

TENTATIVE

SPECIFICATION

Version V0.0

MODEL : SBT - 6001RDS

DESCRIPTION : FM RADIO with RDS

1. With X-TAL

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Approved	Checked	Issued

SBTRON

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1. Scope

This specification is applied to FM stereo radio with RDS Module.

2. General Description

The SBT - 6001RDS is a FM stereo radio with RDS low power output IC designed for handheld applications.

3. Features

- * High sensitivity due to integrated low noise RF input amplifier
- * FM mixer for conversion of the US/Europe(87.5MHz to 108MHz) and Japanese FM band (76MHz to 90MHz) to IF preset tuning to receive Japanese TV audio up to 108MHz, raster 100KHz
- * RF Automatic Gain Control circuit
- * Fully integrated FM IF selectivity
- * Fully integrated FM demodulator
- * Crystal reference frequency oscillator. The oscillator operates with a 32.768kHz Xtal
- * Soft mute, SNC can be switched off via the bus
- * Signal depending mono/stereo blend (SNC, stereo noise canceling)
- * Adjustment free stereo decoder

4. General specification

NO	ITEM	Test condition	SPEC				Note
			MIN	TYP	MAX	UNIT	
1	Receiving Frequency	EU/USA/JAPAN BAND	76	—	108	MHz	
2	IF Center Frequency		—	225	—	KHz	
3	Ant Input Impedance	Balanced	—	50	—	Ω	
4	Operating Voltage	DC Supply Voltage	2.4	2.7	5	V	
5	Operating Temp.	—	-20	—	+60	$^{\circ}\text{C}$	
6	Supply Current	Vdd = 2.7V	11	15	20.0	mA	
7	Stand-by Current		10	21	31	μA	

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5. Standard Test Condition

NO	ITEM	CONDITION	
		MONO	STEREO
1	Standard Supply Voltage	2.7V±0.1V DC	
2	Temperature	25±2℃	
3	Relative Humidity	65±5%	
4	Audio Filter	Unless designated, Audio Filter should be used	
		HPF : 300 Hz	
		LPF : 15 KHz	
5	RDS SECTION	22.5KHz/dev, 1KHz/AF, 2KHz/Frds, 50uS/pre-emphasis 50uS/de-emphasis, Block Quality Rate >=95%	
6	Modulation Frequency	1KHz, 22.5KHz/dev	1KHz, 75KHz/dev
		VRF = 1 mV	including 10% pilot
7	Test Frequency	98 MHz	
8	RF Input Level	60 dBμV	

6. Electrical Specification

NO	ITEM	Test		SPEC			
		Freq.	CONDITION	MIN	TYP	MAX	UNIT
1	Usable sensitivity	76 MHz	S/N=26dB, Mod.=22.5kHz	—	6	14	dBμV
		98 MHz		—	6	14	dBμV
		108MHz		—	6	14	dBμV
2	S/N Ratio	98 MHz	Mono : 60dBu, Mod.=22.5kHz	55	59	-	dB
3	Distortion	98 MHz	Mono : 60dBu, Mod.=22.5kHz	—	0.5	1	%
		98 MHz	Stereo : 60dBu, Mod.=75kHz	—	1	3.0	%
4	Selectivity	98 MHz	+ 200KHz/-200KHz	30	35	-	dB
5	RDS Sensitivity	98 MHz	Standard Condition	-	15	21	dB
6	Stereo Separation	98 MHz	Stereo : 60dBu, Mod.=75kHz	25	30	-	dB
7	Overload distortion	98 MHz	Mono : 99dBu, Mod.=75kHz	-	1	3	%
8	CH. Balance	98 MHz	Mono : 60dBu, Mod.=22.5kHz	-	0	2	dB
9	Audio Output	98 MHz	Mono : 60dBu, Mod.=22.5kHz	60	75	90	mV

