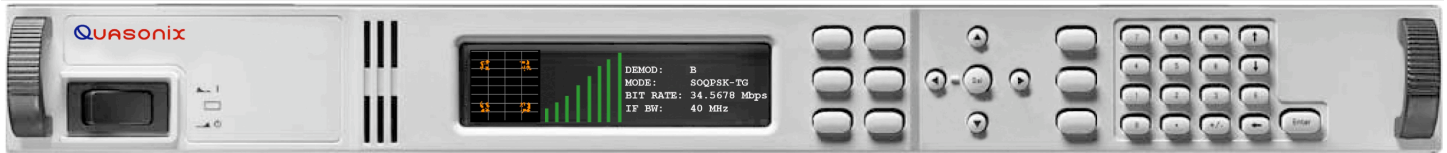


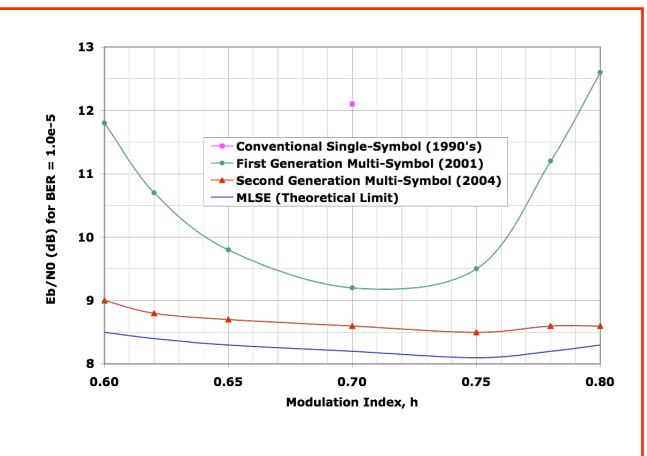
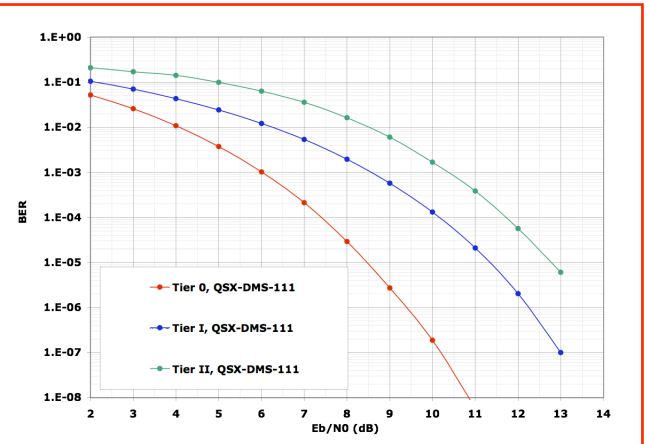
Multi-Mode Trellis Demodulator



- True Trellis Demodulation in all ARTM Modes**
 Optimal performance for ARTM Tier 0, I and II is achieved only by trellis detection. Quasonix offers the only demodulator in the market which provides true trellis detection in all three modes.
- 3.5 dB Improvement in PCM/FM Performance**
 Second-generation multi-symbol demodulator improves BER performance by 3.5 dB over the best single-symbol demodulators, to within 0.2 dB of the theoretical limit.
- Modulation Index Tracking for PCM/FM**
 Unlike first-generation multi-symbol demodulators, Quasonix' design maintains its superior BER performance even if the received signal's modulation index changes by up to $\pm 15\%$ (patent pending).
- Best SOQPSK Detection in the Industry**
 Only Quasonix offers trellis detection for Tier I (SOQPSK-TG), yielding improvements of 2 dB or more over the competition's single-symbol detectors.
- Rapid Synchronization**
 Synchronizes up to 100 times faster – and maintains sync at lower signal-to-noise ratios – than other ARTM demodulators in the market.
- Integrated Bit Synchronizer**
- Bypassable De-Randomizer**
 Standard IRIG-106 fifteen-stage de-randomizer.

Optional dual-demod configuration provides two complete multimode demodulator / synchronizers in just 1U of rack space.

Utilizing the built-in interfaces to the RF Networks Model 2241 Diversity Branch Selector (DBS), a complete two-channel DBS system requires only 2U (3.5") of rack height.



True Trellis Demodulation in all ARTM Modes... Only at Quasonix!

Quasonix provides design, development, and manufacturing of high performance communications systems. We are industry leaders in spectrally efficient modulations such as SOQPSK, which was first conceived and defined by the founder and president of Quasonix.

Specifications

Characteristic	Specification
Size	Airborne: 3 cubic inches, 2.0" x 3.0" x 0.5" Rackmount: 1U 19-inch rack chassis Custom configurations on request
Modulation types	ARTM Tier 0 (PCM/FM) ARTM Tier I (SOQPSK-TG) ARTM Tier II (ARTM CPM) Legacy suite, including <ul style="list-style-type: none"> o BPSK o QPSK o Offset QPSK (OQPSK) o Asymmetric QPSK (AQPSK) o Unbalanced QPSK (UQPSK) o Asymmetric Unbalanced QPSK (AUQPSK) o Digital PM
IF input frequency	70 MHz
IF bandwidths	250 kHz, 500 kHz, 1 MHz, 2 MHz, 4 MHz, 10 MHz, 20 MHz, 40 MHz Automatic selection based on modulation type and data rate, with manual override
Bit rates	Tier 0: 30 kbps to 22 Mbps in 1 bps steps Tiers I and II: 500 kbps to 44 Mbps in 1 bps steps
Control interface, airborne configuration	Three-wire serial port, 115.2 kbaud
Presets, airborne configuration	Four, selectable via 2 pins on MDM-15 connector. Both pins left open cause unit to power up in last powered state.
Synchronization time, typical	Tier 0: 250 bits @ 0 dB Eb/N0 Tier I: 385 bits @ 2 dB Eb/N0 Tier II: 2,800 bits @ 2 dB Eb/N0
Acquisition threshold	Tier 0: -2 dB Eb/N0 Tier I: 0 dB Eb/N0 Tier II: 2 dB Eb/N0
Deviation meter	Deviation reported over serial interface
Signal interfaces	Serial data with separate synchronous clock, TTL levels
De-randomizer	15-stage LFSR, per IRIG 106. Selectable for bypass or enable
DC power input, airborne configuration	22 to 32 VDC, 700 mA typical

Optional Features

Forward Error Correction

Quasonix offers a variety of forward error correction schemes for the QSX-DMS, supporting nearly error-free operation at Eb/N0 as low as 2 dB.

Adaptive Equalizer

If your channel is plagued by multipath, an adaptive equalizer may provide dramatic improvements in data integrity. If this sounds like your application, contact us for quote.

