

# EdgeMarc 4500 Series Network Services Gateways

## Introduction

The EdgeMarc 4500 Series combines multiple voice and data features into a single, easy to use network services gateways. It includes models that have up to 4 T1 WAN interfaces or a single Ethernet WAN, a 4 port managed VLAN switch, optional 802.11 Wireless Access Point and integrated analog phone and line ports.

The EdgeMarc 4500 Series is a flexible, application ready platform that can be deployed initially as a low-cost WAN access router and expanded to other applications such as hosted VoIP, SIP trunking and enterprise video over IP. It is the ideal platform for service providers offering SIP trunking services, hosted VoIP and other managed enterprise products and services.

## Feature Rich, Simple to Use - Key Features

- Expands to 4 X T1 with software license key upgrade
- Integrated FXS and FXO ports
- VoIP survivability (local)
- Integrated VoIP failover to PSTN
- Integrated 4 port managed Ethernet switch with VLAN support
- VoIP-aware VPN/Firewall
- VoIP application layer gateway (SIP and H.323) resolves NAT/Firewall traversal issues
- QoS: priority queuing, traffic shaping, diffserv marking/policing
- Integrated VoIP Test Call Agent-standalone or in conjunction with EdgeView ALT
- VoIP call admission control
- Passive call quality monitoring (MOS, jitter, latency and more)
- Management: HTTP, HTTPS, SSH, Telnet, SNMP v1,v3
- VPN hardware accelerator
- 802.11 wireless access point for data (45xxT4W)



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## Product Benefits

**All-in-one** - One box for your data router, Ethernet switch, analog ports, WiFi, firewall, VoIP ALG - with a single management interface.

**Scalability** - Whether you need a single T1 or a 4 X T1 interface, the 4508T4 is cost optimized for businesses of all sizes. Additional T1 interfaces are enabled through software license keys.

**Survivability** - VoIP calls can be re-routed locally or over the PSTN during WAN link failures - using one device.

**Quality of Service** - Packet prioritization and data traffic shaping for VoIP calls.

**Plug & Dial** - Interoperates with top softswitch vendors to configure IP phones and the integrated analog ports in minutes, not hours.

**Simplified Troubleshooting** MOS statistics, call monitoring, LAN/WAN problem isolation from the router, Integrated VoIP Test Call Agent, TCPdump, PING, Traceroute and more.



# EdgeMarc 4500 Series Network Services Gateways

## Specifications

Interfaces	
<b>T1 WAN</b>	<b>Up to 4</b>
Framing	ESF/D4
Line coding	B8ZS
Line Build Out	0, -7.5, -15db
Connector	RJ45
PPP	Yes
MLPPP	Yes
MLPPPoFR	Yes
Frame Relay	Yes
HDLC/cHDLC	Yes
Ethernet WAN	1
Autosensing	Yes
10/100 Mbps	Yes
Duplex	Half or Full
<b>Ethernet LAN</b>	<b>4</b>
Autosensing	Yes
10/100 Mbps	Yes
Duplex	Half or Full
Managed VLAN	Yes
Phone/FXS	6 or 2
Connector	RJ11
Loop start	Yes
<b>Ringer Equivalency Number (REN)</b>	<b>5 per port; 20 per system</b>
Ringing voltage: $\geq 50V_{rms}$ at 20 Hz sinusoidal waveform	Yes
Selectable resistive and complex impedances for global usage	Yes
48V on-hook voltage	Yes
24mA off-hook current	Yes
<b>Line/FXO</b>	<b>2 or 6</b>
Connector	RJ11
Loop start	Yes
Far end disconnect supervision - battery reversal	Yes
Far end disconnect supervision - RTP silence detection	Yes
<b>802.11 Wireless Access Point for Data</b>	<b>Yes</b>
a/b/g	Yes
WEP	Yes
WPA	Yes
AES	Yes
<b>USB ports</b>	<b>2</b>
<b>Console Connector</b>	<b>DB9 Male</b>

