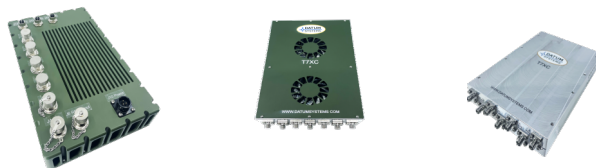




T7XC & T7XC-ODU

Extra Compact Software Defined Tropo Modem



Key Features

DVBS2X Standards
Data Rates to 529 Mbps (98 Msps)
L-Band 2 Port TX/Up to 4 Port RX
QPSK/8PSK/8APSK thru 256APSK
Modcods per ETSI EN-302-307
TX/RX Roll-Off Factors of 20-45%
Adaptive and ACM Control
Auto-Link Power Control
Compact and Lightweight
Mil-Std-810G/H for Shock and Vibe
Highest 2 Sigma/Tau Performance
4 Port 10/100/GbE Layer 2 Interface
VLAN and QoS
Superior Multi-path Performance
Web Browse, SNMP & Bridge Modes

Applications

Fixed and On-the-Move
Offshore Platforms
Beyond LOS Microwave
Troposcatter
Supports C, X, Ku and Ka-Band



T7XC Description

The Datum Systems T7XC Troposcatter Modem represents a major innovation in waveform design concepts that have been proven and refined for over 25 years. The T7XC Tropo Modem uses advanced FPGA and VHDL implementations, centered around the latest Patented Best-of-Class Frequency Domain Combiner/Equalizer to get the industrys best performance.

The T7XC Tropo Modem was designed for independent transmission and reception of modulated carriers for **Single, Dual** and **Quad Diversity** Modes of Operation.

DVB-S2X - The best Tropo performance using DVB-S2X and it's Extensions. DVBS2X supports 16k and 64k FEC Block Codes for maximum error correction and the largest selection of Modcod's for the smoothest ACM Modcod transitions.

Fast Adaptive Coding Modulation - Fast ACM provides a significant and immediate increase in throughput by utilizing link margin provided for worst case scenarios and increasing link availability by adjusting the available ModCod's automatically.

TRANSEC AES-128/192/256 Encryption - AES-128/192/256 Core with Optional FIPS140-3 Level 3 Certification (in process).

Tools - The T7XC provides superior Link & Traffic support capabilities with Built-in Spectrum Analyzers on all 4 RX Ports, and a consolidated live 4 Port view of all inputs. The T7XC also provides PER and FER stats, and live link traffic stats by test packet generation

1:1 Redundancy - Built-in control for low cost implementation

Contact

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sales@datumsystems.com

Specifications

Transmit Modulator/s

Modulator Outputs	1 or 2 Freq Independent Modulations
Min Symbol Rate	256 Ksps
Max Symbol Rate	98 Msps
Max Data Rate	Up to 529.9 Mbps (ModCod Dep)
Freq Range	L-Band 950 to 2250 MHz, 1 Hz Steps
Output Level	-35 to +5 dBm, 0.01 dB Steps
Output Level Accuracy	+/-0.5 dB over Freq, Level and Temp
Output Impedance	50 ohms, SMA (Female)
Output Return Loss	>12 dB
Output Off Isolation	>60 dB
Output Spurious	<-60 dBc/4khz BW Relative to Total Carrier Power
Phase Noise	Meets Mil-Std-165B
Mod Roll-Off Factor %	20, 25, 30, 35, 40, 45 (%)
Modulation Types	QPSK, 8PSK, 8APSK, 16APSK, 32APSK, 64APSK, 128APSK, 256APSK
FEC Type	DVBS2X per ETSI EN-302-307
Code Rates	DVB-S2X Preferred Modcodes Shown QPSK: 1/4, 13/45, 1/3, 2/5, 9/20, 1/2, 11/20, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8APSK: 5/9-L, 26/45-L 16APSK: 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5, 3/5-L, 28/45 23/36, 2/3-L, 2/3, 25/36, 13/18, 7/9, 4/5, 5/6, 77/90, 8/9, 9/10 32APSK: 2/3-L, 32/45, 11/15, 3/4, 7/9, 5/6, 8/9, 9/10 64APSK: 32/45-L, 11/15, 7/9, 4/5, 5/6 128APSK: 3/4, 7/9 256APSK: 29/45-L, 2/3-L, 31/45-L, 32/45, 11/15-L, 3/4
FEC Block Sizes Short:	16k, Normal: 64k (Bits)
Adaptive ModCod	ACM/Adaptive Data Rate
BUC Ref Level	+3 dBm, +/-2 dB
BUC Ref Freq	10/50 MHz Selectable
Modem Control Channel	Remote Low-Overhead Channel
Bridge	Remote GUI and 3rd Party Access

Unit

Input Power	+15 to +55 VDC
Reference	10/50 MHz, 2x10-8 OCXO In/Out
Ext Ref Input Level	-10 dBm to +10 dBm
Local & Remote Control	SNMP and Web Browser
MCC & Bridged O/H Ch	Local to/from Remote Connectivity
IP & Data Interface	Up to 4 Gbe Ports, User Defined
VLAN	ID Assignment, Filtering, Pass-Thru
QoS Management	Priority, DHCP, Strict, WRED, Custom
Adv Link/Event Monitoring	Es/No, RF Level, Pkt & Link Stats
Modem Chassis	7" (L) x 4.6" (W) x 1.5" (H)
Modem Weight	~2 lbs