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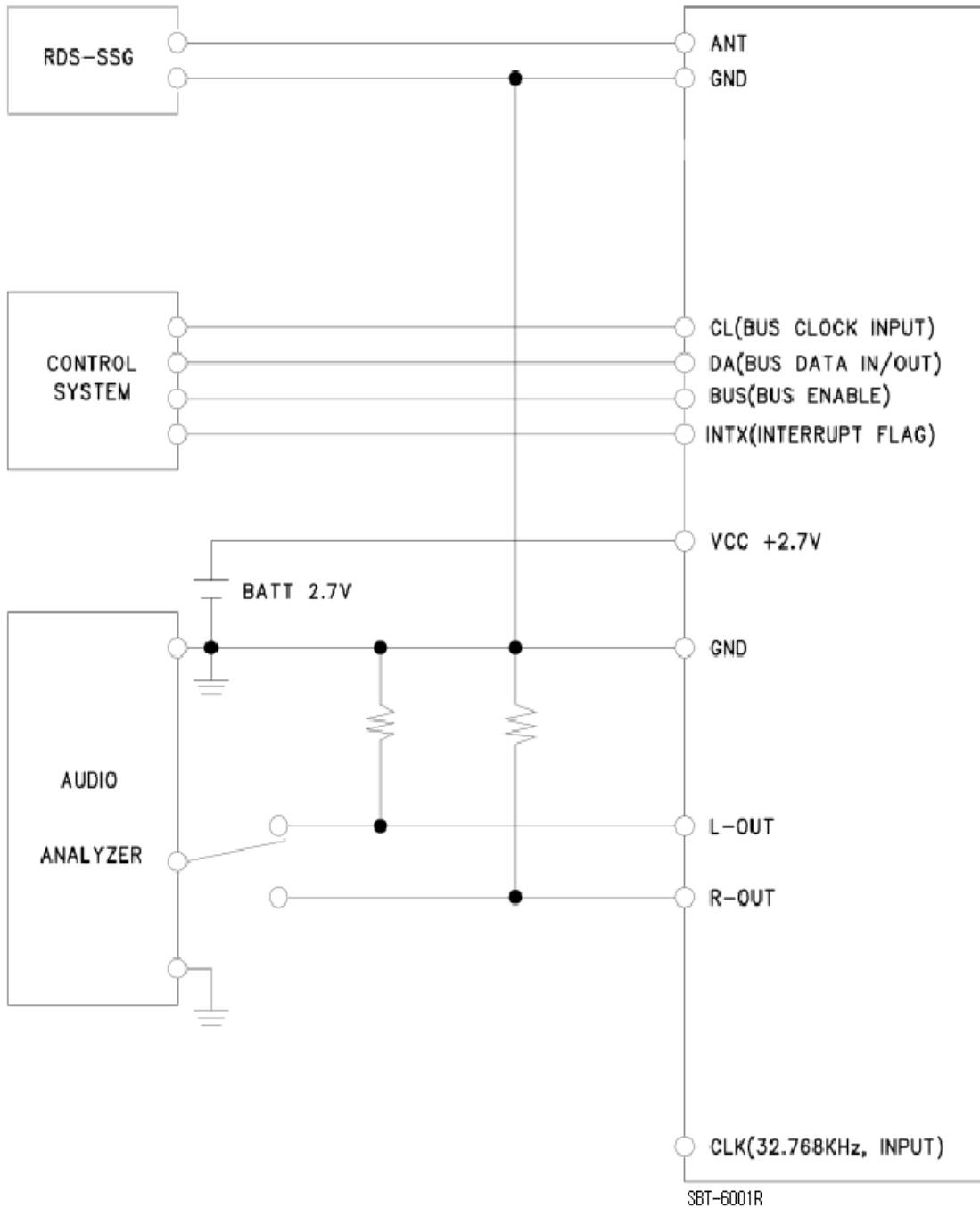
7. Terminal Interface

NO	TERMINAL	I/O	Description
1	GND	-	Connect to Ground.
2	CLK	I	N.C (External 32.768KHz Ref X-TAL Input)
3	VCC + 2.7V	I	VCC + 2.7Volt
4	ANT	I	RF Input (Connect to Antenna)
5	BUS	I	BUS Enable
6	CL	I	BUS Clock Input
7	DA	I/O	BUS Data In/Out
8	INTX	-	Interrupt Flag
9	L-OUTPUT	O	Audio L Output
10	R-OUTPUT	O	Audio R Output