Power, Dimensions, Certifications	
Power Supply (AC) - external brick	12V, 3.0A
Power Consumption (Maximum)	20W-30W
Dimensions (H/W/L)	1.7"/10"/7"
Weight	2 lbs.
Certifications	
UL	Yes
CE	Yes
FCC Part 68	Yes
FCC Part 15	Yes
Industry Canada	Yes
CB	Yes
RoHS	Yes

Management	
Web GUI	Yes
CLI	Yes
http, https	Yes
SSH, Telnet	Yes
SNMP V1	Yes
SNMP V3	Yes
TCPdump, Traceroute, Ping, Syslog	Yes
Configuration backup/restore	Yes
Remote Upgrades (FTP)	Yes

System Services	
DHCP server	Yes
Local TFTP/FTP server	Yes
Automatic TFTP/FTP download on restart	Yes

# EdgeMarc 4500 Series Network Services Gateways

## Specifications

Security	
Stateful packet inspection firewall	Yes
VoIP protocol aware firewall	Yes
Dynamic network address translation	Yes
Static network address translation	Yes
Port address translation	Yes
Denial of Service protection - SYN flood	Yes
Denial of Service protection - UDP flood	Yes
Denial of Service protection - ICMP flood	Yes
Denial of Service protection - Fragment flood	Yes
IPSec	Yes
IKE key management	Yes
3DES	Yes
AES	Yes
SHA-1	Yes
MD-5	Yes
IPSec Hardware acceleration	Yes
Number of tunnels	Up to 12

Traffic Management/QoS/Routing	
Class-based queuing	Up to 8
Prioritization on IP	Yes
Prioritization on VoIP Protocol	Yes
Traffic shaping	Yes
Guaranteed bandwidth	Yes
Upstream bandwidth management	Yes
Downstream bandwidth management	Yes
VoIP call admission control	Yes
Diffserv marking	Yes
Diffserv policing	Yes
IP routing	Yes
Secondary address/subinterface support	Yes
VLAN - 802.1Q	Up to 16

VoIP	
SIP ALG	Yes
H.323 ALG	Yes
NAT for SIP	Yes
NAT for H.323	Yes
Survivability (SIP) - station to station	Yes
Survivability (SIP) - PSTN failover	Yes
SIP registration pacing	Yes
Softswitch redundancy	Yes
Proxy mode	Yes
Multi-homed proxy mode	Yes
Transparent proxy mode	Yes
EdgeView Plug & Dial Compatible	Yes
Dynamic VoIP clients list	Yes
SIP RFC 3261	Yes
SIP RFC 2327	Yes
SIP RFC 3263	Yes
SIP RFC 2833	Yes
H.323 version 4	Yes
H.225.0v5	Yes
H.245.0v10	Yes
VoIP Test Call Agent	Yes

Calling Features - Phone & Line Ports	
SIP User Agent	Yes
SIP PSTN gateway	Yes
Transfer	Yes
Hold	Yes
Conference	Yes
Caller id	Yes
Call waiting	Yes
T.38 fax support	Yes
G711 u-law	Yes
G711 a-law	Yes
G729	Yes
G728	Yes
G726-16	Yes
G726-24	Yes
G726-32	Yes
G726-40	Yes
Inbound PSTN calling line port	Yes
Inbound PSTN calling line port - forwarded phone number or extension	Yes
Inbound PSTN calling line port - 2 stage dialing (survivable mode)	Yes
Outbound calling line port - PSTN failover (survivable mode)	Yes
Outbound calling line port - local enterprise gateway	Yes



