K-Band
Doppler Sensor Module

RF Frequency: 24.05 to 24.25 GHz

Model No. NJR4262

Specifications
Rev.00-02 February 26, 2013

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New Japan Radio Co., Ltd.
Microwave Components Division

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Category: K-Band Doppler Sensor Module
Type Name: NJR4262

Description:

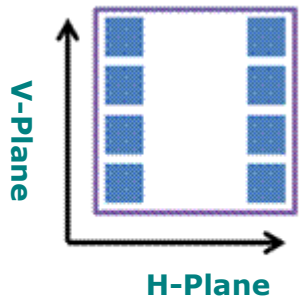
- Motion detector using microwave doppler effect
- Miniaturized RF circuit with MMIC technology
- High accurate I-Q mixer

Specification:

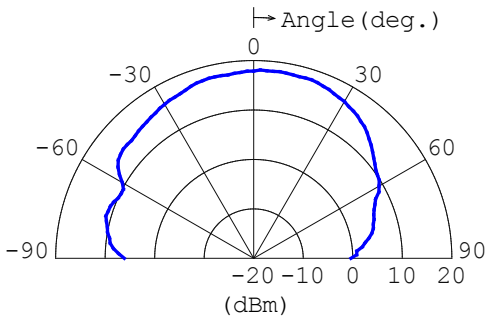
1. Electric Characteristics (Common measure condition Ta= +25 deg.C)

Item	Specification			Unit	Condition / Note
	Min.	Typ.	Max.		
1.1 Operation voltage	3.3	-	5.5	V	
1.2 Operation current	-	45	55	mA	
1.3 Operation frequency	24.05	-	24.25	GHz	
1.4 E.I.R.P.	-	+16 (40)	+20 (100)	dBm (mW)	
1.5 Frequency Stability	-1	-	0	MHz/deg.C	Ta= -20 to +60 deg.C
1.6 Start-up time	-	4	6	msec	
1.7 2nd Harmonics (E.I.R.P.)	-	-	-30	dBm	
1.8 Radiation pattern	-	-	-	-	See Fig.1: Typical Radiation Pattern.
1.8.1 −3dB beam width (H-plane)	-	70	-	deg.	
1.8.2 −3dB beam width (V-plane)	-	28	-	deg.	
1.8.3 Side lobe suppression (H-plane)	-	-	-	dB	No side lobe
1.8.4 Side lobe suppression (V-plane)	-	13	-	dB	
1.9 Noise Voltage	-	-	400	mV	Upon amplified with 85dB Gain amp. Band width: 10 to 300Hz
1.10 Signal level	0.5	0.8	-	Vp-p	Refer to Fig.2 : Signal Test System
1.11 Offset voltage	1.1	1.35	1.6	V	
1.12 I-Q Amplitude Balance	-3	-	+3	dB	
1.13 I-Q Phase Balance	85	-	95	deg.	

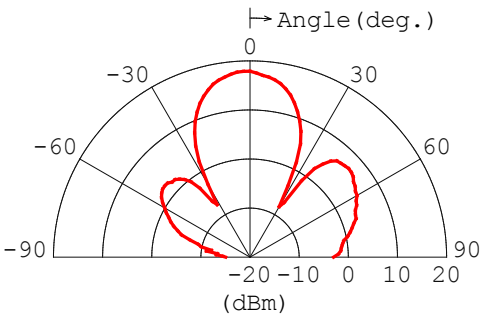
Fig.1: Typical Radiation Pattern



H-plane
70 deg. (±35 deg.)



V-plane
28 deg. (±14 deg.)



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2. Mechanical characteristics

Item	Specification
2.1 Size	25(W) x 25(D) x 7.3(H) mm Tolerance: ±0.5 mm
2.2 Weight	7 g max.
2.3 Interface / Pin assignment	Pin Size: 0.64 mm square Pin Pitch: 2.54 mm

Pin	Description
IF-I	Doppler signal output(I). Output impedance:1.5kohm
GND	GND
IF-Q	Doppler signal output(Q). Output impedance:1.5kohm
VCC	Voltage supply.
NC	No connection.

