

BT38	Sx	
SRD	RX	ISM 868 - 870 MHz

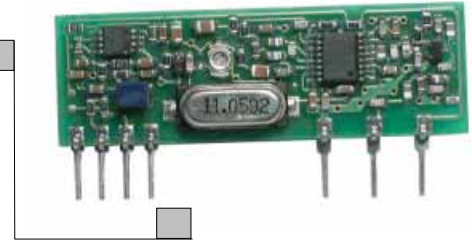


Table 1 – BT38S versions

BT38S3-F171	868,525 MHz	3 VDC	SUB-BAND <i>f</i> – 15 mW Duty-Cycle <1%
BT38S3-F195	868,725 MHz	3 VDC	SUB-BAND <i>k</i> – 15 mW Duty-Cycle = 100 %
BT38S5-F171	868,525 MHz	5 VDC	SUB-BAND <i>f</i> – 20 mW Duty-Cycle <1%
BT38S5-F195	868,725 MHz	5 VDC	SUB-BAND <i>k</i> – 20 mW Duty-Cycle = 100 %

- XTAL CONTROLLED ON 80 CHANNELS.
- FM MODULATION.
- HIGH POWER (+14 dB).
- FAST DATA RATE (19.2 KB).

DESCRIPTION :

The BT38S module is a complete transmitter module, "FM" or "FSK" modulated and crystal controlled on up to 35 different frequency channels in the 868 - 870 MHz band.

The carrier frequency is generated by a fixed division, low noise "PLL" integrated circuit (IC1). A Power Amplifier (P.A.) stage brings the RF output to the required power level.

"FSK" Digital (TXD Input) of "FM" Analog (AIN Input) modulation to the D1 Varicap Diode (X1 Crystal Reference Modulation).

A 5 poles Low Pass Filter attenuates the harmonic emissions under the EN 300-220 limits. The module needs a single 5VDC supply (BT38S5) or 3VDC supply (BR38S3).

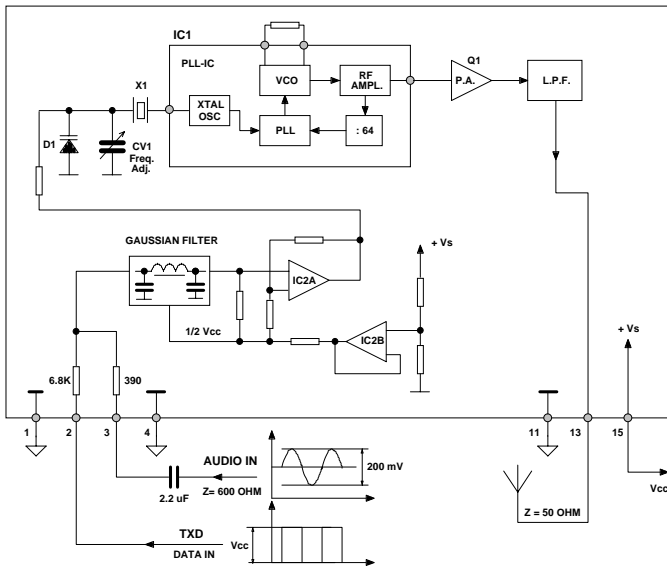


Fig.1 – BT38S – Block diagram.

Information about 50 KHz channel separation Band –Plan may be found in application note Anxx.

X1 Xtal specifications.

1. Holder: SX1 or HC45 (rear mount).
2. Mode: Fundamental – Parallel res.
3. Load cap: 15b pF.
4. Init. Precision: ±10 ppm.
5. Temp. stability: ±10 ppm.
6. Frequency: $F_x = F_{TX} / 64$.

BT38S PERFORMANCE DATA

	Min	Typ	Max	Units	Notes
▪ FREQUENCY	868		870	MHz	(1)
▪ RF POWER BT38 S3 BT38 S5	15	20		mW	(2) (2)
▪ IMPEDANCE		50		Ω	
▪ FREQUENCY ACCURACY		± 20	± 10	KHz	(3)
▪ II HARMONIC		-50	-45	dBc	
▪ SPURIOUS EMISSION		-60	-55	dBc	
▪ DATA RATE			19.2	KB	
▪ POWER UP TIME			1	ms	
▪ SUPPLY VOLTAGE BT38 S3 BT38 S5	4.5 2.75	5 3	5.5 3.6	V V	
▪ SUPPLY CURRENT		28	32	mA	
▪ OPERATING TEMPERATURE	-20		+60	C°	

NOTE

(1) CHANNEL SEPARATION = 50 KHz.
 (2) Max. legal Power = 25 mW ERP (SUB BAND F and G) – 5 mW ERP (SUB BAND K).
 (3) OVER OPERATING TEMPERATURE.

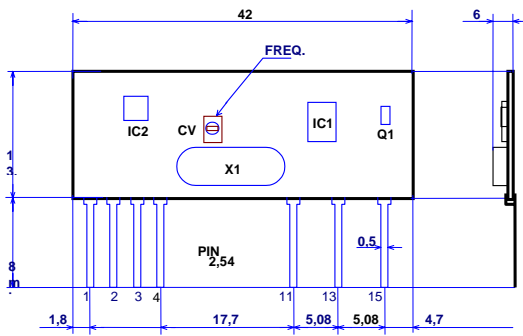


Fig.2 - BT38S - Physical dimensions.

PIN DESCRIPTION

PIN	Function	Description
PIN1	GND	Ground
PIN2	TXD	Data Input
PIN3	AIN	Audio input
PIN4	GND	Ground
PIN11	GND	Rf ground
PIN13	ANT	Rf Output
PIN15	VCC	Dc supply

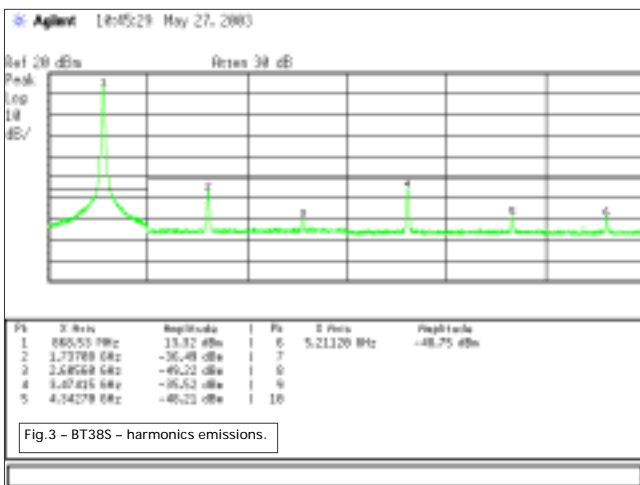


Fig.3 - BT38S - harmonics emissions.

DATA TRANSMISSION PROTOCOL:

The "Reference Frequency" modulation scheme allows for a flat response down to DC levels to avoid loss of balance in the transmitted signal even in presence of non symmetrical data patterns.

In data transmission (FSK modulation) nominal frequency deviation is obtained with a TXD signal level ranging from Zero to Vs (5V or V3).

Output RF carrier frequency, as adjusted by CV1, corresponds to F0 center channel frequency when TXD and AIN inputs are open state or when mean modulation signal level is VS/2.

