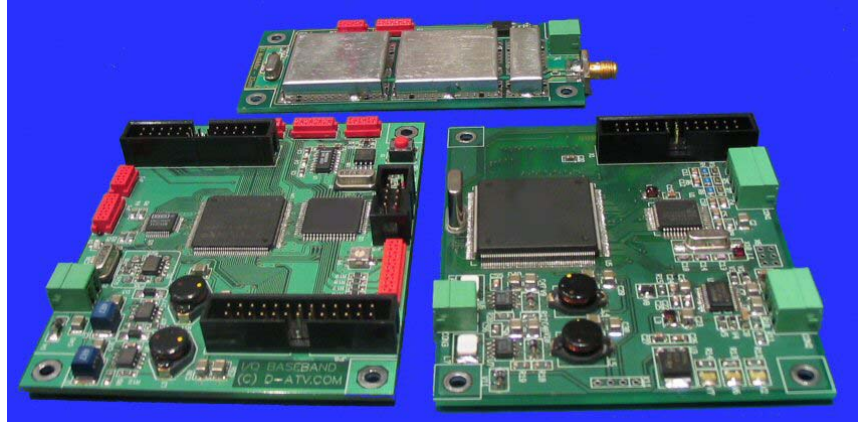


**D-ATV.com's DVB-S modulator specifications**

02 January 2004

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**Main features:**

- Up to 14 selectable symbolrates
- Support for all FEC ratios
- DVB-SI support
- User interface support for keyboard/LCD and Microsoft Windows based software control
- Very fast user interface. No endless waiting for parameter changes.
- Support for 2<sup>nd</sup> MPEG encoder
- Upgradeable firmware

# 1 MPEG encoder board

**General**

Power supply:	8..12V, 2.5 Watt max
Size (h*xw):	80mm x 100mm

**Video input**

Input	CVBS or Y/C
Level	0.5V..1.4V, 1V nominal
Impedance	75 ohms
Video system	PAL (NTSC optional)

Note: video frame rate must be 50 Hz +/- 50ppm (PAL) to obtain encoder lock.

**Audio input**

Input	stereo, unbalanced, spdif optional
Level	2Vpp max

**Video compression**

Compression	MPEG2 MP@ML
Resolution h*v (PAL)	356*288, 356*576, 480*576, 720*576
Bitrate	1.7..15 Mbit/sec (25 Mbit I frame only)

GOP length	1..19
GOP structure	I, IP, IBP, IBBP

#### Audio compression

Compression	MPEG1 Layer 2
Bitrate	256 or 384 kbit/sec

## 2 DVB-S I/Q baseband board

#### General

Power supply:	8..12V, 2.5 Watt max
Size (hwx):	80mm x 100mm

#### Inputs/outputs

- 2x transport stream input for direct connection with MPEG encoder
- input for real-time audio interface
- RS232 control interface
- 2 line LCD display
- front panel keyboard/LEDs
- PLL control
- 10 bit differential I/Q output

#### Modulator, compliant to ETSI EN 300 421

FEC	1/2, 2/3, 3/4, 5/6, 7/8
Supported symbol rates (MSym)	12.5, 8.33, 6.25, 5, 4.167, 3.571, 3.125 2.778, 2.5, 2.273, 2.083, 1.923, 1.786, 1.667
Static SI tables inserted by CPU	max. 10 streams, max. 3 kByte

## 3 RF modulator board

#### General

Power supply:	12V, 1 Watt max
Size (hwx):	45mm x 100mm

#### Output

Frequency stability	+/- 30 ppm (+/-2.5 ppm optional)
Frequency range (23 cm) <sup>1</sup>	1220..1350 MHz
Frequency range (13 cm) <sup>2</sup>	2250..2600 MHz
Output level	+2 dBm typical at 23cm, 0dBm typical at 13cm
Spectral regrowth	< -60 dBc
EVM <sup>3</sup>	< 1%

<sup>1</sup> Typical frequency range for the 23cm I/Q Modulator with order code 20223

<sup>2</sup> Typical frequency range for the 13cm I/Q Modulator with order code 20222

<sup>3</sup> Measured at 6.25 MSymbols. EVM for 13cm version is typical <2,5%

# 4 Embedded software

The parameters can be setup using the RS232 interface or with the local keyboard/LCD<sup>4</sup>. The DVB Config PC setup program can be used, but since all commands are in plain ASCII you can also write your own setup tool or enter commands by hand using a simple terminal.

## **Video settings**

Input (CVBS/S-video), brightness, contrast, color saturation

## **MPEG settings**

Clock mode (lock to video/don't lock), transport stream rate, audio rate, GOP length, GOP type, resolution, scantype, noise filter, PIDs

## **Modulator settings**

RF frequency, PLL reference frequency, FEC, symbolrate

## **Si tables**

SI data is stored in EEPROM. Data for up to 10 tables, max 3kByte, can be uploaded. Independent repeat time setting for each table. The PC setup tools supports PAT, PMT, SDT and EIT. The NIT (Network Information Table) will contain the callsign (which was supplied at ordering) for the amateur version.

## **Status readback**

Software version, MPEG encoder status, PLL lock status

## **Upgrades**

Firmware versions can be easily upgraded with future revisions.

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<sup>4</sup> Supported by software but Keyboard and LCD will not be shipped with the boards