Recommended via hole diameter: 1.2 ± 0.05 mm

3. Environmental characteristics

Item	Specification
3.1 Operation Temperature	-20 to +60 deg.C
3.2 Storage Temperature	-40 to +80 deg.C
3.3 Humidity	0 to 95 % @ +30 deg.C
3.4 Vibration	49.03 m/s^2 (5 G) 30 to 50 Hz, 10 minutes, XYZ direction
3.5 Shock	196.13 m/s^2 (20 G) Half sine, 11 msec, XYZ direction, 3 times

4. Absolute Maximum Rating

Item	Specification			Unit	Condition / Note
	Min.	Typ.	Max.		
4.1 Supply voltage	0	-	7	V	
4.2 Operation Temperature	-40	-	+85	deg.C	No damage
4.3 Storage Temperature	-40	-	+85	deg.C	

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5. Outline

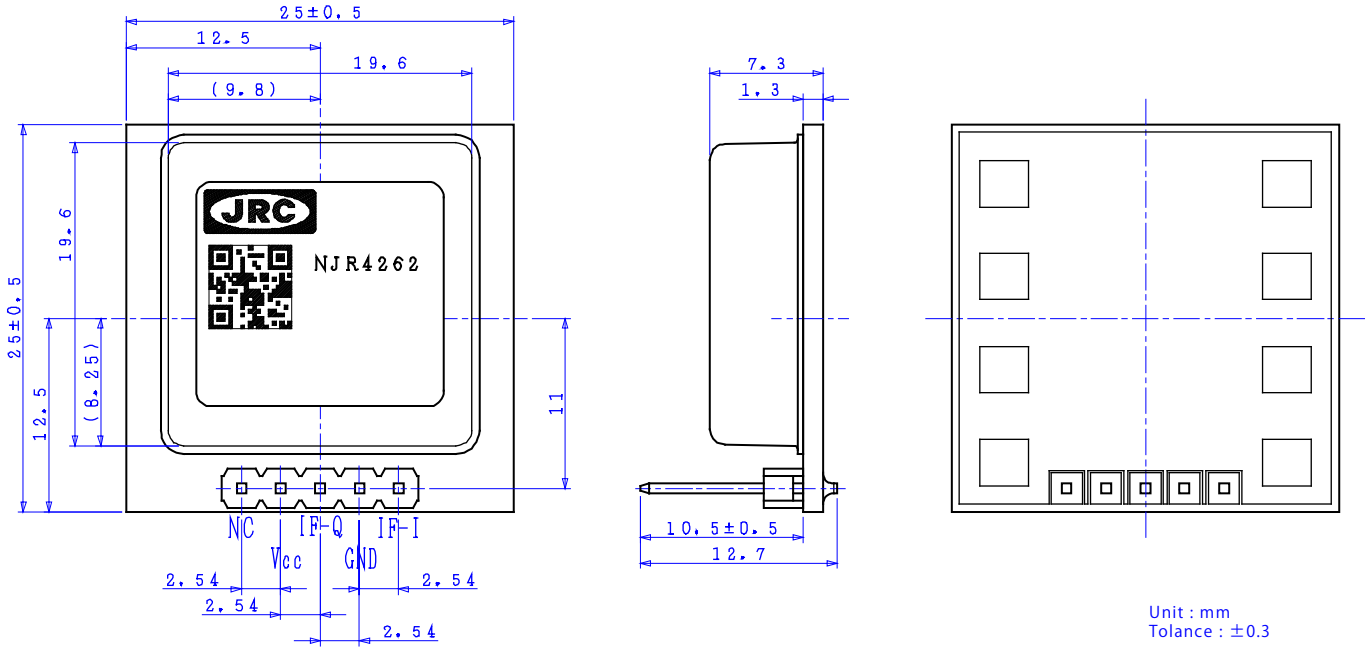

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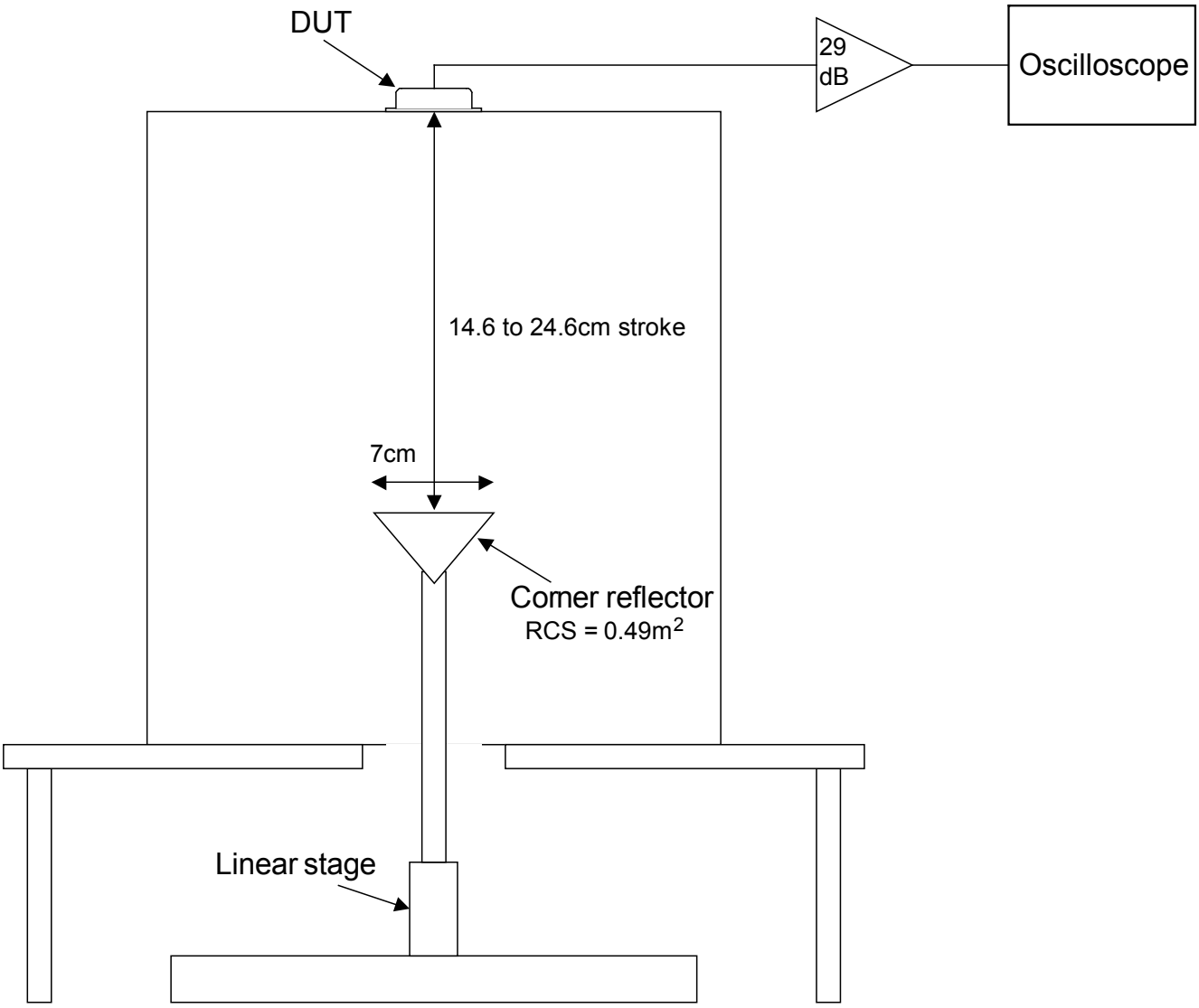
Fig2. Signal Test System



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Телефон: 8 (812) 309-75-97 (многоканальный)
Факс: 8 (812) 320-03-32
Электронная почта: ocean@oceanchips.ru
Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А