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Dec , 20th, 2004				

8-1. Circuit of Measurement

Measurement circuit

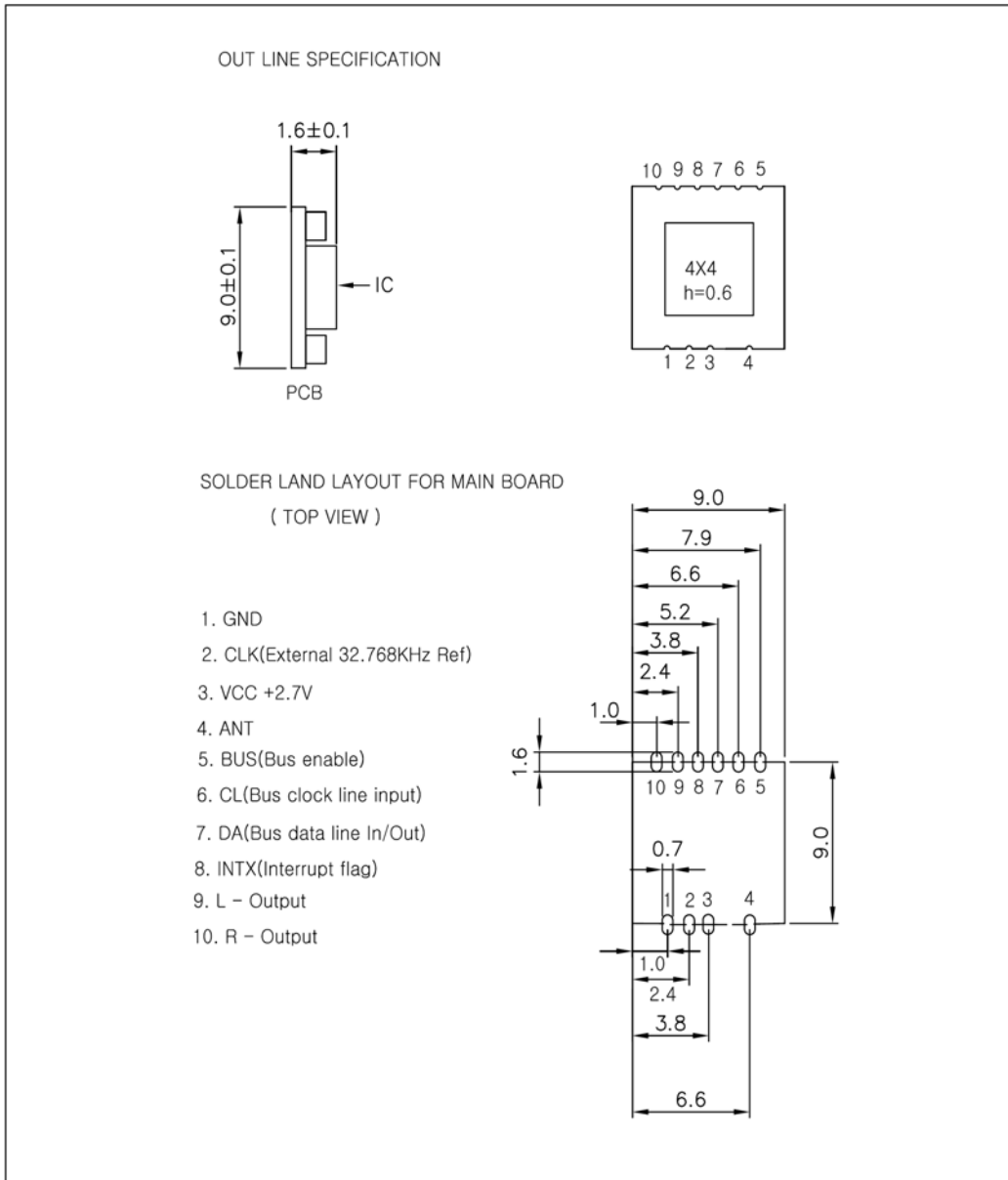


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9. Outline Layout



No.	Dwg No.	Parts Name	Q'ty	Material	Surface Treatment	Weight(g)	Remark
TOLERANCE	1	up to 6	± 0.1	Scale	Material	Date	Surface tr. Model.
	7	" 30	± 0.2				
	31	" 120	± 0.3				
	121	" 315	± 0.5	Approved	Title. FM RDS MODULE		
	316	" 1000	± 0.8				
Notes				Checked	Designed	Drawn	Dwg no.

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