STAX-4

1RU Multi-Modem with Redundant Power

Waveform Selections (M7XC)

Multi-Mission Waveforms

- DVB-S2X TX
- DVB-S2X RX
- DVB-S2X Dual RX
- ACM FlexLDPC TX
- ACM FlexLDPC RX
- ACM FlexLDPC 16 RX Channels
- Segmented 16 TX Channels
- Segmented 16 RX Channels
- Spread Spectrum (DSSS)
- TRANSEC (AES-128/256)

Other Datum Capabilities

- Turbo Product Code (TPC)
- Viterbi-Reed Solomon
- Smart Carrier Cancelling
- Smart Hub-Cancelling

Applications

- Hub-Based Central Control
- Cellular Backhaul
- Oil & Gas
- Emergency Response
- Government / Defense
- Enterprise
- IP Trunking

STAX-4 Description

The STAX-4 1RU chassis platform is a versatile rack-mountable telco grade modem platform that offers up to 4 high speed modulators and 64 demodulators with a maximum 400Msps TX and 400Msps RX capacity.

STAX-4 is a standard 1RU high, 19" wide multi-function chassis. It is a high-density rack-mount modem / compute platform that is typically deployed at a hub or teleport. The STAX-4 platform can be configured to modulate up to 4 independently tuneable, independent waveform, high speed carriers and up to 64 independent demodulators in a single 1RU platform. Available in Modulator and Demodulator only Configurations.

STAX-4 offers optional dual independent power input with up to two (2) load sharing redundant power supplies. Each power supply can support 100% of the load of the chassis and all installed modems or compute modules.

The chassis can be outfitted with up to four (4) M7XC software defined modems. Each modem has independent connections on the STAX-4 chassis for TX, RX, Monitor and Control, User Data and Modem Reset.

The STAX-4 provides independent status LED indicators for each installed M7XC and unit status LED indicators for the system including redundant power supplies and overall system status.

Because the STAX-4 provides indepenent connections to all installed modems, modulators or demodulators, the STAX-4 is 100% compatible with the M7XC software defined modem in all modes of operation. This includes but not limited to All Waveforms, TRANSEC, Carrier Cancelling, Monitor and Control, Symbol Rates, Data Rates and Multi-Carrier operation.

STAX-4 Multi-Modem Chassis

Standard 1Ru Rack Mountable Chassis: . IEC 60297/ EIA-310-D compliant

Two (2) Independent Power Input - IEC 60320 C13 Male connector

Up to Two (2) Independent Power Supplies: 80 - 264 VAC source input with 24VDC 10A maximum output per supply. Each supply can support up to 4 M7XC modems and STAX-4 ancillary load

Load Sharing Power Supplies: Load sharing provides 100% redundancy without taking the modems offline

Independent Modem Connections – For each installed M7XC independent TX, RX, Monitor and Control Ethernet, and User Data Ethernet

Front Panel LED Indicators – Up to four (4) independent LED sub-system status inticators that replicate the LED indications on a standard M7XC. System level LED indicators for unit alarm and power supplies.

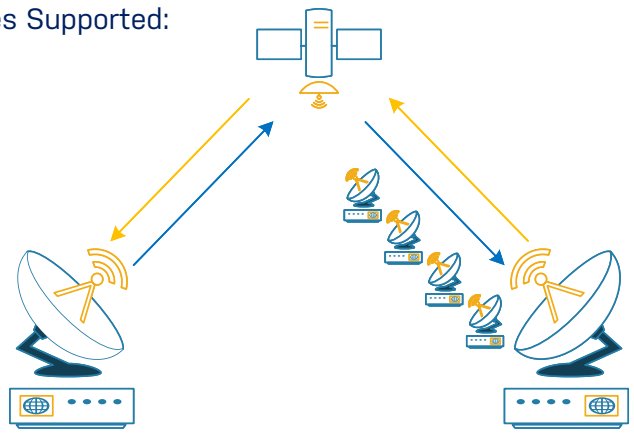
External 10MHz Reference Input – Single common High Stability 10/50 MHz Reference Input

Certification and Compliance

CE Certified	RoHS
EN 55032 Emissions	MIL-STD-810G M514.7 Vibration
EN 55035 Emissions	MIL-STD-810G M516.7 Shock
EN 61000-3-2/3 Elect. Compatibility	MIL-STD-810H Altitude
EN 62368-1 Safety	MIL-STD-810G RE102 Radiated Emissions
	MIL-STD-461G CS118 Electrostatic Discharge

Major Network Architectures Supported:

- Point-to-Multipoint
- Point-to-Point
- Mesh
- Hybrid



Specifications

Front Panel

Per Modem Indicators	Xmit On, RCV Lock, RCV Errs, LNB Power, Power, Alarm, Online
Unit Indicators	Unit Alarm, PS1, PS2

Network Interface

LAN Ports (User Data)	1 port per installed modem Auto Crossover / Auto-Neg RJ-45 "F"
Monitor and Control	1 port per installed modem Auto Crossover / Auto-Neg RJ-45 "F"
All other Specifications	Per M7XC Datasheet

Modulator

Connector	1 port per installed modem SMA Type (F)
Output Ret Loss (dB) / VSWR	> 14 / 1.5:1
All other Specifications	Per Installed Modulator

External Reference

Connector	BNC 50 ohm (F)
Int/Ext Ref Frequency (MHz)	10 or 50
Ext Ref Level Output (dBm)	-10 to +10
Ext Ref Input Max (dBm)	+20
SMA-Type, 50 ohm (F) Connector	[N-Type (F) Adapter Opt
Ext Ref Return Loss (dB)/VSWR	(16)/1.4:1 @ 10MHz Typical

Demodulator

Connector	1 port per installed modem SMA Type (F)
Output Ret Loss (dB) / VSWR	> 14 / 1.5:1
All other Specifications	Per Installed Demod
LNB Output Power	Off, +13 or +18 VDC
	500ma Max, per RX Port

Advantages

High Density Modem Sub-System
Up to 4 Modulators and 64 Demodulators in 1 RU
SWaP Reduction
High Reliability Dual Power Source / Dual Power Supply
Shipping and Logistics Savings

Environmental and Physical

Unit Power Input	Input 80 - 264 VAC, 10A Max
Unit Power Rating	2 M7XC < 105 Watts Max 4 M7XC < 175 Watts Max
Power Connector Type	IEC 60320 C13 Male connector
Operating Temp Range	-20o C to +60o C, 99% Humidity (Non-Condensing)
Storage Temperature	-20o C to +70o C, 99% Humidity (Non-Condensing)
Vibration	Mil-Std 810H, 461
Size (inch) Fan Version	19" (W) x 19.5" (D) x 1.75" (H) 482 (W) x 495 (D) x 44 (H) (mm)
Weight (lbs.)	< 15 lbs / 6.8 kg, Fully Populated
In/Out Reference	Int 10 or 50 MHz @ Nom -3 dBm 1x10-8 OCXO, 2x10-7 aging (BUC and LNB 10 MHz Reference)
Grounding Lug	2 on Chassis Rear

DATUM SYSTEMS

ESATCOM INC

ESATCOM INC.
3628 Francis Lewis Blvd.
Flushing, NY 11358
www.esatcom.com
Tel: 718.799.0084
Email: sales@esatcom.com