

5300-Series

High-speed HF Modems

- **High-speed HF Modems**
- **RT5300 is rugged (MIL-STD-810), and completely immersible**
- **TW5300 for professional usage**
- **Forward error correction**
- **Adaptive ARQ control**
- **Selective ARQ protocol**
- **3000 bps uncompressed data throughput**
- **Supported by DWC's network messaging software**
- **Point-to-point or point-to-multi-point messaging**
- **Can work with FED-STD-1045A ALE for best HF channel selection**

DWC's 5300 is an advanced digital modem using a waveform and protocol (X-Clover) specially designed to provide reliable high speed data transfer using standard HF radio equipment. The 5300 is offered in two different versions depending on the system configuration. The TW5300 and RT5300 are stand-alone models for connections to a computer. These configurations are described below. The TW5300 is a compact desktop unit designed for general purpose usage. The RT5300 is identical to the TW5300 except that it is packaged in a rugged waterproof case for use in harsh environments.

The modems can be in a point-to-point system to send data messages, or in conjunction with Datron's DTS-Gateway software to allow data transmission, message store and forward, chat and broadcast modes, and other networking functions. It is capable of delivering error-corrected and uncompressed data, including all overhead, over an HF channel at over 2000 bits per second. DTS-Gateway provides for both station-to-station and station-to-multistation operation, and includes FED-STD-1045A ALE for automatic selection of the best frequency for operation.

The 5300 modem protocol uses advanced processing techniques to eliminate errors caused by the severe distortion and fading normally present on HF channels. It is capable of delivering error-corrected and uncompressed data, including all overhead, over an HF channel at over 3000 bps. A sophisticated compression algorithm significantly increases the perceived data throughput. Adaptive control automatically matches the data modulation format to existing channel conditions to insure that the optimum data mode and speed is selected.

5300 modems use a selective, 2-level, bi-directional, ARQ protocol, and all transmitted data is encoded using one of four levels of Reed-Solomon error correction coding. Transmission is done in blocks, and only those packets that cannot be fixed with the Reed-Solomon coding are repeated.

Data may flow in either direction at any time, thus reducing overhead and improving the efficiency of ARQ operation. A selective, 2-level ARQ format is used to send data, and its timeframe automatically adjusts to match the data volume to be sent.

5300 MODEM SPECIFICATIONS

PARAMETER	
Type	1. TW5300. Stand-alone DSP desktop model with FLASH memory requiring 12 – 18 Vdc @ 100mA> RS232 link to data terminal
Data rate	Up to 3000 bps, uncompressed
Transmit audio	-30 to 0 dBm, 600 ohm
Receive audio	-30 to 0 dBm, 600 ohm
Data BW	500 – 2500 Hz
Modulation	Differential phase/amplitude; BPSM, QPSM, 8PSM, 8P2A, 16P4A
Modes	Binary file transfer, chat mode
Waveform	Proprietary: X-CLOVER ((CCIR: 2K0HJ2DEN)
Error correction	Reed-Soloman encoding
Path correction	2-level ARQ; adaptive and selective

Note: all specifications subject to change without notice



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