B3RX1612
X-Band Low Noise Front End

DESCRIPTION

The B3RX1612 is a low noise front end for X-band marine radar receiver. It comprises a low noise amplifier with monitor circuit, an image rejection mixer and an electronically tuned local oscillator.

Frequency range	9320 to 9500	MHz
I.F. output frequency	60	MHz
Noise figure	2.5	dB

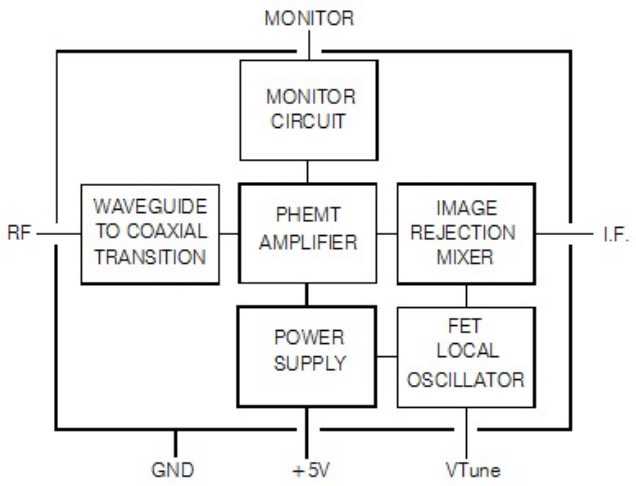
GENERAL DATA

Operating voltage	5	V d.c.
Operating current	60	mA
Overall dimensions	88 x 31 x 42 mm	max
Net weight	100 g	approx
Waveguide size	WR90	(WG16)

MAXIMUM AND MINIMUM RATINGS

	MIN	MAX	
Operating voltage (see note 1)	-	+6	V
Tuning voltage	0	45	V
R.F. input (1uS,1kHz, repetitive)	-	500	mW
Body temperature:			
Operating	-30	+85	°C
Storage	-55	+125	°C
Vibration (50Hz)	-	20	g
Shock (11ms, half sine)	-	25	g

BLOCK DIAGRAM



TYPICAL OPERATION

Operating Conditions

Operating voltage	5.0 +/- 0.2V
Signal frequency	9410 +/- 90MHz
Local Oscillator frequency	
tuning voltage 4V	9380 MHz max
tuning voltage 24V	9560 MHz min

TYPICAL Performance (at 25 ^{0}C)

	Min	Typ	Max	
Operating current	-	55	100	mA
Noise figure	-	2.5	3.5	dB
Conversion gain	2.5	5.0	-	dB
Image rejection ratio	15	20	-	dB
Frequency pulling (See note 2)	-	0.2	0.6	MHz
Input power at 1dB compression	-10	-	-	dBm
Saturated I.F. output	0.8	1.0	-	V
Local Oscillator Switch on drift (3min to 40min)	-	-	4	MHz
Local Oscillator temperature drift	0	-200	-350	kHz/°C
Tune rate	10	14	18	MHz/V
I.F. frequency (3dB B.W.)	50	60	70	MHz
I.F. output impedance	-	50	-	Ω
Tune I/P impedance	1	-		MΩ
Monitor voltage	30	50	70	mV

NOTES

1. Positive only; negative voltage must not be applied.
2. Input power 10 dBm.
3. External voltages must not be applied to the I.F. or monitor terminals.

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M209913A Version 2, June 2016
Template: DF764388A-11
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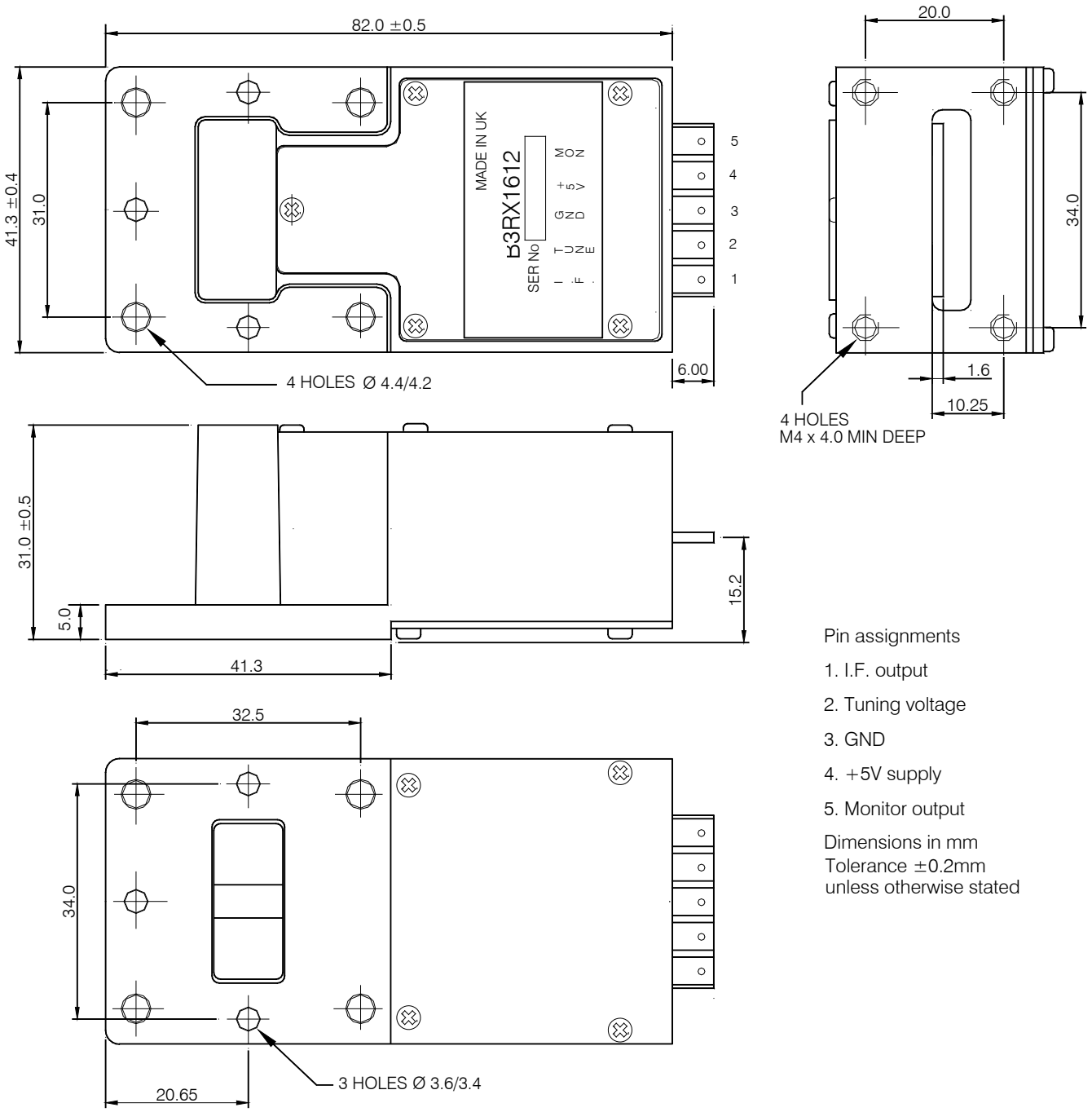
OUTLINE (All dimensions in mm; dimensions without limits are nominal)



Pin assignments

1. I.F. output
2. Tuning voltage
3. GND
4. +5V supply
5. Monitor output

Dimensions in mm
Tolerance ±0.2mm
unless otherwise stated