TECHNICAL SPECIFICATIONS

Unified Communications

Hybrid Communications

Multi-Location Communications

ETERNITY GENX12S

Fixed Media Gateways

Universal Media Gateways

MATRIX ETERNITY GENX12S

ETERNITY GENX12S is the next-generation hardware platform, on which the SARVAM UCS SME server software is hosted. It offers IP at the core with seamless connectivity to the all-pervasive legacy and new-generation advanced wireless telecom networks like POTS, ISDN, T1/E1, and GSM/3G/4G/VoLTE[#]. The next-generation platform supports up to 99 VoIP (SIP) trunks, 40 GSM ports, 8 T1/E1 ISDN PRI ports, and 64 analog trunks with up to 999 UC users, 96 digital users, and 240 analog users. Both AC and DC power supply options are available.

BUILT-IN RESOURCES			
SYSTEM RESOURCES	DESCRIPTION	ETERNITY GENX	
Compatible Software Server	Unified Communication Server	SARVAM UCS SME	SARVAM UMG
RS232C (COM) Ports	SMDR/PMS/CAS Interfaces	1	1
USB Ports	Internal USB 2.0 External USB 3.0	2	2
USB Storage	Internal USB - Up to 64GB (8GB - for Software Firmware and 260 Hours of Recording (Factory Fitted), 64GB Pen Drive can be used for 2170 Hours of Recording) External USB - for future use	32 GB	32 GB
Group Conference (3-Party)	Numbers of 3-Party Conferences	15	-

Maximum participants in Single Conference	Maximum Participants in Single Conference	21	-
Voice Messages (16 seconds each)	Auto-Attendant, Voice Help, Voice Tones	15	-
Ethernet Ports (Gigabit)	Web-based Configuration, PMS, SMDR, System Log, VOIP (LAN and WAN) and VMS	2	2

SYSTEM SCALABILITY			
SYSTEM RESOURCES	DESCRIPTION	SARVAM UCS SME (ETERNITY GENX)	SARVAM UMG (ETERNITY GENX)
Universal Slots	For Interface Expansion Cards (except VOIP and VMS)	12	12
SLT/FXS Ports	Single Line Analog Telephones	240	240
DKP/DSS Ports	Proprietary Digital Key Phones or DSS Consoles	96	-
CO/FXO (TWT) Ports	Two Wire Trunk (CO) Lines	64	192
BRI Ports	ISDN BRI Network or ISDN Compatible Devices	32	48
T1/E1 Ports	T1 or E1 or ISDN PRI Network or Compatible Device	8	8
GSM/3G/4G LTE Ports	GSM/3G/4G LTE Ports	40	48
UC (SIP/IP) Users	Registration of Hard SIP/IP Phones, UC Client for Android/iOS and Windows PC using Business Application	999	-
SIP Trunks	SIP Trunks (Clients) for ITSP or Peer-to-Peer	99	250
VOIP Channels	VOIP Channels for simultaneous calling with transcoding	128	128
NX DBM VOCODER64	DAUGTHER-BOARD MODULE on CPU for VOCODER (VOIP) Channels	2	2
Voice Mail Channels (Sessions)	Voice Mail System with Auto-Attendant and with dedicated Mailbox for each type of extension (Analog, Digital, IP)	64	-

Radio Interface Ports	Interface to HF/VHF/UHF Radio Transceiver	16	-
E&M Ports	E&M Network	32	-

NX DBM VOCODER AND NX DBM VMS – SYSTEM RESOURCES			
SYSTEM RESOURCES	DESCRIPTION	SARVAM UCS SME (ETERNITY GENX)	SARVAM UMG (ETERNITY GENX)
Max. Concurrent calls from IP User to other IP User	IP-IP Audio Calls without Transcoding	500	-
Max. Concurrent calls from IP User to other IP User	IP-IP Audio Calls with Transcoding	128	128
Concurrent Video Calls from IP User to other IP User	VOCODER Channel will not be Occupied (Does not Support Transcoded Video Calls)	55	-
Concurrent Voice Module (Play Voice Messages)	Concurrent calls management with Auto-attendant	9	-
Features need transcoding channel (NX DBM - VOCODER Channels)	Conference - for each IP call, Conversation Recording/Call Tapping - for each IP Call, Retrieval of Voice Mail - from each IP user, Trunk auto-answer/VMS Auto-attendant – for each incoming call on SIP Trunk, for each IP to non-IP call		

For redundancy, the equivalent software license (apart from the primary CPU) is to be procured additionally.

