INT-DS2

DVB-S/S2 SATELLITE MODULATOR

Key Features

- *In compliance with DVB-S/S2/DSNG and in partial compliance with DVB-S2x standards.*
- *Supporting up to 200Mbps at ASI and 80Mbps at TSoIP input.*
- *Capable to perform BISS encryption on input services prior to transmission (optional).*
- *Supporting up to 45Msym/s symbol rate with 1sym/s steps.*
- *Providing modulated signal on L band or IF frequencies (70MHz or 140MHZ).*
- *Supporting DVB-CID in compliance with ETSI-TS103129 standard.*
- *Control and monitoring through web or SNMP over IP networks.*
- *Easy software upgrading using web or USB port.*
- *Equipped with reserve power supply (optional).*

General information

INT-DS2 is a new generation DVB-S/S2 Modulator for satellite broadcasting. This product fully complies ETSI300421 and ETSI302307 standards and due to possessing several features it is considered as one of the best modulators in this class available in the market. The main feature of this product is its high level of reliability which guarantees the highest uptime in the network.

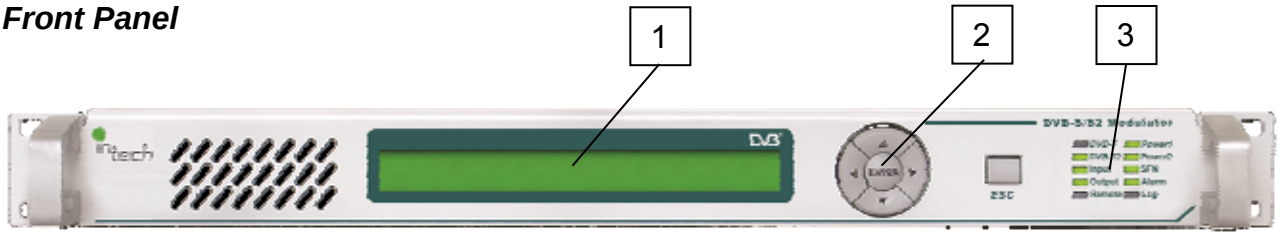
This modulator not only accepts MPEG transport streams on ASI interface but also fully supports TSoIP and special care was taken to cope with jittery transport streams over IP. On the other hand the modulated carrier is available either on L Band or IF frequencies including 70 or 140 MHz through separate connectors. It should be mentioned that when IF output is activated a replica of signal is also available on L-band output on a fixed frequency for monitoring purposes. Also a switchable 10 MHz reference signal and optional 24 Vdc or 48 Vdc for an outdoor BUC is multiplexed on the L-band interface.

INT-DS2 is equipped with an advanced feature set. One of them it is the ability to perform BISS encryption on input TS components prior to transmission. Another remarkable feature is the DVB-CID as a means of uplink station identification. This mechanism plays a vital role in interference source recognition in satellite networks.

INT-DS2 currently supports parts of DVB-S2x standard and therefore is able to transmit up to 200Mbps. Such a capacity makes it possible to transmit 40 SD quality or 10 HD quality video programs coded by H.264 via a single transponder which is a significant ability for broadcasters. It should be noted that the hardware of INT-DS2 is designed based on future extendibility. Hence achieving higher transmit bitrates as well as implementing new features like multiple TS input along with variable coding and modulation (VCM) mechanism is possible just with a simple firmware update.

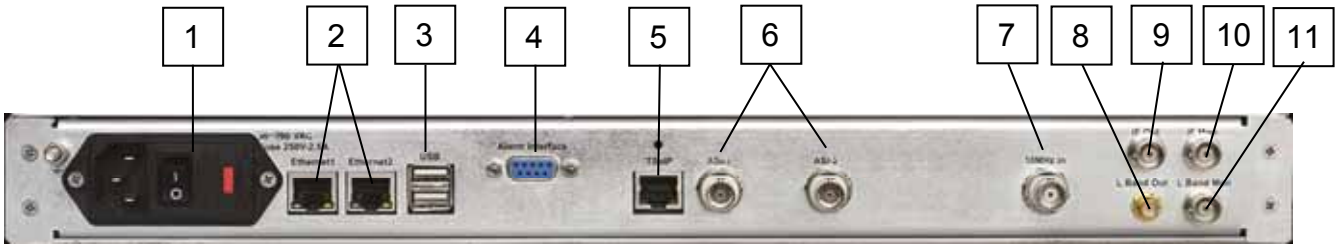
Although being rich in features and taking advantage of new technologies, INT-DS2 is designed using last generation components, resulting to be more economic in comparison with similar products in satellite broadcasting market.

