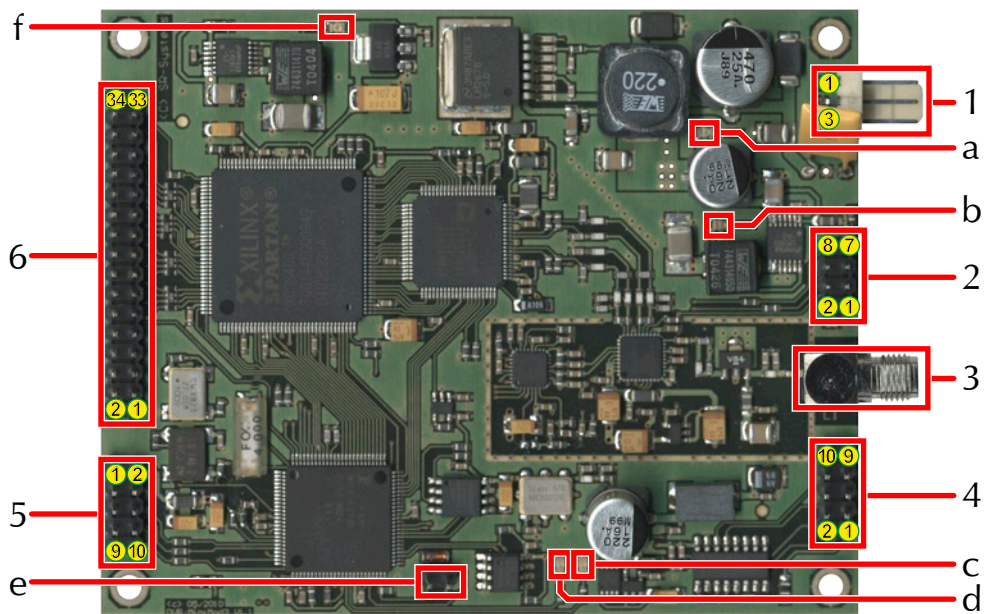


# 1 Connector description



Board dimensions: 100x80 mm

<b>Connectors</b>	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: 5px; display: inline-block;">  note: RF<sub>OUT</sub> is <b>not</b> filtered!                 </div>
	4	10pin Header	RS232 (115k2, 8N1)
	5	10pin Header	I <sup>2</sup> C-Bus
	6	34pin Header	TS <sub>IN</sub>
<b>LEDs and switches</b>	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

<b>1 – Power supply</b>			
1	V <sub>IN</sub> 8–24 V=	2, 3	GND

<b>2 – opt. ext. Upconverter control</b>			
1	GND	2	16 MHz Ref.
3	PTT	4	PLL-ENA
5	PLL Lock	6	PLL-CLK
7	+5.0 V	8	PLL-DATA

<b>4 – RS232</b>			
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

<b>5 – I<sup>2</sup>C-Bus</b>			
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

<b>e – Mode jumper</b>	
open	run mode
closed	program mode

<b>6 - TS<sub>IN</sub></b>			
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

<b>Board dimensions</b>	100×80 mm
<b>Board weight</b>	<50 g
<b>Voltage</b>	7–24 V=
<b>Power consumption</b>	~5 W
<b>TS Input</b>	Raw TS input: Clock direction and Clock edge switchable Tuner TS input: DVB-S/C/T NIM Encoder input
<b>RF Frequency range</b>	70 MHz–2200 MHz in 1 kHz-steps

<b>DVB-S</b>	<b>Constellation</b>	QPSK
	<b>Modulation Error Rate (MER)</b>	>25 dB
	<b>FEC</b>	$\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}, \frac{7}{8}$
	<b>Symbolrate</b>	1–45 MSymbol/s in 1 kSymbol-steps
	<b>RF<sub>out</sub></b>	~110 dB $\mu$ V@50 $\Omega$
<b>DVB-C</b>	<b>Constellation</b>	QAM16, QAM32, QAM64, QAM128, QAM256
	<b>Modulation Error Rate (MER)</b>	>45 dB
	<b>Symbolrate</b>	1000–7000 kSymbol/s in 1 kSymbol-steps
	<b>RF<sub>out</sub></b>	~107 dB $\mu$ V@50 $\Omega$
<b>DVB-T</b>	<b>Constellation</b>	QPSK, QAM16, QAM64
	<b>Modulation Error Rate (MER)</b>	>40 dB
	<b>FEC</b>	$\frac{1}{2}, \frac{2}{3}, \frac{3}{4}, \frac{5}{6}, \frac{7}{8}$
	<b>Guard Interval</b>	$\frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}$
	<b>IFFT Mode</b>	2k
	<b>Bandwidth</b>	5, 6, 7 and 8 MHz
	<b>RF<sub>out</sub></b>	>100 dB $\mu$ V@50 $\Omega$
<b>ATSC</b>	<b>Constellation</b>	8VSB
	<b>Modulation Error Rate (MER)</b>	>35 dB
	<b>Bandwidth</b>	6 MHz
	<b>RF<sub>out</sub></b>	~107 dB $\mu$ V@50 $\Omega$



note: RF<sub>OUT</sub> is **not** filtered!

**Errata/corrections:**

15.07.2010 First release

24.07.2010 ATSC Modulation Error Rate added

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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