Receive Demodulator/s

Diversities	Single, Dual or Quad
Maximal Ratio Combiner	Freq Domain Combiner/Equalizer
Min Symbol Rate	256 ksps
Max Symbol Rate	98 Msps
Max Data Rate	Up to 529.9 Mbps (ModCod Dep)
Freq Range	L-Band 950 to 2250, 1 Hz Steps
Freq Acquisition Range	±SR/4500
Min Input Level (dBm)	10 Log(SymRate) – 150 = Lvl
Max Input Level (dBm)	10 Log(SymRate) – 80 = Lvl
Max If Input Power Density	+20 (dBc/Hz)
Max Total Power (dBm)	+10
Input Impedance (ohm)	50 ohms, SMA (Female)
Input Return Loss (dB)	> 12
Input Phase Noise	Meets Mil-Std-165B
Mod Roll-Off Factor %	20, 25, 30, 35, 40, 45 (%)
Modulation Types	QPSK, 8PSK, 8APSK, 16APSK, 32APSK, 64APSK, 128APSK, 256APSK
FEC Type	DVBS2X per ETSI EN-302-307
Code Rates	DVBS2X Preferred ModCodes Shown QPSK: 1/4, 13/45, 1/3, 2/5, 9/20, 1/2, 11/20, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8APSK: 5/9-L, 26/45-L 16APSK: 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5, 3/5-L, 28/45 23/36, 2/3-L, 2/3, 25/36, 13/18, 7/9, 4/5, 5/6, 77/90, 8/9, 9/10 32APSK: 2/3-L, 32/45, 11/15, 3/4, 7/9, 5/6, 8/9, 9/10 64APSK: 32/45-L, 11/15, 7/9, 4/5, 5/6 128APSK: 3/4, 7/9 256APSK: 29/45-L, 2/3-L, 31/45-L, 32/45, 11/15-L, 3/4
DVBS2X FEC Block Sizes	Short: 16k, Normal: 64k (Bits)
Adaptive ModCod	ACM/Adaptive Data Rate
LNB Ref Level	+3 dBm, +/-2 dB
LNB Ref Freq	10/50 MHz Selectable

Operating Temp Range	-40°C to +70°C
Storage Temp Range	-40°C to +80°C
Humidity	99%, Non-Condensing
MTBF	180k Hours
CE	Certified
RoHS	Compliant
Mil-Std-810 G/H	Compliant
AES-128/192/256	Compliant



T7XC & T7XC-ODU

Extra Compact Software Defined Modem



T7XC-IDU Small -Form-Factor Modem

T7XC Environmental and Physical

Unit Power	Input 15-55 VDC, < 80 Watts
Power Connector Type	Phoenix
Operating Temp Range	-40o C to +70o C, 99% Humidity
Storage Temperature	-40o C to +80o C, 99% Humidity
Vibration	Mil-Std 810H, 461
Size (inch) Fan Version	7" (L) x 4.6" (W) x 1.5" (H)
Non-Fan Version	7" (L) x 4.6" (W) x 1.0" (H)
Weight (lbs.)	~ 1
In/Out Reference	Int 10 or 50 MHz @ Nom -3 dBm 1x10-8 OCXO, 2x10-7 aging



T7XC-ODU
Outdoor Modem

T7XC-ODU Environmental and Physical

Environmental Rating	IP65
Unit Power	Input 15-55 VDC, < 80 Watts
Operating Temp Range	-40o C to +70o C
Storage Temperature	-40o C to +80o C
Vibration	Mil-Std 810H, 461
Size (inch) Fan Version	11.2" (L) x 7" (W) x 3.0" (H)
Weight	8 lb
TX & RX Connectors	N Type (F)
In/Out Ref. Connector	N Type (F)
In/Out Reference	Int 10 or 50 MHz @ Nom -3 dBm 1x10-8 OCXO, 2x10-7 aging
Ethernet Data Conn.	M12 (F)
Ethernet M&C Conn.	M12 (F)