Front Panel

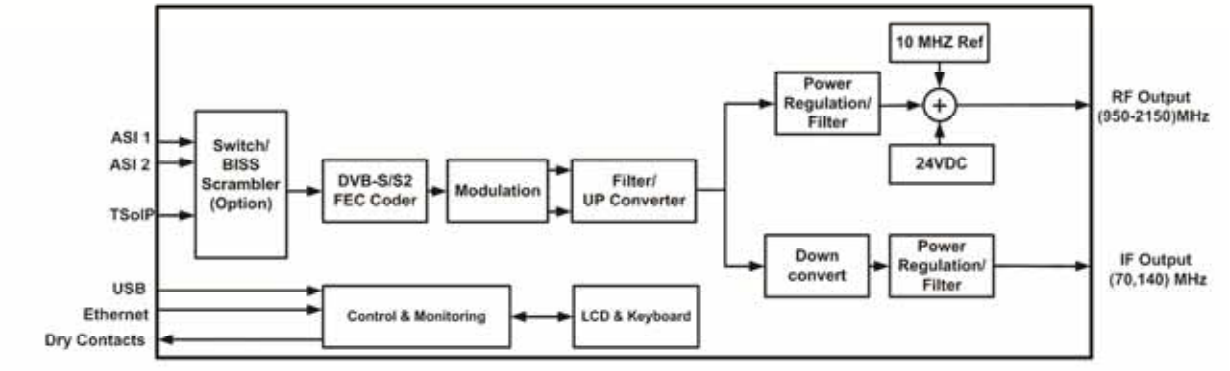


1 – LCD Display: Two-row LCD Display
2 – Control keys
3 – LED Indicators

Rear Panel



1 – AC Mains: Power supply input and on/off button with 2A fuse, input range 85-264 VAC
2 – LAN Connector: WEB Interface for LAN connection
3 – Dual USB port for PC and peripherals connection
4 – Alarm Interface serial port
5 – LAN Connector for IP DVB-S/S2 stream
6 – ASI input connectors: ASI-1, ASI-2.
7 – 1PPS & 10MHz Input: BNC female connector.
8 – L Band Output Connector.
9 – IF Output Connector.
10 – IF Monitor Output Connector.
11 – L Bans Monitor Output Connector.



INT-DS2 Block Diagram

Technical Specifications:

Inputs

ASI Inputs	2xBNC, 75 Ω, DVB-ASI, 188/204 bytes, Bitrate up to 200Mbit/sec
TSOIP Input	1xRJ45 TS over IP Input Based on SMPTE-2022, Bitrate up to 80Mbit/sec
10 MHz Reference Input	1xBNC, 50 Ω, 500mVpp~5Vpp

L-Band output

Main Connector	1x SMA (F), 50 Ω	
Monitoring Connector	1x BNC (F), 50 Ω, Coupling Factor: -25dB	
Frequency	950 to 2150 MHz, Step 10 Hz	
Level	-30 to +2dBm (±0.5dBm), step 0.1dB	
Return loss	≥14dB	
10 MHz Reference over L-Band Output	0dBm (Software Switchable)	
DC Supply over L-Band Output:	24VDC, 2A (Software Switchable)	
Out of band spurious emissions	<60 dBc	
Phase Noise	10 Hz	<-55 dBc/Hz
	100 Hz	<-75 dBc/Hz
	1 kHz	<-85 dBc/Hz
	10 kHz	<-90 dBc/Hz
	100 kHz	<-90 dBc/Hz
	1 MHz	<-115 dBc/Hz

IF output

Main Connector	1xBNC (F), 50 Ω
Monitoring Connector	1x BNC (F), 50 Ω, Coupling Factor: -25dB
Frequency	70 or 140 MHz
Level	-30 to +2dBm (±0.5dBm), 0.1dB Step
Return Loss	Typical 14dB
Out of Band Spurious Emissions	<60 dBc

SUPPORTED MODULATION SCHEMES

DVB-S2 Standard

Complying Standard:	EN302307
Constellations:	QPSK, 8PSK, 16APSK, 32APSK
Inner Coding Rates:	
QPSK:	1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
8PSK:	3/5, 2/3, 3/4, 5/6, 8/9, 9/10
16APSK:	2/3, 3/4, 4/5, 5/6, 8/9, 9/10

32APSK:	3/4, 4/5, 5/6, 8/9, 9/10
Pilots:	ON or OFF
FEC Frames:	Normal (64,800), Short (16,200)
Roll-off Factor:	0.35, 0.25, 0.20, (0.15, 0.1, 0.05 DVB-S2x Option)
Baud Rate Range:	0.5 – 45 Mbaud
Packet Stuffing:	TS Null Packet Insertion with PCR Correction or Dummy PLFRAME Insertion

DVB-S/DSNG Standards

Complying Standards:	EN 300 421, EN 301 210
Constellations:	QPSK, 8PSK
Inner Coding Rates:	
QPSK:	1/2, 2/3, 3/4, 5/6, 7/8
8PSK:	2/3, 5/6, 8/9
Roll-off Factor:	0.35, 0.25
Baud rate range:	1 – 40 Mbaud

DVB-CID

Complying Standards:	ETSI TS 103 129

Control and Monitoring

Local User Interface	Character LCD and Keypad
Remote Connection Port	2 x RJ45 (10/100 Base-T)
Remote User Interface	WEB, SNMP v1/v2/v3
Alarm Interface	Dry Contacts, Connector 9 Pin Sub-D (F)

Power Supply

Operating Voltage:	90~240 VAC, 50-60 Hz
Power Consumption:	≤45W

Physical

Weight	6 kg
Dimensions (W x H x D)	48 cm x 4.4 cm x 50 cm (Width: 19 in, Height: 1RU)

Environmental

Operating Temperature	0° C to +50° C
Storage Temperature	-25° C to +60° C
Relative Humidity	Max. 95%, Non-Condensing

How to Order (others version on request)**:**

INT-DS2 – *DVB S/S2 Satellite Modulator*

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