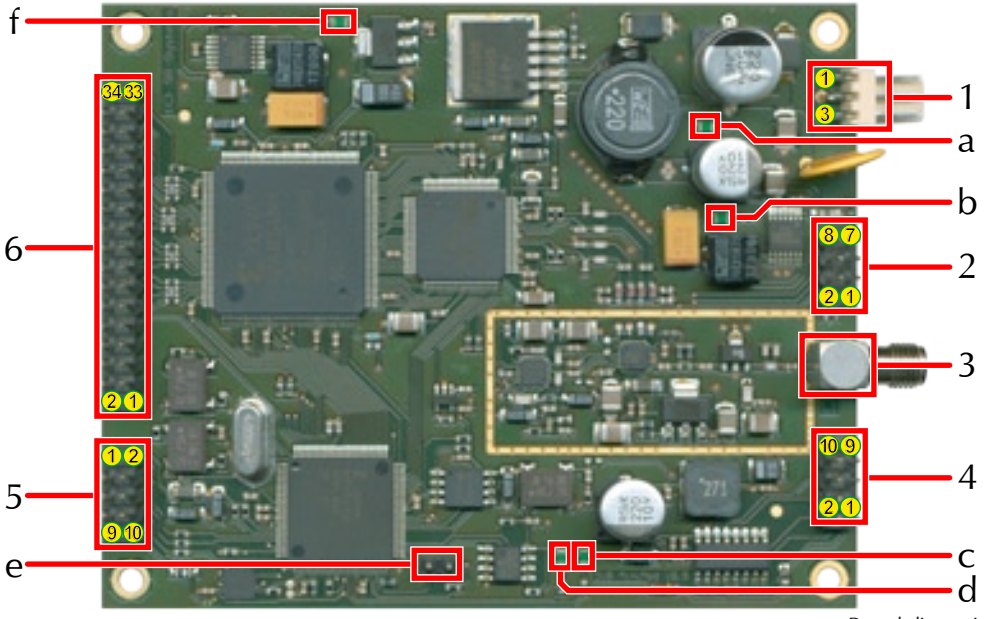


1 Connector description



Board dimensions: 100x80 mm

Connectors	1	Power Input	7-24 V=
	2	8pin Header	Optional f. ext. Upconverter control
	3	SMA	RF out 50 Ω <div style="border: 1px solid red; 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 _{IN}
LEDs and switches	a	LED green	+5,0 V
	b	LED green	+3,3 V
	c	LED green	Status
	d	LED green	Status
	e	2pin Header	MCU Prog if set
	f	LED green	+2,5 V

2 Pin description

1 – Power input	
1	V _{IN} 7–24 V=
2	GND
3	GND

2 – opt. ext. Upconv. 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

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

6 – 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 B	12	PSYM B
13	not connected	14	DVAL B
15	TS B6	16	TS B7
17	TS B4	18	TS B5
19	TS B2	20	TS B3
21	TS B0	22	TS B1
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	100×80 mm			
Board weight	<50 g			
Voltage	7–24 V=			
Power consumption	~5 W			
TS Input	Raw TS input: Clock direction and Clock edge switchable Tuner TS input: DVB-S/C/T NIM Encoder input			
RF Frequency	board type	low band	high band	step size
	MiniMod-0*	575–712 MHz	1150–1425 MHz	250 kHz
	MiniMod-1	500–637 MHz	1000–1275 MHz	250 kHz
	MiniMod-2*	400–565 MHz	800–1125 MHz	250 kHz
	MiniMod-3	388–512 MHz	775–1025 MHz	250 kHz
	MiniMod-4*	315–455 MHz	625–910 MHz	250 kHz
	MiniMod-5	288–375 MHz	575–750 MHz	250 kHz
	MiniMod-6	250–330 MHz	500–660 MHz	250 kHz
	*stock articles			

DVB-S	Constellation	QPSK
	Modulation Error Rate (MER)	>25 dB
	FEC	$\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}, \frac{7}{8}$
	Symbolrate	1–45 MSymbol/s in 1 kSymbol-steps
	RF_{out}	~110 dB μ V@50 Ω
DVB-C	Constellation	QAM16, QAM32, QAM64, QAM128, QAM256
	Modulation Error Rate (MER)	>40 dB
	Symbolrate	1000–7000 kSymbol/s in 1 kSymbol-steps
	RF_{out}	~107 dB μ V@50 Ω
DVB-T	Constellation	QPSK, QAM16, QAM64
	Modulation Error Rate (MER)	>36 dB
	FEC	$\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}, \frac{7}{8}$
	Guard Interval	$\frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}$
	IFFT Mode	2k
	Bandwidth	5, 6, 7 and 8 MHz
	RF_{out}	>100 dB μ V@50 Ω
ATSC	Constellation	8VSB
	Bandwidth	6 MHz
	RF_{out}	~107 dB μ V@50 Ω



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

Errata/corrections:

26.11.2008 coloured TS connector

28.11.2008 ATSC added