BK18

SRD	TRX	SAW	ISM 868 – 870 MHz

TABLE 1 – BK17 VERSIONS

| BK18A5-M2	(1) 868.350 MHz 5Vdc	38.4 KB
BK18A3-M2	(1) 868.350 MHz 3.6Vdc	38.4 KB
BK18A5-M5	868.950 MHz 5Vdc	38.4 KB
BK18A3-M5	868.950 MHz 3.6Vdc	38.4 KB
BK18S5-M2	868.350 MHz 5Vdc	64 KB
BK18S3-M2	868.350 MHz 3.6Vdc	64 KB
BK18S5-M5	868.950 MHz 5Vdc	64 KB
BK18S3-M5	868.950 MHz 3.6Vdc	64 KB

NOTE (1) : STANDARD VERSIONS WITH EX STOCK AVAILABILITY. PLEASE CONTACT THE FACTORY FOR SAMPLES AND AVAIBILITY OF NON STANDARD VERSIONS.
NOTE (2) :   LOOP ANTENNA EQUIPPED.

- SAW RESONATOR CONTROLLED
- HIGH TX POWER (20 mW)
- HIGH RX SENSITIVITY (-100 dBm)
- GASK MODULATION
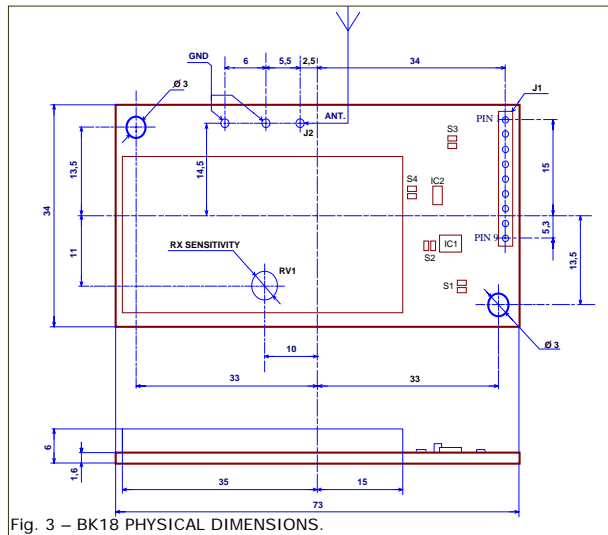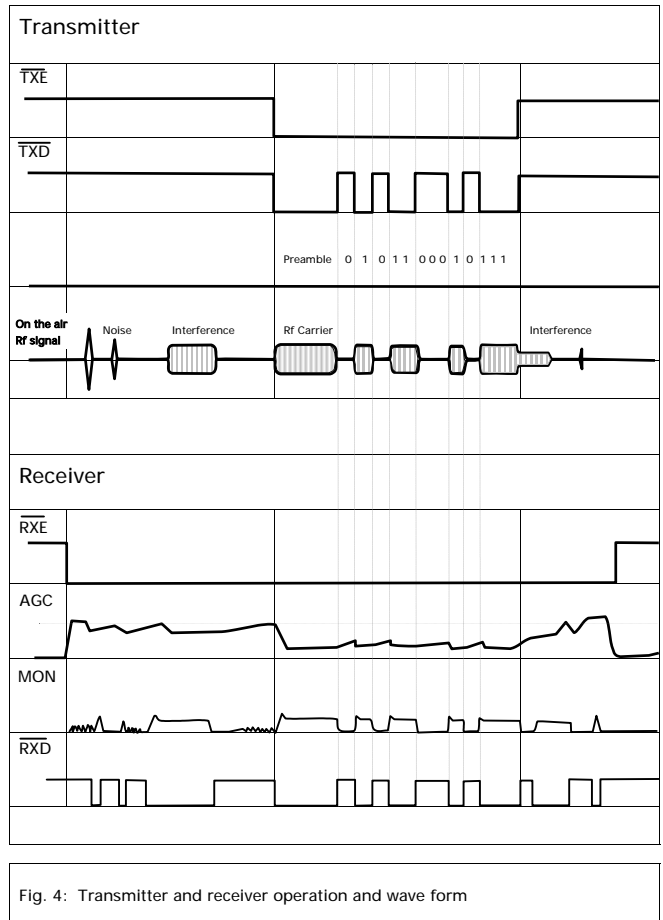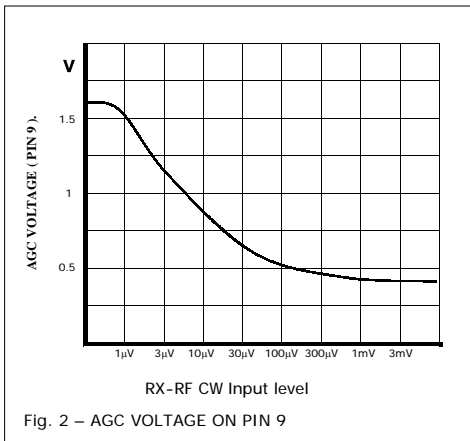- HIGH DATA RATE (To 64KB)

DESCRIPTION:

