Address Translator (Traditional NAT)
RFC3246	An Expedited Forwarding PHB
RFC3584	Coexistence between Version 1, Version 2, and Version 3 of the Internet-standard Network Management Framework
RFC3635	Definitions of Managed Objects for the Ethernet-like Interface Types
RFC4250	The Secure Shell (SSH) Protocol Assigned Numbers
RFC4251	The Secure Shell (SSH) Protocol Architecture
RFC4632	Classless Inter-domain Routing (CIDR): The Internet Address Assignment and Aggregation Plan
RFC4252	The Secure Shell (SSH) Authentication Protocol
RFC4253	The Secure Shell (SSH) Transport Layer Protocol
RFC4254	The Secure Shell (SSH) Connection Protocol
RFC4271	A Border Gateway Protocol 4 (BGP-4)
RFC4291	IP Version 6 Addressing Architecture
RFC4301	Security Architecture for the Internet Protocol
RFC4302	IP Authentication Header
RFC4303	IP Encapsulating Security Payload (ESP)
RFC4309	Using Advanced Encryption Standard (AES) CCM Mode with IPsec Encapsulating Security Payload (ESP)
RFC4443	Internet Control Message Protocol (ICMPv6) for the Internet Protocol Version 6 (IPv6) Specification
RFC4861	Neighbor Discovery for IP version 6 (IPv6)
RFC4862	IPv6 Stateless Address Auto configuration
RFC5424	The Syslog Protocol
RFC5357	A Two-Way Active Measurement Protocol (TWAMP)
RFC5880	Bidirectional Forwarding Detection (BFD)
RFC5882	Generic Application of Bidirectional Forwarding Detection (BFD)
RFC5905	Network Time Protocol Version 4: Protocol and Algorithms Specification
RFC7011	Specification of the IP Flow Information Export (IPFIX) Protocol for the Exchange of Flow Information
RFC7296	Internet Key Exchange Protocol Version 2 (IKEv2)
RFC8200	Internet Protocol, Version 6 (IPv6) Specification

IEEE

802.1d	Media Access Control (MAC) Bridge
802.1p	Priority Support
802.1q	Virtual LAN
802.1ad	Provider Bridges
802.3	10Base-T
802.3u	100Base-TX
802.3x	Flow Control
802.3z	1000 BASE SX/LX
802.3ab	1000Base-T

ANATEL

Resolução 242 (30-Nov-2000)	Rules for Certification and Homologation of Telecommunication Products
Resolução 323 (7-Nov-2002)	Standard for Certification of Telecommunication Products
Resolução 442 (21-Jul-2006)	Rules for the Certification of Telecommunication Equipment in Aspects of Electromagnetic Compatibility

ETSI

EN 300 019-1-1, Class 1.2	Environmental Conditions for storage
EN 300 019-1-2, Class 2.3	Environmental Conditions for Transport
EN 300 386 V1.6.1 (2012-09)	Electromagnetic compatibility and Radio spectrum Matters (ERM)
EN 55022	Information technology equipment. Radio disturbance characteristics - Class A

IEC

60825-1	Laser Safety Class
61000-4-11	Voltage dips, short interruptions and voltage variations immunity tests
61000-4-6	Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-2	Electrostatic Discharge Immunity Test
EN 61000-4-4	Electrical fast transient/burst immunity test
EN 61000-4-5	Surge immunity test

TECHNICAL SPECIFICATIONS

		DM2500 4GT	DM2500 6GT+2GC	DM2500 4GT+LTE	DM2500 4GT+2GX+LTE
HARDWARE CHARACTERISTCS	AC/DC Power Input	100 to 240Vac / 48 to 60Vdc			
	DC Power Input	11.4 to 12.6Vdc			
	Maximum Power Consumption	17W	28W	21W	30W
	Typical Power Consumption	10W	15W	13W	17W
	Fanless	Yes	No	Yes	No
	Operational Temperature	0 to 45°C			
	Operational Relative Humidity	10 to 90%, non-condensed			
	Operational Altitude	0 to 3000m			
	Storage Temperature	-20 to 70°C			
	Storage Relative Humidity	10 to 90%, non-condensed			
	Dimensions	43 x 189 x 191mm (H x W x DP)			
INTERFACES	10/100/1000Base-T (RJ45)	4	6	4	4
	1000Base-X (SFP)	-	-	-	2
	Combo 1000Base-X (SFP) / 10/100/1000Base-T (RJ45)	-	2	-	-
	LTE	-	-	Yes	Yes
	USB 2.0 Host Tipo A	1			
	Console (RJ45)	1			
MEMORY	Flash	4GB			
	RAM	1GB			

LTE TECHNICAL SPECIFICATIONS

	DM2500 4GT+LTE and DM2500 4GT+2GX+LTE
Module	Quectel
Data rate	LTE Cat.4 – 150Mbps downlink and 50Mbps uplink
LTE-FDD	B1 / B2* / B3 / B4 / B5 / B7 / B8 / B28
LTE-TDD	B40
WCDMA	B1 / B2 / B5 / B8
GSM/EDGE	Quad-band
Region**	Latin America, Australia, New Zealand, Taiwan
Certification	Carrier: Telstra Regulatory: FCC/ Anatel/ NCC/ RCM/ GCF Others: WHQL