T7XC-ODU + Up to 40 Watt Tropo C-Band BUC
Outdoor Package

T7XC/BUC-ODU Environmental and Physical

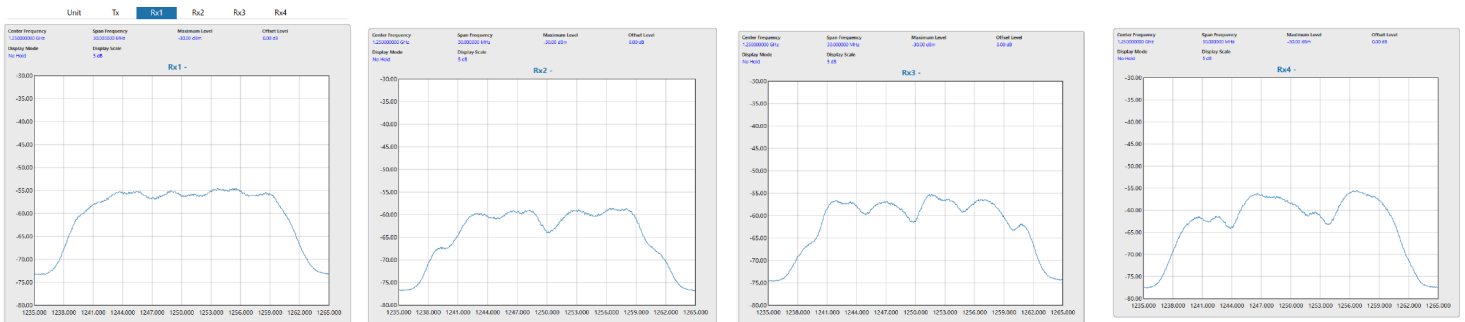
Environmental Rating	IP65
Unit Power	Input 15-55 VDC, 130 Watts (typ.)
Operating Temp Range	-40o C to +60o C
Storage Temperature	-40o C to +80o C
Vibration	Mil-Std 810H, 461
Size (inch) Fan Version	11.1" (L) x 6.94" (W) x 5.2" (H)
Weight	12 lb
TX & RX Connectors	N Type (F)
In/Out Ref. Connector	N Type (F)
In/Out Reference	Int 10 or 50 MHz @ Nom -3 dBm 1x10-8 OCXO, 2x10-7 aging
Ethernet Data Conn.	M12 (F)
Ethernet M&C Conn.	M12 (F)



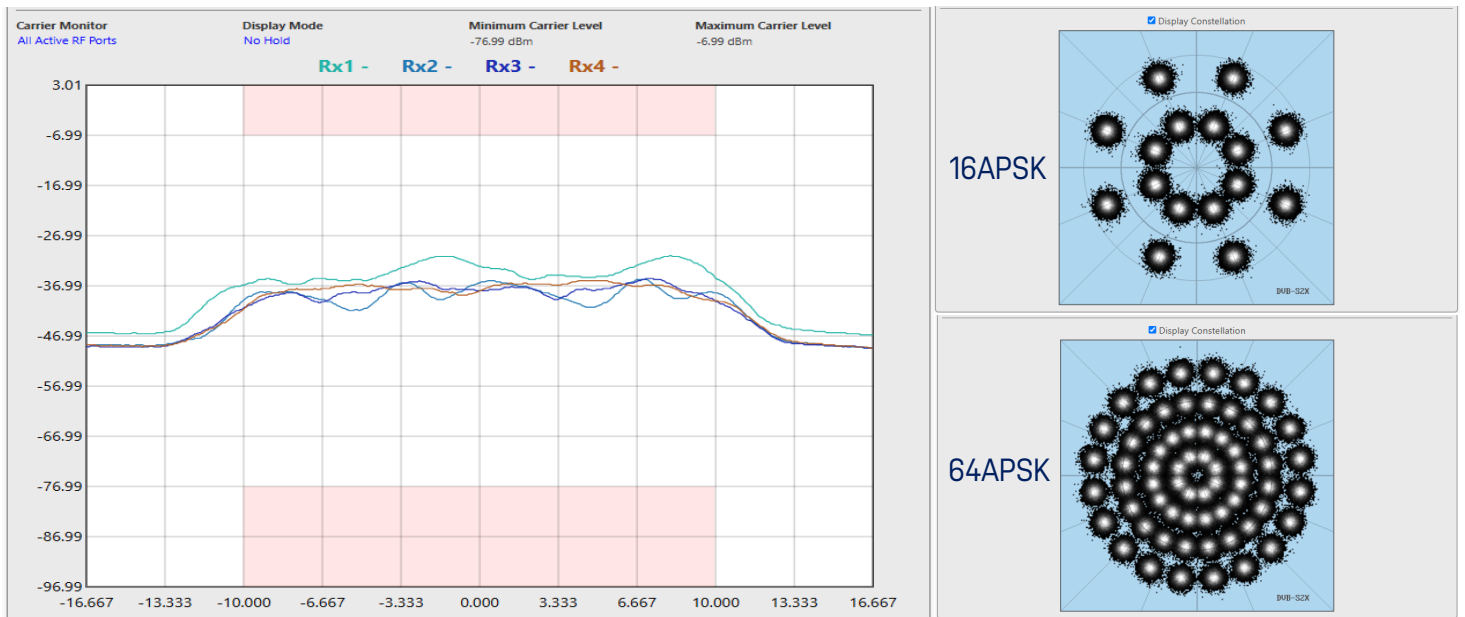
T7XC & T7XC-ODU

Extra Compact Software Defined Modem

Advanced Monitor and Control Capabilities Included



Spectrum Analyzer on all 4 RX Ports



Live Traffic 4 Port Spectrum Analyzer with Occupied Bandwidth & RX Lvl Min/Max View

Constellation Mapping

Additional Mounting Option



STAX-4 1 RU RACK MOUNTING SYSTEM (Holds up to 2 T7XC Modems)



www.datumsystems.com

