C Tech Bilişim Teknolojileri San. ve Tic. A.Ş.

Jamming Resistant SATCOM Modems

FOR

"RELIABLE AND SECURE COMMUNICATIONS"

NATO STANAG 4606 COMPATIBLE

RESILIENT TO JAMMING & INTERFERENCE

ROBUST & SECURE

OVERVIEW

The Electronic Protective Measures (EPM) Modem has been designed to operate on fixed, land-mobile, naval and airborne platforms. EPM Waveform is the key technology for establishing jamming resistant communication links, especially when the communication system is wide open to threats and obstructive interference. The Modem has been implemented by using the Frequency Hopping (FH) EPM Waveform, which has a strong rejection and resilience against jamming and a firm protection against interception.

Use of Adaptive Coding Modulation (ACM) techniques enable system operations with optimum modulation and coding options, under various threat conditions, allowing a bandwidth efficient utilization of the frequency spectrum. FH sequences in the IF band are Transmission Security (TRANSEC) dependent and the network control and management messages are Network Security (NETSEC) protected. Modem Firmware (FW) is easily upgradable due to the employment of a DSP and FPGA based design, which is flexible enough to implement various new waveforms. Operation of the modem is easily managed, configured and monitored through a user friendly interface.

Operations using transparent payloads, in both star and mesh network topologies, are possible, in the Super High Frequency (SHF) (C, X, Ku & Ka) and Extremely High Frequency (EHF) SATCOM Bands.

FEATURES

Mechanical Design: The FH EPM Modem is offered in various form factors, based on the military and commercial operational needs, including following configurations: a 19" rack compatible single channel, a multi-channel and/or in a customized casing for On The Move (OTM) applications.

Control and Monitoring: A user friendly interface enables setting up and control of all the modem features, as well as monitoring the run time parameters of each communication unit. Electronic Support Measures (ESM) and Emissions Control (EMCON) can also be managed through the same user interface. The time reference signal can be input to the system either automatically by a GPS unit, or applied externally.

TRANSEC/NETSEC: NATO or any other National Algorithm can easily be installed. Each modem channel has its own embedded TRANSEC/NETSEC unit that generates pseudo-random sequences to form frequency hopping patterns.

Network and System Integration: The centralized network management, controlled by a separate "Controller Modem", sets up a mesh network protected by the EPM capability that operates on Orthogonal Frequency Division Multiplexing (OFDM) channels among terminals. The "Auto Synchronization" feature allows the modem to operate in synchronization with the network automatically. Any modem can be set up and used as a network controller modem or a communication channel modem. A communication network with strong resistance to jamming and interference as, well as with a low probability of interception, can be established by using multiple transponders and multiple coverage spots.

TECHNICAL SPECIFICATIONS

	Multi Channel	Single Channel	Airborne
Width	19"	19"	ATR / ARINC
Height	8U	1U	
Number of Channels	Up to 8	1	1
Waveform	NATO STANAG 4606 Edition 3 compatible		
Modulation	BPSK, QPSK, 8PSK		
Interfaces	o IF Input o IF Output o Ethernet – Management o Ethernet – Data	o Fill Gun Interface o EMCON (EMission CONtrol), ESM, Emergency Zeroize o GPS o External Reference Clock Interface	
IF Frequency	L Band		
Data Rate	20 Kbps - 100 Mbps		
Reference Clock	Internal : 10 MHz	External : 10 MHz	
Operating Temperature	-5°C – +40°C	-30°C – +60°C	-30°C – +55°C
Storage Temperature	-20°C – +60°C	-40°C – +70°C	-40°C – +70°C
Power Input	90 – 250 V AC	90 – 250 V AC 20 – 36 V DC	20 – 32 V DC
Other Features	o High hopping rate o Frequency hopping on wide band o Demand oriented variable data rate o ACM (Adaptive Coding And Modulation)	o Accommodation up to four waveforms o Compatible with MIL STD 461 and MIL STD 810 o Fast acquisition	

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