(*) RX-diversity is not supported

(**) Contact Datacom for other regions

Ordering Information

Model	Description	Picture
DM2500 4GT 800.5181.xx	Router with 4 10/100/1000Base-T ports, 1 USB port type A and RJ-45 console port.	
DM2500 6GT+2GC 800.5182.xx	Router with 6 10/100/1000Base-T ports, 2 combo 10/100/1000Base-T or 1000Base-X SFP ports, 1 USB port type A and RJ-45 console port.	
DM2500 4GT+LTE + Panel antennas 810.3814.xx	Router with 4 10/100/1000Base-T ports, 1 USB port type A, RJ-45 console port and LTE interface with panel antennas	
DM2500 4GT+LTE + Desktop antennas 3m 810.3815.xx	Router with 4 10/100/1000Base-T ports, 1 USB port type A, RJ-45 console port and LTE interface with desktop antennas 3m	
DM2500 4GT+2GX+LTE + Panel antennas 810.3816.00	Router with 4 10/100/1000Base-T ports, 2 optical 1000Base-X SFP ports, 1 USB 2.0 port type A, RJ-45 console port and LTE interface with panel antennas	
DM2500 4GT+2GX+LTE + Desktop antennas 3m 810.3817.00	Router with 4 10/100/1000Base-T ports, 2 optical 1000Base-X SFP ports, 1 USB 2.0 port type A, RJ-45 console port and LTE interface with desktop antennas 3m	

ACCESSORIES

Accessory	Description	Picture
SFP 1GE PN: inquiry	Optical Gigabit Ethernet SFP modules. Several models with varying power and reach specifications are offered.	
MA-01 Tray 800.0141.xx	Tray for installing up to two devices side-by-side on 19-inch 1U racks. Tray with holes designed to fasten the devices using screws.	
MA-04 Tray 800.0300.xx	Tray for installing one unit on 19-inch 1U racks with additional space for accommodating cables. Tray with holes to allow flexible installation.	
MA-06 Tray 800.0463.xx	Tray for installing one unit on 19-inch 1U racks with additional space for accommodating cables.	
External AC PSU 820.8007.xx	Optional 100-240Vac / 50-60Hz input to 12Vdc output external power supply unit for redundancy.	

SUPPORTED PROTOCOLS SCALABILITY

Group	Feature	DM2500 4GT	DM2500 6GT+2GC	DM2500 4GT+LTE	DM2500 4GT+2GX+LTE
SERVICES	Maximum number of DHCPv4/v6 Server pools	100 [1]	100 [1]	100 [1]	100 [1]
	Maximum number of DHCPv4/v6 sessions	2000	2000	2000	2000
	Maximum number of DHCPv4/v6 Relay instances	1	1	1	1
	Maximum number of associated servers in DHCPv4/v6 Relay	2	2	2	2
	Maximum number of TWAMP sessions in Sender mode	10	10	10	10
	Maximum number of TWAMP sessions in Reflector mode	64	64	64	64
MANAGEMENT	Maximum number of registred local users	32	32	32	32
	Maximum number of TACACS+ servers	8	8	8	8
	Maximum number of RADIUS servers	8	8	8	8
	Maximum number of SNMP servers	6 [1]	6 [1]	6 [1]	6 [1]
	Maximum number of Syslog servers	6 [1]	6 [1]	6 [1]	6 [1]
	Maximum number of NTP servers	3 [1]	3 [1]	3 [1]	3 [1]
	Maximum number of IPFIX collectors	2	2	2	2
	Maximum number of SSH sessions	8	8	8	8
	Maximum number of TELNET sessions	8	8	8	8
	Maximum number of characters configured in banner	2000	2000	2000	2000
SECURITY	Maximum number of ACL-Based Firewall instances	10	10	10	10
	Maximum number of rules per ACL-Based Firewall instances	1000	1000	1000	1000
	Maximum number of Source NAT (SNAT) rules	100	100	100	100
	Maximum number of Destination NAT (DNAT) rules	100	100	100	100
QoS	Maximum number of QoS Rate-Control instances	8	8	8	8
	Maximum number of QoS Shaper instances	8	8	8	8
	Maximum number of QoS Limiter instances	8	8	8	8
	Maximum number of classes per instance QoS Shaper	8	8	8	8
	Maximum number of classes per instance QoS Limiter	8	8	8	8
	Maximum number of rules per policy route	100	100	100	100
ENCAPSULATION	Maximum number of VLANs 802.1Q	4094	4094	4094	4094
	Maximum Ethernet frame size MTU [Bytes]	9000	9000	9000	9000
	Maximum number of PPPoE Client sessions	15	15	15	15
	Maximum number of GRE Tunnels	50	50	50	50

	Maximum number of Bridge Groups	4	8	4	4
ROUTING	Maximum number of static routes IPv4	100	100	100	100
	Maximum number of static routes IPv6	100	100	100	100
	Maximum number of RIP/RIPng routes	10000 [2]	10000 [2]	10000 [2]	10000 [2]
	Maximum number of OSPFv2/v3 areas	32 [1]	32 [1]	32 [1]	32 [1]
	Maximum number of OSPFv2 neighbors	20 [1]	20 [1]	20 [1]	20 [1]
	Maximum number of OSPFv3 neighbors	32 [1]	32 [1]	32 [1]	32 [1]
	Maximum number of OSPFv2/v3 routes	10000 [2]	10000 [2]	10000 [2]	10000 [2]
	Maximum number of BGP IPv4/IPv6 peers	32 [1]	32 [1]	32 [1]	32 [1]
	Maximum number of BGP IPv4/IPv6 routes	10000 [2]	10000 [2]	10000 [2]	10000 [2]
	Maximum number of BFD sessions per node	10	20	10	10
	Maximum number of VRRPv2/v3 Groups	255	255	255	255
	Maximum number of VIPs per VRRPv2/v3 Group	20	20	20	20
	Maximum number of VRFs	7	7	7	7
	Maximum number of multicast groups (PIM)	20	60	20	20
VPN	Maximum number of Site-to-Site VPNs with IPv4	64	128	64	64

[1] - Recommended maximum value.

[2] - Recommended maximum value, but it is possible to reach a greater number of routes.

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