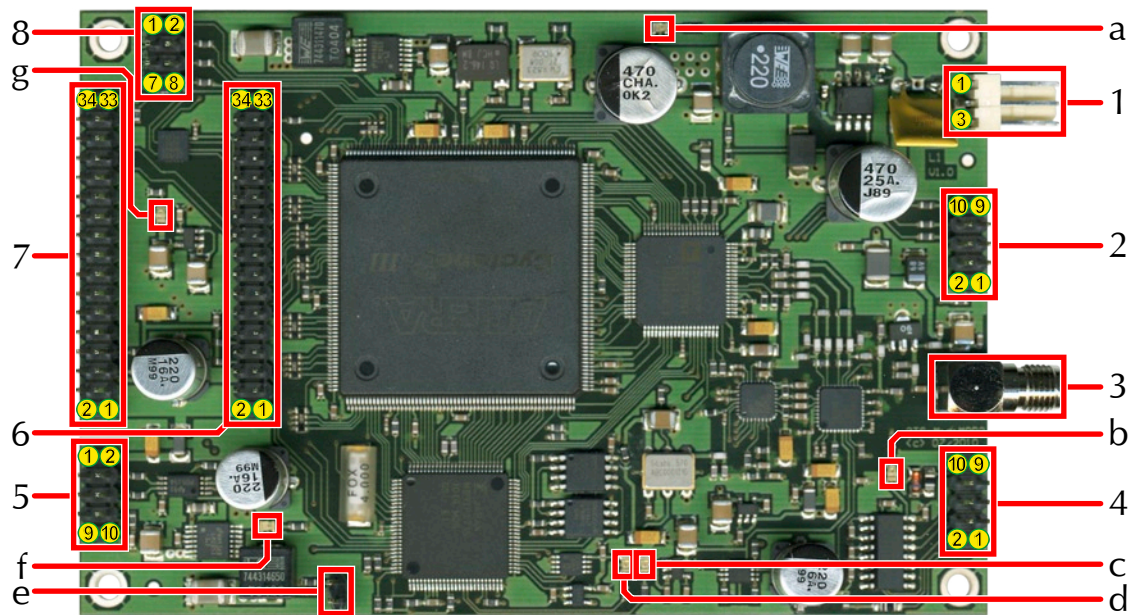


1 Connector description



Board dimensions: 120x80 mm

Connectors	1	Power Input	8-24 V=
	2	10pin Header	Opt. ext. Upconverter control
	3	SMA	RF out 50 Ω <div style="border: 1px solid black; padding: 2px; display: inline-block;"> note: RF_{OUT} is not filtered! </div>
	4	10pin Header	RS232 (115k2, 8N1)
	5	10pin Header	I ² C-Bus
	6	34pin Header	TS _{IN1}
	7	34pin Header	TS _{IN2}
	8	8pin Header	opt. Ref. Clock in
LEDs and switches	a	LED green	5.0 V ok
	b	LED red	RF Lock (off = locked)
	c	LED green	PLL Lock ok
	d	LED green	Encoder Load ok
	e	2pin Header	MCU Prog if set
	f	LED green	3.3 V ok
	g	LED green	2.5 V ok

2 Pin description

1 – Power supply

1	V _{IN} 8-24 V=	2, 3	GND
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2 – opt. ext. Upconverter control

1	GND	2	16 MHz Ref.
3	PTT	4	PLL-ENA
5	PLL Lock	6	PLL-CLK
7	+5.0 V	8	PLL-DATA
9	GND	10	Analog _{IN} 0-3.3 V

4 – RS232

1	ext. mode	2	Control TxD
3	Control RxD	4	Data Rx
5	GND	6	Data Tx
7	con. with 8	8	con. with 7
9	Reset	10	GND

5 – I²C-Bus

1	+5.0 V	2	+5.0 V
3	SDA	4	SDA
5	SCL	6	SCL
7	Reset-In	8	IRQ
9	GND	10	GND

e – Mode jumper

open	run mode
closed	program mode

8 – opt. Reference Clock in

1	GND	2	10 MHz ref. in.
3	GND	4	1 pps
5	GND	6	GPS Rx (3.3 V)
7	+5.0 V	8	GPS Tx (3.3 V)

6, 7 – TS_{IN}

1	+5.0 V	2	+5.0 V
3	+5.0 V	4	+5.0 V
5	SDA	6	not connected
7	SCL	8	xReset
9	GND	10	GND
11	TSCLK in/out	12	PSYM
13	not connected	14	DVAL
15	TS 6	16	TS 7
17	TS 4	18	TS 5
19	TS 2	20	TS 3
21	TS 0	22	TS 1
23	GND	24	GND
25	SD Out (f. E.*)	26	PLL THR (f. E.*)
27	SDCLK (f. E.*)	28	SD In (f. E.*)
29	GND	30	GND
31	MCLK 27 MHz	32	ASCLK (f. E.*)
33	RST Vid. Codec	34	not connected

*f.E. = for Encoders

3 Specifications

Board dimensions	120×80 mm
Board weight	<100 g
Voltage	8–24 V=
Power consumption	~6 W
TS Input	Raw TS input: Clock direction switchable Tuner TS input: DVB-S/-S2/-C/-T single/-T diversity/Dibcom7000/ATSC NIM Encoder input ASI input
RF Frequency range	70 MHz – 2200 MHz in 1 kHz-steps

DVB-S	Constellation	QPSK
	Modulation Error Rate (MER)	>27 dB
	FEC	1/2, 2/3, 3/4, 5/6, 7/8
	Symbolrate	1–45 MSymbol/s in 1 kSymbol-steps
	RF_{out}	80–107 dBμV@50 Ω
DVB-S2	Constellation	QPSK, 8PSK, 16APSK, 32APSK
	Modulation Error Rate (MER)	>27 dB
	FEC (LDPC)	1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 Note: not every FEC is supported in each constellation!
	Symbolrate	1–32 MSymbol/s in 1 kSymbol-steps
	Roll-Off-Factor	0.2, 0.25, 0.34
	RF_{out}	80–107 dBμV@50 Ω
DVB-C	Constellation	QAM16, QAM32, QAM64, QAM128, QAM256
	Modulation Error Rate (MER)	>45 dB
	Symbolrate	1000–7000 kSymbol/s in 1 kSymbol-steps
	RF_{out}	80–107 dBμV@50 Ω
DVB-T	Constellation	QPSK, QAM16, QAM64
	Modulation Error Rate (MER)	>40 dB
	FEC	1/2, 2/3, 3/4, 5/6, 7/8
	Guard Interval	1/4, 1/8, 1/16, 1/32
	IFFT Mode	2k, 4k, 8k
	Bandwidth	5, 6, 7 and 8 MHz
	RF_{out}	80–100 dBμV@50 Ω
ATSC	Constellation	8VSB
	Modulation Error Rate (MER)	>38 dB
	Bandwidth	6 MHz
	RF_{out}	80–107 dBμV@50 Ω

 note: RF_{OUT} is **not** filtered!

Errata/corrections:

25.10.2010 Release v1.0

06.09.2010 Some specifications corrected

The information in this manual was compiled with high care and to our best knowledge; nevertheless there might be some errors left in this document. We do not take legal or any other responsibility for the correctness of any information.

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