LICENSES	
APPLICATIONS	ETERNITY GENX
SARVAM UCS SME	
EXPANSION	SARVAM EXP4 SME
IP CHANNEL	SARVAM VOCODER CHNL4
IP CHANNEL	SARVAM VOCODER CHNL16
VMS CHANNEL	SARVAM VMS CHNL4
VMS CHANNEL	SARVAM VMS CHNL16
HOSPITALITY	SARVAM HOSPITALITY SME
PMS	SARVAM PMS SME
SMS GATEWAY	SARVAM SMS GATEWAY SME
SMS SERVER	SARVAM SMS SERVER SME
GATEWAY	SARVAM GATEWAY SME
QSIG	SARVAM QSIG SME
CTI	SARVAM CTI SME
IP SUBSCRIBER	SARVAM IPSUB5
IP SUBSCRIBER	SARVAM IPSUB10

	SARVAM IPSUB50
	SARVAM IPSUB100
	SARVAM IPSUB500
	SARVAM VARTA USER5E
	SARVAM VARTA USER10E
	SARVAM VARTA USER50E
	SARVAM VARTA USER100E
	SARVAM VARTA USER500E
	SARVAM VARTA USER5P
	SARVAM VARTA USER10P
UC CLIENT	SARVAM VARTA USER50P
	SARVAM VARTA USER100P
	SARVAM VARTA USER500P
	SARVAM VARTA USER5C
	SARVAM VARTA USER10C
	SARVAM VARTA USER50C
	SARVAM VARTA USER100C
	SARVAM VARTA USER500C

TECHNOLOGY	
Type of Switching	IP at Core
Processor Speed	900 MHz Dual Core
Slots Type	Universal

VOIP	
Type	DAUGTHER-BOARD MODULE on CPU
VOCODER Channels per DBM (DAUGHTER-BOARD MODULE)	64
VOIP Protocols	SIP v2, SIP over TCP, Symmetric RTP, RTCP, 100rel/PRACK
Network Protocol	IPv6, IPv4, TCP, UDP, SNTP, STUN, ARP, ICMP, PPP, DNS, SMTP
SIP	Maximum 99 SIP Accounts per System, Out Bound Proxy Support, Display Name, User Name, Password, URL, Proxy URL, Register Interval
VOIP Channels	128/248 VOIP Channels with 2/4 VOIP Daughter-Board Modules
Line Echo Cancellation	G.168 with 64/128ms Tail Length

Voice	Dynamic Jitter Buffer (Adaptive), Comfort Noise Generation and Voice Activity Detection
NAT	STUN and NAT Keep Alive
Voice CODECs	G.711 (A-law, μ-Law), G.723, G.729AB, GSM-FR, GSM-EFR and iLBC
Call Progress Tones	Dial tone, Ring Back Tone, Busy Tone, Error Tone
Fax	T.38 Relay and Pass Through
Quality of Service	SIP QoS and RTP QoS
Security	SRTP/TLS over SIP, MD5 Authentication for SIP, Password Protected Configuration by Admin and User
Physical Connector	Ethernet (RJ45) Gigabit Port, Auto MDIX (10/100/1000 base-T)

VOICEMAIL	
Type	DAUGTHER-BOARD MODULE on CPU
VMS Channels per DBM (DAUGHTER-BOARD MODULE)	64
Voicemail Box	Dedicated Mail Box for each type of Extension (Analog, Digital, IP)
Voice Messages	15 Voice Messages of 16 seconds each
Voice Recording	Recording up to 2,170 hours with 64 GB USB Pen Drive

GSM	
Type	Expansion Card for GSM Interface
GSM Band (MHz)	Quad-Band: GSM850, EGSM900, DCS1800, PCS1900
Compliant	ETSI GSM Phase 2/2+
SIM Card	One SIM per GSM Port
SIM Interface	1.8V, 3V
Transmission Power	Class 4 (2W) at GSM850 MHz and EGSM900 MHz Band
	Class 1 (1W) at DCS1800 MHZ and PCS1900 MHZ Band
RF Sensitivity	Better than -102dBm
Protocol	AT Command Interface

External Antenna	One Antenna per 4 GSM Ports, 1.8/3.0*dBi, 50Ω SMA (Male) Connector, Omni Directional with Cable of 3 Meters Length