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PRODUCT	PART Number	Ethernet WAN	T1 WAN	Ethernet LAN	802.11 WAP	Phone Ports (FSX)	Line Ports (FXO)	WAN Calls
<b>4500</b>								
EdgeMarc 2	EM-4500-02	•	-	4	-	-	-	2
EdgeMarc 5	EM-4500-05	•	-	4	-	-	-	5
EdgeMarc 10	EM-4500-10	•	-	4	-	-	-	10
EdgeMarc 15	EM-4500-15	•	-	4	-	-	-	15
EdgeMarc 30	EM-4500-30	•	-	4	-	-	-	30
<b>4500T4</b>								
VPN router, Single T1	EM-4500T4-0-1	•	1	4	-	-	-	-
EdgeMarc 5T, Single T1	EM-4500T4-05-1	•	1	4	-	-	-	5
EdgeMarc 15T, Single T1	EM-4500T4-15-1	•	1	4	-	-	-	15
EdgeMarc 30T, Single T1	EM-4500T4-30-1	•	1	4	-	-	-	30
VPN router, Dual T1	EM-4500T4-0-2	•	2	4	-	-	-	-
EdgeMarc 5T, Dual T1	EM-4500T4-05-2	•	2	4	-	-	-	5
EdgeMarc 15T, Dual T1	EM-4500T4-15-2	•	2	4	-	-	-	15
EdgeMarc 30T, Dual T1	EM-4500T4-30-2	•	2	4	-	-	-	30
VPN router, Quad T1	EM-4500T4-0-4	•	4	4	-	-	-	-
EdgeMarc 5T, Quad T1	EM-4500T4-05-4	•	4	4	-	-	-	5
EdgeMarc 15T, Quad T1	EM-4500T4-15-4	•	4	4	-	-	-	15
EdgeMarc 30T, Quad T1	EM-4500T4-30-4	•	4	4	-	-	-	30
<b>4508T4</b>								
EdgeMarc 15T, Single T1	EM-4508T4-15-1	•	1	4	-	6	2	15
EdgeMarc 30T, Single T1	EM-4508T4-30-1	•	1	4	-	6	2	30
EdgeMarc 15T, Dual T1	EM-4508T4-15-2	•	2	4	-	6	2	15
EdgeMarc 30T, Dual T1	EM-4508T4-30-2	•	2	4	-	6	2	30
EdgeMarc 15T, Quad T1	EM-4508T4-15-4	•	4	4	-	6	2	15
EdgeMarc 30T, Quad T1	EM-4508T4-30-4	•	4	4	-	6	2	30
<b>4508T4W</b>								
EdgeMarc 15T, Single T1, WAP	EM-4508T4W-15-1	•	1	4	•	6	2	15
EdgeMarc 30T, Single T1, WAP	EM-4508T4W-30-1	•	1	4	•	6	2	30
EdgeMarc 15T, Dual T1, WAP	EM-4508T4W-15-2	•	2	4	•	6	2	15
EdgeMarc 30T, Dual T1, WAP	EM-4508T4W-30-2	•	2	4	•	6	2	30
EdgeMarc 15T, Quad T1, WAP	EM-4508T4W-15-4	•	4	4	•	6	2	15
EdgeMarc 30T, Quad T1, WAP	EM-4508T4W-30-4	•	4	4	•	6	2	30
<b>4562T4W</b>								
EdgeMarc 15T, Single T1, WAP	EM-4562T4W-15-1	•	1	4	•	2	6	15
EdgeMarc 30T, Single T1, WAP	EM-4562T4W-30-1	•	1	4	•	2	6	30
EdgeMarc 15T, Dual T1, WAP	EM-4562T4W-15-2	•	2	4	•	2	6	15
EdgeMarc 30T, Dual T1, WAP	EM-4562T4W-30-2	•	2	4	•	2	6	30
EdgeMarc 15T, Quad T1, WAP	EM-4562T4W-15-4	•	4	4	•	2	6	15
EdgeMarc 30T, Quad T1, WAP	EM-4562T4W-30-4	•	4	4	•	2	6	30
<b>4508E</b>								
EdgeMarc 8	EM-4508E-8	•	-	4	-	8	-	8
EdgeMarc 15	EM-4508E-15	•	-	4	-	8	-	15
EdgeMarc 30	EM-4508E-30	•	-	4	-	8	-	30



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