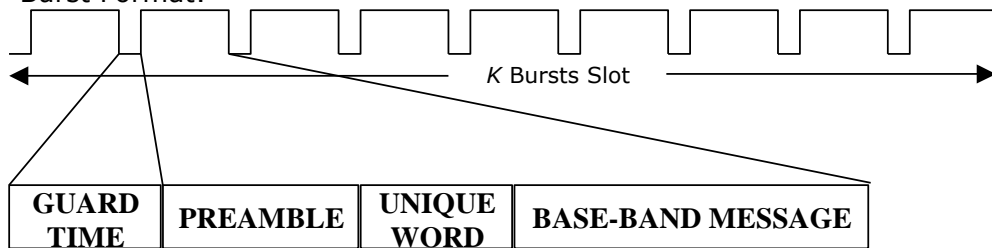## SPECIFICATIONS

Continuous mode:
- Modulation: BPSK/ QPSK
- Analog Interface: IQ at 50kHz, 1.5V$_{DC}$, 70-370mVp-p
- Ambiguity decoder: Differential Decoding
- Rate ½ FEC (Viterbi decoder) with constraint length K=7 for data rates (bps):
  - BPSK: 300, 600, 720, 1200, 1440, 2025, 2400, 2700, 3600, 4800, 5400, 9600, 10800
  - QPSK: 1200, 2700, 2880, 3600, 4800, 9600, 10800, 19200
- Concatenated FEC with Rate ½ Viterbi decoder (constraint length K=7) and Reed-Solomon decoder RS(126, 112, 7) as per IESS-308 with interleaving depth of 4 for data rates (bps):
  - BPSK: 2400, 1200, 600
  - QPSK: 2880
- BER: 1×10^{-6} at E_b/N_0 = 6.1 dB (Without RS), 1×10^{-6} at E_b/N_0 = 4.1 dB (With RS)
- De-scrambler: CCITT V.35
- Built-in I/Q imbalance compensation and E_b/N_0 indication
- Data interface: TTL, Synchronous, data valid on rising edge of clock
- Size: 3"x3"
- Power consumption: 1W (operational) and 1.5W (programming) from 5V dc supply
- Operating temperature and humidity: 0 to 50°C, 95% RH at 45°C
- Processor: TMS320F2811
- Integration: Polarized dual row connectors and control lines for power save/ down

BPSK				QPSK			
Datarate (bps)	Threshold E_b/N_0 (dB)	Acquisition range (kHz)	Acquisition time (s)	Datarate (bps)	Threshold E_b/N_0 (dB)	Acquisition range (kHz)	Acquisition time (s)
1200 to 10800	3.5	±5	4	19200	3.5	±2.5	5
600 to 720	5.0	±5	4	10800	4.0	±2.5	5
300	6.0	±2.5	8	9600	4.5	±2.5	5
				4800	5.0	±2.5	5
				2880 to 3600	5.5	±2.5	6
				2700	6.0	±2.5	6
				1200	6.0	±1.25	8

Burst mode:

- Modulation: BPSK/QPSK
- Data rate (bps):
  - BPSK: 300, 600, 1200, 2400, 2700, 4800, 5400, 9600
  - QPSK: 300, 600, 1200, 2400, 2700, 2880, 3600, 4800, 9600
- Analog Interface: IQ at 50 kHz, 1.5V_{DC}, 90-280mVp-p
- FEC: Rate ½ (Viterbi) decoder with constraint length $K=7$
- Error-free burst performance: 99% @ 7dB E_b/N_0
- De-scrambler: Synchronous descrambler, with polynomial $1+X+X^{15}$
- Data interface: TTL, Synchronous, data valid on rising edge of clock
- Size: 3"x3"
- Power consumption: 1W (operational) and 1.5W (programming) from 5V dc supply
- Operating temperature and humidity: 0 to 50°C, 95% RH at 45°C
- Processor: TMS320F2811
- Integration: Polarized dual row connectors and control lines for power save/ down
- Acquisition range:
  - BPSK: ±4.7kHz for 300bps, 600bps and ±5kHz for other bitrates
  - QPSK: ±2.3kHz for 300bps, ±4.7kHz for 600bps, 1.2kbps and ±5kHz for other bitrates
- Burst Format:

MINIMUM GUARD TIME	– 192 bits
PREAMBLE [all zeros]	– 256 symbols (including carrier recovery symbols)
	Preamble - 192 symbols
	Carrier recovery - 64 symbols
UNIQUE WORD	– 64 bits (07EA CDDA 4E2F 28C2)
BASE-BAND MESSAGE	– up to 128 16-bit words

- Burst timing: