K-Band
Doppler Sensor Module

RF Frequency: 24.075 to 24.175 GHz

Model No. NJR4262F3P3/F3P5

Specifications
Rev.00-03 December 15, 2014

Caution

1. NJRC strives to produce reliable and high quality microwave components. NJRC's microwave components are intended for specific applications and require proper maintenance and handling. To enhance the performance and service of NJRC's microwave components, the devices, machinery or equipment into which they are integrated should undergo preventative maintenance and inspection at regularly scheduled intervals. Failure to properly maintain equipment and machinery incorporating these products can result in catastrophic system failures.

2. To ensure the highest levels of reliability, NJRC products must always be properly handled. The introduction of external contaminants (e.g. dust, oil or cosmetics) can result in failures of microwave components.

3. NJRC offers a variety of microwave components intended for particular applications. It is important that you select the proper component for your intended application. You may contact NJRC's sales office or sales representatives, if you are uncertain about the products listed in the catalog and the specification sheets.

4. Special care is required in designing devices, machinery or equipment, which demand high levels of reliability. This is particularly important when designing critical components or systems whose foreseeable failure can result in situations that could adversely affect health or safety. In designing such critical devices, equipment or machinery, careful consideration should be given to, amongst other things, their safety design, fail-safe design, back-up and redundancy systems, and diffusion design.

5. The products listed in the catalog and specification sheets may not be appropriate for use in certain equipment where reliability is critical or where the products may be subjected to extreme conditions. You should consult our sales office or sales representatives before using the products in any of the following types of equipment.
   * Aerospace Equipment
   * Equipment Used in the Deep Sea
   * Power Generator Control Equipment (nuclear, steam, hydraulic)
   * Life Maintenance Medical Equipment
   * Fire Alarm/Intruder Detector
   * Vehicle Control Equipment (automobile, airplane, railroad, ship, etc.)
   * Various Safety Equipment

6. NJRC's products have been designed and tested to function within controlled environmental conditions. Do not use products under conditions that deviate from methods or applications specified in the catalog and specification sheets. Failure to employ NJRC's products in the proper applications can lead to deterioration, destruction or failure of the products. NJRC shall not be responsible for any bodily injury, fires or accidents, property damage or any consequential damages resulting from the misuse or misapplication of its products. PRODUCTS ARE SOLD WITHOUT WARRANTY OF ANY OF KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

7. The product specifications and descriptions listed in the catalog and specification sheets are subject to change at any time, without notice.

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Category: K-Band Doppler Sensor Module
Type Name: NJR4262F3P3, NJR4262F3P5

Description:

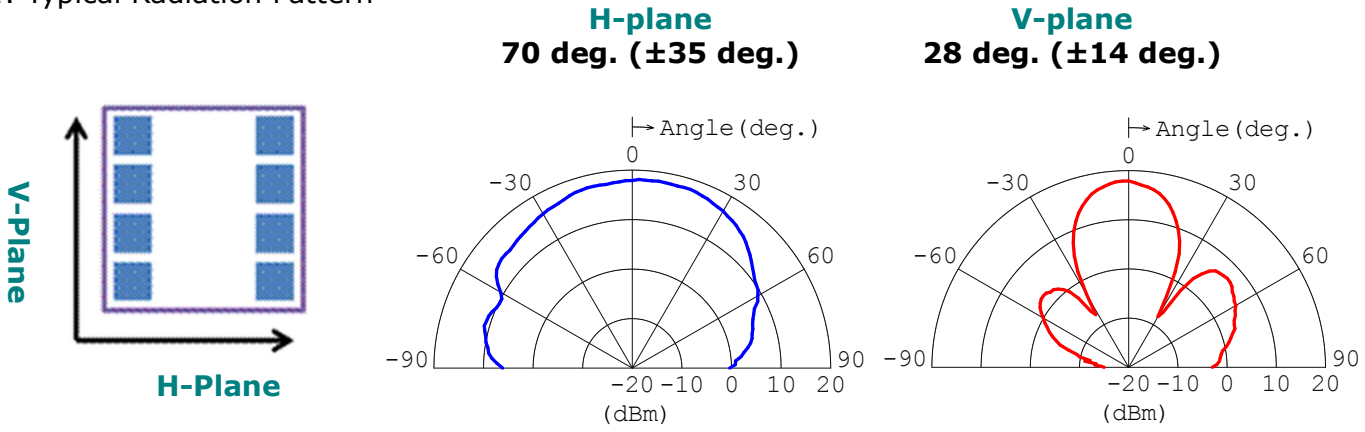
- Motion detector using microwave doppler effect
- Miniaturized RF circuit with MMIC technology
- High accurate I-Q mixer

