



# P300/P300 Turbo

## Satellite Modem



**PARADISE  
DATACOM**

AN INTELEK PLC COMPANY



### OVERVIEW

**P300 and P300 Turbo Satellite Modems can be supplied with a wide range of features offering low rate VSAT to high rate 8PSK TCM/IDR operation. The optional Turbo card offers Turbo Product Code (TPC) operation, which brings the simultaneous benefits of increased coding gain, lower coding delay, and significant bandwidth savings, together with all the versatility of the P300 Series Modem. Field upgradability, reliability and ease of use are customer acclaimed strongpoints of all the P300 Series Modems.**

### FEATURES

- ▶ Highly configurable (field upgradeable) feature set - **See table at rear of datasheet**
- ▶ 4.8kbps to 5.0Mbps in 1bit per second steps
- ▶ 50 to 90Mz (180MHz optional) in 100Hz steps
- ▶ BPSK, QPSK and OQPSK operation (8PSK optional)
- ▶ Multi-rate Viterbi, Reed-Solomon, Sequential and Turbo (options)
- ▶ RS422, V.35 & RS232 interfaces (G.703 and Eurocom D1 interfaces optional)
- ▶ IBS/SMS or IDR framing (optional)
- ▶ Fully variable rate ESC channel for Closed Net plus ESC operation (option)
- ▶ Drop & Insert and Extended Drop & Insert (options)
- ▶ Internal BER tester and Monitor AGC port (option)
- ▶ Automatic Uplink Power Control (AUPC option)
- ▶ Built-in 1:1 Redundancy Controller
- ▶ May be used in 1:N groups up to 1:8 with mixed traffic interfaces

### ASSOCIATED PRODUCTS

- |   |                                |
|---|--------------------------------|
| ▶ P500 1:8 Redundancy Switch                | ▶ P300i Internet Modem         |
| ▶ P310 L-Band Turbo Satellite Modem         | ▶ P310i L-Band Internet Modem  |
| ▶ P311 Tx IF with L-Band Rx Satellite Modem | ▶ Transceivers, BUCs and SSPAs |

A detailed technical specification is available from the



ISO Approved Company



Option	P300 VSAT	P300 IBS	P300 IDR	P300 TCM	P300 USER	Description
Base Modem	✓	✓	✓	✓	✓	BPSK/QPSK/OQPSK, 4.8kbps to 512kbps, 1bps variable rate closed network modem RS422 / V.35 / RS232 selectable interface with 25 pin EIA530 DCE & 37 pin RS449 DCE connectors 50MHz - 90MHz IF interface with 100Hz resolution
Viterbi FEC	✓	✓	✓	✓		Viterbi FEC (to IESS 308/309), rate 1/2, 3/4 & 7/8 in BPSK, QPSK and OQPSK
Turbo FEC (TPC)						P308 Turbo Product Codec (TPC). Including 1/2, 3/4, 7/8, 21/44 & 5/16 rates
Sequential FEC						Sequential FEC (to IESS 312), rate 1/2, 3/4 & 7/8 in BPSK, QPSK, OQPSK
INTELSAT Reed-Solomon		✓	✓	✓		Reed-Solomon outer FEC (to IESS 308/310), with (n, k, t) = (126, 112, 7) (switches to (225, 205, 10) or (219, 201, 9) with 4/8 deep interleaving as required for IDR & TCM/IDR if options are fitted)
Wideband IF		✓	✓	✓		Wideband 50MHz-180 MHz IF instead of 50MHz-90MHz
High Data Rates		✓	✓	✓		Data rates 512kbps - 5Mbps in addition to Base Modem rates
Async ESC		✓	✓	✓		Variable rate ESC channel for Closed Net plus ESC operation High rate IBS/SMS ESC (with IBS/SMS option) Async ESC access to IDR 8k sync ESC channel (with IDR option)
IBS/SMS		✓	✓	✓		IBS/SMS framing (to IESS 309) with low rate Intelsat ESC (to IESS 403)
Drop / Insert		✓	✓	✓		Normal T1/E1 linear order Drop/Insert. D/I can operate with any modem interface, although G.703 is typically required (separate option).
IDR			✓	✓		IDR operation (to IESS 308): Two audio ESC channels Sync 8kbps ESC Four form `C` backward alarms 32/64kbps Aux data in place of one/both audio ESC P1348 Emulation, uses IDR ESC ports to emulate P1348/P1448 cards used in SNG applications Generates 64kbps carrier of 2 x 32kbps ADPCM audio (using IDR ESC Ports for audio interface) or 128kbps carrier of 64kbps data plus 2 x 32kbps ADPCM audio
PRBS Tester			✓	✓		Internal Bit Error Rate Tester (BERT) can run through main data channel, or ESC/Aux channels
8PSK/TCM				✓		8PSK with 2/3 rate Trellis Code Modulation (TCM to IESS 310)
Extended D/I				✓		Independent timeslot re-ordering on Tx & Rx Signalling (CAS for E1 & RBS for T1) Rx Partial Insert for multi-destinational working Timeslot ID maintenance for N=1 to 31 with IBS/SMS or Closed Net plus ESC operation
Custom Features				✓		Arbitrary `n` & `k` for Reed-Solomon (with Reed-Solomon option) Custom & Min O/H framing modes (with IBS/SMS or IDR options) Custom allocation of IBS/SMS overhead between Async ESC / sync Aux channels (requires IBS/SMS option AND IDR option to provide Aux Port)
Monitor / AGC						Demod Rx carrier signal level monitor 0-10V Analogue output of carrier signal level, Eb/No, or Rx offset frequency (in addition to normal AGC output) Constellation monitor port
AUPC						Auto Uplink Power Control (AUPC). Uses part of Async ESC channel bandwidth to communicate with distant modem and monitor distant Rx Eb/No. Automatically adjusts local Tx power within set power and slew rate limits to maintain target distant Eb/No. Requires Async ESC feature in order to operate over Closed Net Plus ESC, IBS, or IDR services.
1544kbps G.703						1544kbps G.703 interface in addition to RS422 / V.35 / RS232 interface (software selectable)
2048kbps G.703						2048kbps G.703 interface in addition to RS422 / V.35 / RS232 interface (software selectable)
Eurocom D/1						Eurocom D: <16kbps to >2048kbps AMI coded (not limited to Eurocom rates) Eurocom G: 16kbps or 32kbps diphas coded Eurocom D & G interface (D25 male) in addition to RS422 / V.35 / RS232 interface (D25 female) (Eurocom selected by grounding control pins, other interfaces software selectable. No 1:1 on Eurocom interfaces.)