The BK18 is a radio transceiver module for use in bi-directional data transfer applications up to 64 KB. The module operates on the 868 MHz ISM band and is recognized as the ideal solution for wireless short range data transmission, wireless alarms, remote meter reading and many other wireless applications. The BK18 utilizes an advanced ASK Gaussian shaped (GASK) modulation for a better rejection of multipath propagation signal distortion. The transmitter section of the BK18 is provided by a "SAW" stabilized oscillator feeding a P.A. stage. The receiver is a superetherodyne with "SAW" stabilized local oscillator and with a very low current consumption. The BK18 is easily directly interfaced to microprocessors and is equipped by a proprietary demodulation system insensitive to the data's mean value.
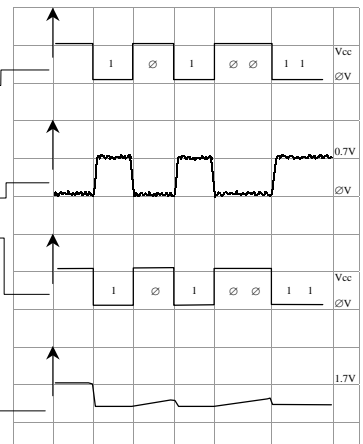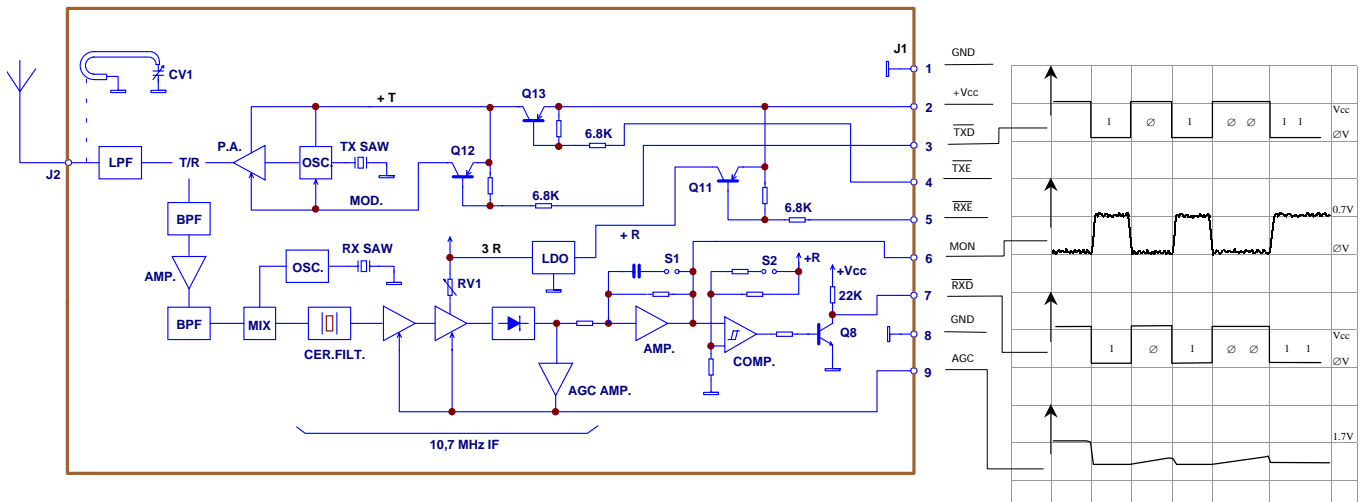
BK18 – PERFORMANCE   DATA

			Min	Typ	Max	Units	Notes
▪	**FREQUENCY**	BK18xx–M2	868.200	868.350	868.500	MHz	(1)
		BK18xx–M5	868.800	868.950	869.100		
▪	**ANTENNA IMPEDANCE**			50		Ω	
▪	**TX RF POWER**		15	20		mW	
▪	**TX SPURIOUS EMISSION**				–45	dBc	
▪	**RX SENSITIVITY**		–95	–98		dBm	(2)
▪	**RX SELECTIVITY**			±100		KHz	
▪	**RX DYNAMIC RANGE**		80	90		dB	
▪	**DATA RATE**	BK18A			38.4	KB	(3)
		BK18S			64	KB	(3)
▪	**T-R SWITCHING TIME**			0.5	1	ms	
▪	**SUPPLY**	BK18 x 5	4.5	5	6	V	
	VOLTAGE	BK18 x 3	3	3.6	4.5	V	
▪	**SUPPLY**	RX MODE		9	11	mA	(4)
	CURRENT	TX MODE		20	35	mA	(4)
▪	**OPERATING TEMPERATURE**		–20		+60	°C	

NOTE :
(1) OVER OPERATING TEMPERATURE RANGE.
(2) 19.2KB – BER 1%.
(3) 50/50 MARK/SPACE DATA PATTERN.
(4) TYP. VALUE FOR 50/50 MARK/SPACE DATA PATTERN – MAX VALUE FOR CW EMISSION.

Fig. 2 – AGC VOLTAGE ON PIN 9

Fig. 3 – BK18 PHYSICAL DIMENSIONS.

Fig. 4: Transmitter and receiver operation and wave form

PIN DESCRIPTION		
PIN 1	GND	GROUND
PIN 2	VCC	+DC SUPPLY
PIN 3	$\overline{TXD}$	TX DATA INPUT
PIN 4	$\overline{TXE}$	TX ENABLE–ACTIVE LOW
PIN 5	$\overline{RXE}$	RX ENABLE–ACTIVE LOW
PIN 6	MON	ANALOG OUTPUT
PIN 7	$\overline{RXD}$	RX DATA OUTPUT
PIN 8	GND	GROUND
PIN 9	$\overline{AGC}$	"AGC" VOLTAGE OUTPUT– [Fig.2]

NOTE:

The data must be preceded by a "Preamble" (a "1" or a sequence 0-1-0-1-) 1 to 3 ms long to stabilize the "AGC" level. The "AGC" (Automatic Gain Control) is the system employed by the receiver to adapt its own sensitivity to the received peak RF level. Data must be "packetized" with no gaps between bytes and must be initialised with an "XON" and terminated by an "XOFF" a "CRC" or Check-Sum. Data can be detected sampling the middle of every bit period. Synchronization can be obtained controlling the edges of start byte or message taking into consideration that a weak signal at the receiver input will produce some "Jitter" effect on the rising and falling edge of the bits.