

SPiRiT MIL-STD-110A Data Modem

SPiRiT MIL-STD-188-110A data modem software for low cost applications complies with MIL-STD-188-110A (serial tone, para 5.3) standard and supports data rates from 75 to 2400 bps (coded rates) and 4800 bps (uncoded) with 3 possible interleavers – from zero to 4.8 seconds.

The modem is intended for communication over HF channels under severe conditions in the multi-ray and fading environment. It can be used both in tactical and civil applications.

The modem incorporates powerful equalization, tracking and forward-error-code correction schemes to work in severely degraded HF environment with fast fading (up to 10 Hz), big multi-path spread and high number of rays. Extended channel quality information makes proper selection of the data rates easier. The modem allows using power effective nonlinear schemes in the radios.

Low own processing delay for zero and short interleaver settings allows to use standard or proprietary vocoders for voice communication over HF.

Specifications

PLATFORM	TI C54xx/C55xx
Peak MIPS	90
Program Memory, KWords	26
Data Memory, KWords	39

Performance Data

Rates	75, 150, 300, 600, 1200, 2400 (coded), 4800 (uncoded)
Interleavers	0., 0.6 and 4.8 sec
Multipath tolerance	12 msec @ 75 bps 8 msec @ 150...1200 bps 6 msec @ 2400 bps
Acceptable fading bandwidth	50 Hz @ 75 bps 10 Hz @ 150...600 bps 6 Hz @ 1200/2400 bps
Frequency correction	+/-75 Hz
Frequency drift	3.5 Hz/sec slope
Clock offset	+/-100 ppm
Bandwidth	3 kHz

Benefits

- Easy portable
- Highly optimized

Key Features

- MIL-STD-188-110A compatible
- Performance better than required by the standard

Applications

- HF modems
- Maritime, long-haul digital communications
- Tactical voice and data communication equipment

Availability

- PC Now
- TI C54xx Now
- TI C55xx Now
- TI C64xx Now

Features

- Rates: 75...2400 bps
- Interleavers: 0, 0.6, 4.8 sec
- Autobaud capability
- Supports frame synchronization even in the middle of reception
- Special mode for STANAG 4197 or another vocoder
- Suppressed multipath up to 12 msec
- Operational range from -10 dB SNR @ 75 bps, AWGN
- Specially designed for fast tracking: frame rate up to 60Hz
- Provides seamless interface with SPiRiT proprietary vocoders
- Works with big intermodulation distortions (up to 15 dB) and C-class amplifiers

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