*Depends on GSM Frequency Band

3G/4G	
Type	Expansion Card for GSM 3G/4G Interface
GSM Band (MHz)	Quad-Band: GSM850, EGSM900, DCS1800, PCS1900 Penta-Band: GSM: 850/900/1800/1900 and UMTS: 800/850/900/1900/2100
Compliant	ETSI GSM Phase 2/2+
SIM Card	One SIM per GSM Port
SIM Interface	1.8V, 3V
Transmission Power	Output Power
RF Sensitivity	< -106dBm at GSM850, EGSM900, DCS1800, PCS1900 < -108dBm at WCDMA2100, WCDMA1900 < -106dBm at WCDMA850
Protocol	At Command Interface
External Antenna	One Antenna per 4 3G/4G GSM Ports, 1.8/3.0*dBi, 50Ω SMA (Male) Connector, Omni Directional with Cable of 3 Meters Length

* Depends on GSM/3G/4G Frequency Band

ISDN PRI	
Type	Expansion Card for ISDN PRI Interface
Channels	23B + D and 30B + D
Personality	Network (NT) and terminal (TE)
Line Coding	AMI/B8ZS for T1 and HDB3 for E1
Framing	ESF for T1 and CEPT1 (with/without CRC) for E1
Switch Variant	AT&T 4ESS, AT&T 5ESS, DMS-100, ETSI NET5,ITU-T Q.921, ITU-T Q.931, NTT INS64, US NI2 (National ISDN 2), QSIG ECMA, France VN
Protection	Solid State (Over Voltage and Over Current) Built-in Secondary Protection
Supplementary Services	QSIG ECMA

Physical Connector	RJ45 (Impedance Selectable)/Mono-mode Fiber Optic*

*Option available with ETERNITY E1F0 PRI SINGLE

E1 CAS	
Type	Expansion Card for T1 E1 ISDN PRI
Bit Rate	2048 kbps +/- 50ppm
Line Coding	HDB3
Framing	CEPT1 (with/without CRC) with CAS MF
Line Signaling	ITU-T Q.400 – Q.490
Register Signaling	MFC-R2
Alarms	I.431, G.732, ETSI 300-233
Protection	Solid State (Over Voltage and Over Current) Built-In Secondary Protection
Physical Connector	RJ45 (Impedance Selectable)/Mono-mode Fiber Optic

T1 RBS	
Type	Expansion Card for T1 E1 ISDN PRI
Bit Rate	1544 kbps +/- 50ppm
Line Coding	AMI and B8ZS
Framing	D4, ESF
Line Signaling	FXS Loop Start, FXO Loop Start, FXS Ground Start, FXO Ground Start, E&M (Immediate, Wink Start, Wink Start FGD)
Digit Dialing	DTMF
Alarms	ANSI T1.231
Performance	Solid State (Over Voltage and Over Current) Built-In Secondary Protection
Physical Connector	RJ45 (Impedance Selectable)

CO (TWT- Two Wire Trunk)	
Type	Expansion Card for CO/FCO Interface
Signaling	Loop Start
Loop Limit	1200Ω
Off Hook AC Impedance	600/900/Complex
Pulse Dialing	10/20PPS
DTMF Dialing and Reception	ITU-T Q.23 & Q.24
Return Loss	>18dB
Longitudinal Balance	>50dB

Transmission Level Adjust	Tx Gain: -15dB to +10 dB, Rx Gain:-15dB to +10dB
CLI Reception	DTMF, FSK ITU-T V.23 and FSK Bellcore 202
Call Maturity	Delay and Polarity Reversal
Protection	Over Voltage and Over Current Secondary Protection
Physical Connector	RJ45

COMBAT NET RADIO (RADIO INTERFACE GRID)	
Type	Expansion Card for Radio Interface
Line Inputs	Balanced, Transformer Isolated 1Vrms, 600 Ω
Line Outputs	Balanced, Transformer Isolated 1Vrms, 600 Ω
PTT Output	Opto-Isolated Normally OPEN, 1A max
Physical Connector	Centronix

E&M	
Type	Expansion Card for E&M Interface
E&M Signaling	Type IV (Originated on E-lead or on M-lead) and Type V
Speech Interface	2-Wire or 4-Wire
Trunk Seizure Type	Immediate, Immediate + Wink, Seizure Pulse, Seizure Pulse + Wink, Express, Compander Control Signal (CCS)
Signaling	Pulse Dial - Pulse 10PPS, Pulse 20PPS Tone Dial - DTMF
AC Impedance	600Ω
Return Loss	20 dB
Transhybrid Loss	20dB against Configurable Balance of 600Ω or AT&T Complex Impedance
Transmit Gain	+/- 1 dB
Receive Gain	+/- 1 dB
Physical Connector	RJ45

DKP (DIGITAL STATION)	
Type	Expansion Card for Digital Key Phone Ports
Signaling	Proprietary Digital (2B + D)

