D-ATV.com's DVB-S modulator specifications
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Main features:

- Up to 14 selectable symbolrates
- Support for all FEC ratios
- DVB-SI support
- Supports EPG event information
- Transmission of EBU Teletext with up to 32 pages containing up to 250 subpages
- User interface support for keyboard/LCD and Microsoft Windows based software control
- Very fast user interface. No endless waiting for parameter changes.
- Support for 2nd MPEG encoder
- Upgradeable firmware

1   MPEG encoder board

General

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

Video input

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

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

Audio input

Input	stereo, unbalanced
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 (hxw):	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
- Band switch control output
- 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	EN 300 468 Support (NIT, SDT, EIT, TDT)

3   RF modulator board

General

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

Output

Frequency stability	+/- 30 ppm (+/-2.5 ppm optional)
Frequency range (23 cm)[1]	1220..1320 MHz
Frequency range (13 cm)[2]	2250..2520 MHz

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[1] Typical frequency range for the 23cm I/Q Modulator with order code 20223
[2] Typical frequency range for the 13cm I/Q Modulator with order code 20222

Output level	+1 dBm typical at 23cm, -2dBm typical at 13cm
Spectral regrowth	< -60 dBc
EVM[3]	< 1%

4 Embedded software

The parameters can be setup using the RS232 interface or with the local keyboard/ LCD[4]. The DVB Config 2005 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 and PAL/NTSC selection.

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

Service Information tables

Support for EN 300 468 DVB-SI tables as PAT, PMT, SDT, EIT, TDT and NIT. Settings can be uploaded with DVB Config. The PC setup tools supports PAT, PMT, SDT and EIT while the TDT is automatically updated when a connection is present. The SDT (Service Description Table) which contains the Program Names will contain the callsign (which was supplied at ordering) for the amateur version. Network name and Service provider names are freely programmable.

Teletext

Transmission of teletext on one or both streams supported.

Status readback

Software version, MPEG encoder status, PLL lock status

Upgrades

Firmware versions can be easily upgraded with future revisions.

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[3] Measured at 6.25 MSymbols. EVM for 13cm version is typical <2,7%
[4] Supported by software but Keyboard and LCD will not be shipped with the boards