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	-	24.125	-	GHz	
1.4 E.I.R.P.	-	+16 (40)	+17 (50)	dBm (mW)	*measured value Field Strength at 3m 109.1dBuV/m (Average) 109.3dBuV/m (Peak)
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	
I-Q Amplitude Balance	-3	-	+3	dB	
I-Q Phase Balance	85	-	95	deg.	

Fig.1: Typical Radiation Pattern



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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

NJR4262F3P3	NJR4262F3P5	Descreption
-	IF-I	Doppler signal output
GND	GND	GND
IF-Q	IF-Q	Doppler signal output
VCC	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. FCC Statement

Responsible party:
New Japan Radio Co.,Ltd.
1-1, Fukuoka 2-chome Fujimino city Saitama Japan
+81-49-278-1271 Fax: +81

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.
(2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE:

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution:

When this module is installed in the host product, this module shall be connected directly to a PCB of the host product, and shall not extend connection distance by cable etc.

WARNING:

The FCC regulations provide that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Manual and Product Labeling information To The End User:

The end user manual shall include all required regulatory information/warning as show in this manual.

And when this module is installed in the host product, you must include a "**Contain FCC ID: 2ACUJR4262** " in the label of the host product.

This equipment complies with radio frequency exposure limits set forth by the FCC for an uncontrolled environment.