Interface	Single pair for Speech, Signaling, and Power
Loop Limit	100Ω
Speech Level	Adjustable Tx and Rx Gain for Handset and Hands-Free
Protection	Over Voltage Secondary Protection
Physical Connector	RJ45

ENVIRONMENTAL	
Operating Temperature	0°C to +45°C (32°F to113°F)
Operating Humidity	5-95% RH, Non-Condensing
Storage Temperature	-20°C to +70°C (-4°F to +158°F)
Storage Humidity	0-95% RH, Non-Condensing

SLT (ANALOG STATION)	
Type	Expansion Card for Analog Extensions
Signaling	Loop Start
Dialing	DTMF and Pulse (10/20PPS)
Off Hook AC Impedance	600/900/Complex
Off Hook Current	39mA Max
Loop Limit	1800Ω Max (Excluding Telephone)
On-Hook Voltage (Tip/Ring)	-48V Nominal
DTMF Detection	ITU-T Q.24
Return Loss	>18dB
Longitudinal Balance	>50dB
Transmission Level Adjust	Tx Gain: -3dB to +6dB, Rx Gain: -3dB to +6dB
Ringing	Trapezoidal 60VRMS/25Hz and Sinusoidal 52VRMS/25Hz
REN	3
CLI Presentation	DTMF, FSK ITU-T V.23 and FSK Bellcore 202
Protection	Over Voltage Secondary Protection
Physical Connector	RJ45/Centronix*

*For ETERNITY LE CARD SLT48

POWER SUPPLY		
Product	SARVAM UCS SME (ETERNITY GENX)	SARVAM UMG (ETERNITY GENX)
Inputs	Option 1 (Mains): 100-240 VAC, 47-60 Hz (250W)	
	Option 2 (DC): 48VDC + 20% to -15% (250W)	
Power Consumption (Typical with 30% (72) SLT Off-hook)	170 Watt	

LED Indications	4 LEDs for Power Supply Health Status

MECHANICAL

Specifications	SARVAM UCS SME/UMG (ETERNITY GENX)
Dimensions (W x H x D)	436.5 x 226 x 173.5 mm
Unit Weight	5 Kg (11.02lbs)
Shipping Weight	8 Kg (17.63lbs)
Type of Shipping Material	Corrugated Box
Installation	19" Rack Mount with 4U Enclosure Wall Mount Table Top

COMPLIANCES

EMI/EMC	Conducted Emission	CISPR 22
	Radiated Emission	CISPR 22
	Harmonic Current Emission	IEC 61000-3-2
	Voltage Flicker	IEC 61000-3-3
	Electro-static Discharge	IEC 61000-4-2
	Radiated Susceptibility	IEC 61000-4-3
	Electrical Fast Transient	IEC 61000-4-4
	Surge	IEC 61000-4-5
	Conducted Immunity	IEC 61000-4-6
	Power Frequency Magnetic Field	IEC 61000-4-8
	Voltage Interruption and Dips	IEC 61000-4-11
FCC	Conducted Emission	FCC Part 15 Sub-Part B
	Radiated Emission	FCC Part 15 Sub-Part B
EC Directives	R&TTE 1999/5/EC	
	LVD 2014/35/EU	
	EMC 2014/30/EU	
Safety	EN 60950-1:2006 + AM1:2010 + AM12:2011 + AM2:2013	
Environment Test	Cold Test	IS:9000 Part 2/Section 4
	Dry Heat Test	IS:9000 Part 3/Section 5
	Damp test	IS:9000 Part 5/Section 1

#: For compatibility and use of Matrix GSM products (2G and 4G) in Russia and Iran province connect with Matrix sales or technical support team

ABOUT MATRIX

Established in 1991, Matrix is a leader in Security and Telecom solutions for modern organizations. Matrix offers a comprehensive range of solutions for IP Video Surveillance, Access Control, Time-Attendance, and Telecom applications. The solutions are designed to meet the communication and security requirements of large enterprises having offices in multiple locations, SMEs, and SMBs.

As an innovative, technology-driven, and customer-focused organization, Matrix is committed to keeping pace with the revolutions in the Security and Telecom industries. With around 40% of its human resources dedicated to the development of new products, Matrix has launched over 60 cutting-edge products and solutions.

IP Video Surveillance includes solutions like Video Management Systems, Network Video Recorders, and IP Cameras. Likewise, solutions in Access Control and Time-Attendance include Visitor Management Solutions, Elevator Access Control, Panels, Door Controllers, and Readers.

We offer Telecom Solutions such as Unified Communications, IP-PBX, Universal Media Gateways, VoIP and GSM Gateways, and Communication Endpoints. All these solutions are feature-rich, reliable, and conform to international standards.

MATRIX
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