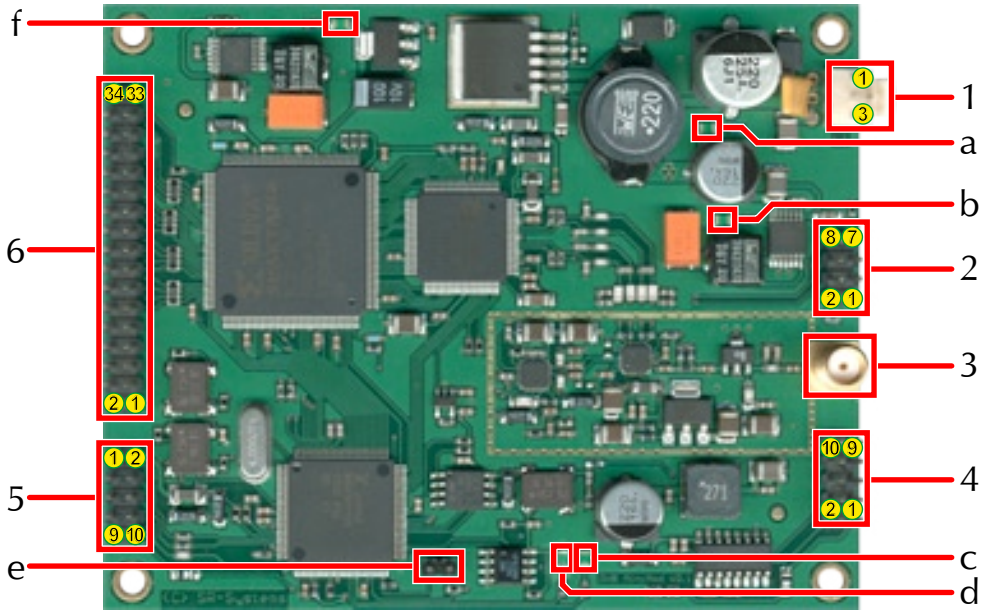
1 Connector description



Board dimensions: 100×80 mm

Connectors	1	Power Input	7–24 V=
	2	8pin Header	Optional f. ext. Upconverter control
	3	SMA	RF out 50 Ω note: RF_{OUT} is **not** filtered!
	4	10pin Header	RS232
	5	10pin Header	I²C-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	con. with 4+6	2	TxD
3	RxD	4	con with 1+6
5	GND	6	con with 1+4
7	RTS	8	CTS
9	not connected	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

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			

e – Mode jumper	
open	run mode
closed	program mode

3 Specifications

	Board dimensions	100×80 mm
	Board weight	<50 g
	Voltage	7–24 V=
	Power consumption	~5 W
	TS Input	Clock direction and Clock edge switchable
DVB-S	***Constellation***	QPSK
	Modulation Error Rate (MER)	>25 dB
	FEC	½, ⅔, ¾, ⅚, ⅞
	Symbolrate	1–45 MSymbol/s in 1 kSymbol-steps
	RF_{out}	~110 dBµV@50 Ω
	RF Frequency	325–450 MHz or 650–900 MHz (in steps of 125 kHz) or, dependent on used VCO-Chip: 1175–1425 MHz or 588–712 MHz (in steps of 125 kHz)
DVB-C	***Constellation***	QAM16, QAM32, QAM64, QAM128, QAM256
	Modulation Error Rate (MER)	>36 dB
	Symbolrate	1000–7000 kSymbol/s in 1 kSymbol-steps
	RF_{out}	~107 dBµV@50 Ω
	RF Frequency	325–450 MHz or 650–900 MHz (in steps of 125 kHz) or, dependent on used VCO-Chip: 1175–1425 MHz or 588–712 MHz (in steps of 125 kHz)
DVB-T	***Constellation***	QPSK, QAM16, QAM64
	Modulation Error Rate (MER)	>35 dB
	FEC	½, ⅔, ¾, ⅚, ⅞
	Guard Interval	¼, ⅛, 1/16, 1/32
	IFFT Mode	2k
	Bandwidth	5, 6, 7 and 8 MHz
	RF_{out}	~100 dBµV@50 Ω
	RF Frequency	325–450 MHz or 650–900 MHz (in steps of 125 kHz) or, dependent on used VCO-Chip: 1175–1425 MHz or 588–712 MHz (in steps of 125 kHz)

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

Errata/corrections:

20.06.2007 *1st version of this document finished*

13.07.2007 *changed Symbolrate range (DVB-S) and MER (DVB-S, -C and -T)*

20.07.2007 *removed some minor typing errors*