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

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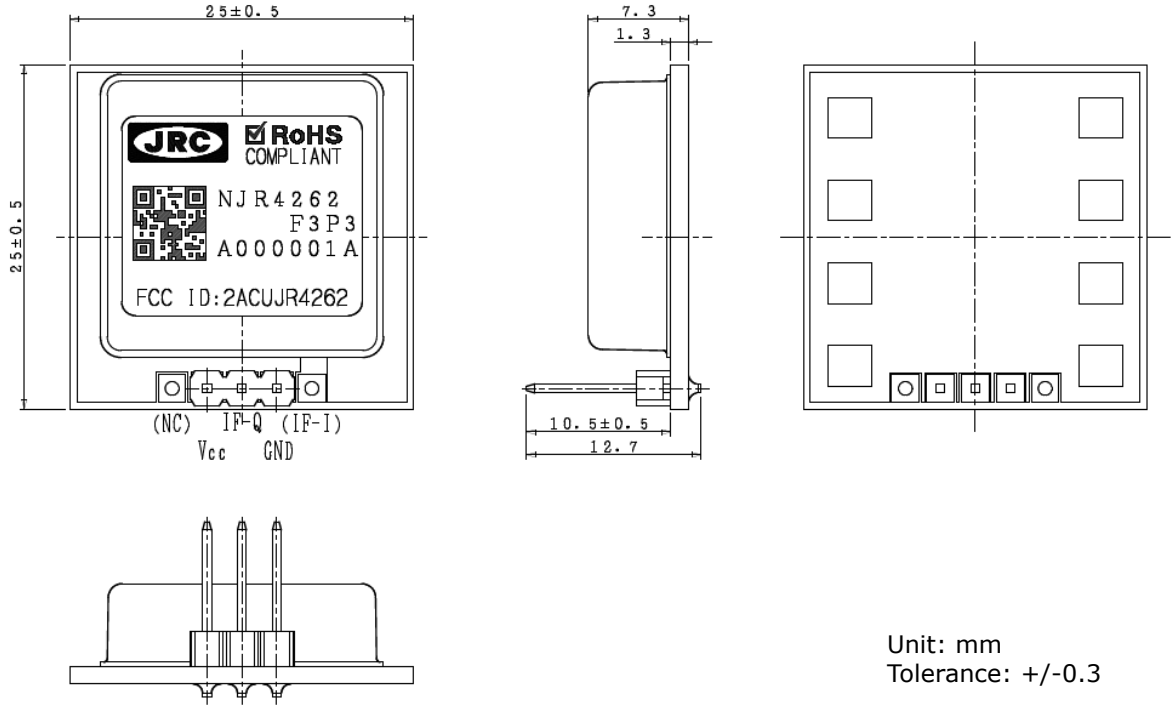
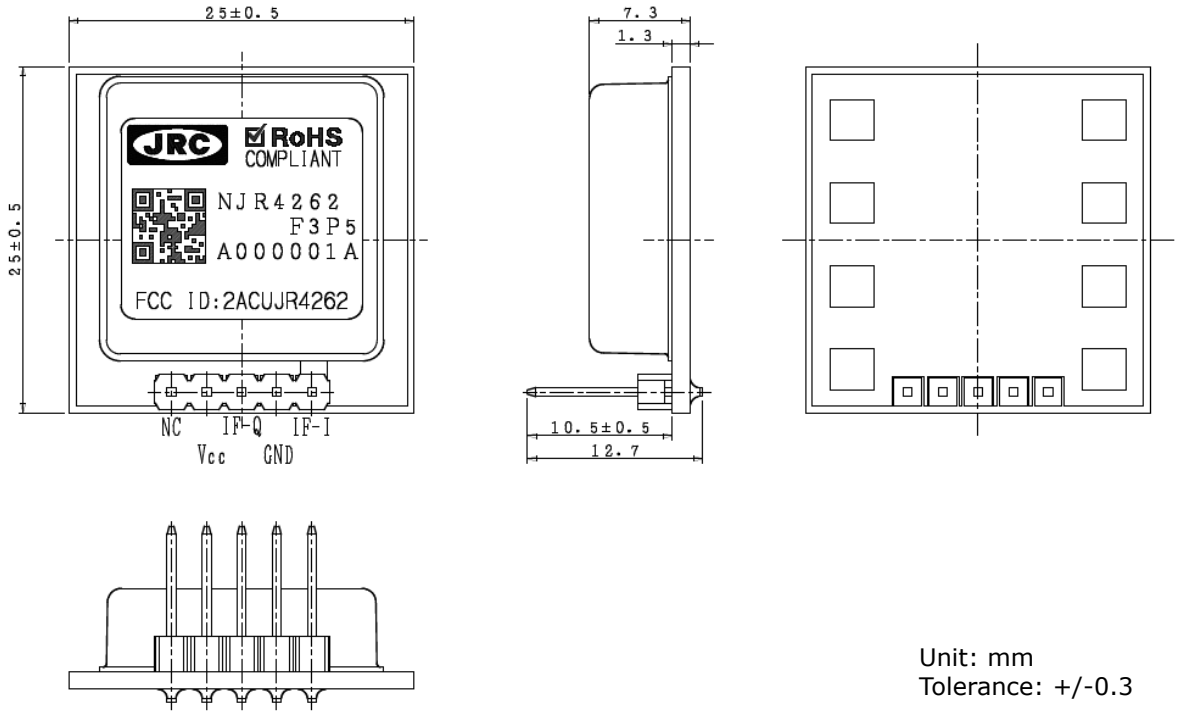
5. Outline

*NJR4262F3P3



Unit: mm
Tolerance: +/-0.3

*NJR4262F3P5



Unit: mm
Tolerance: +/-0.3

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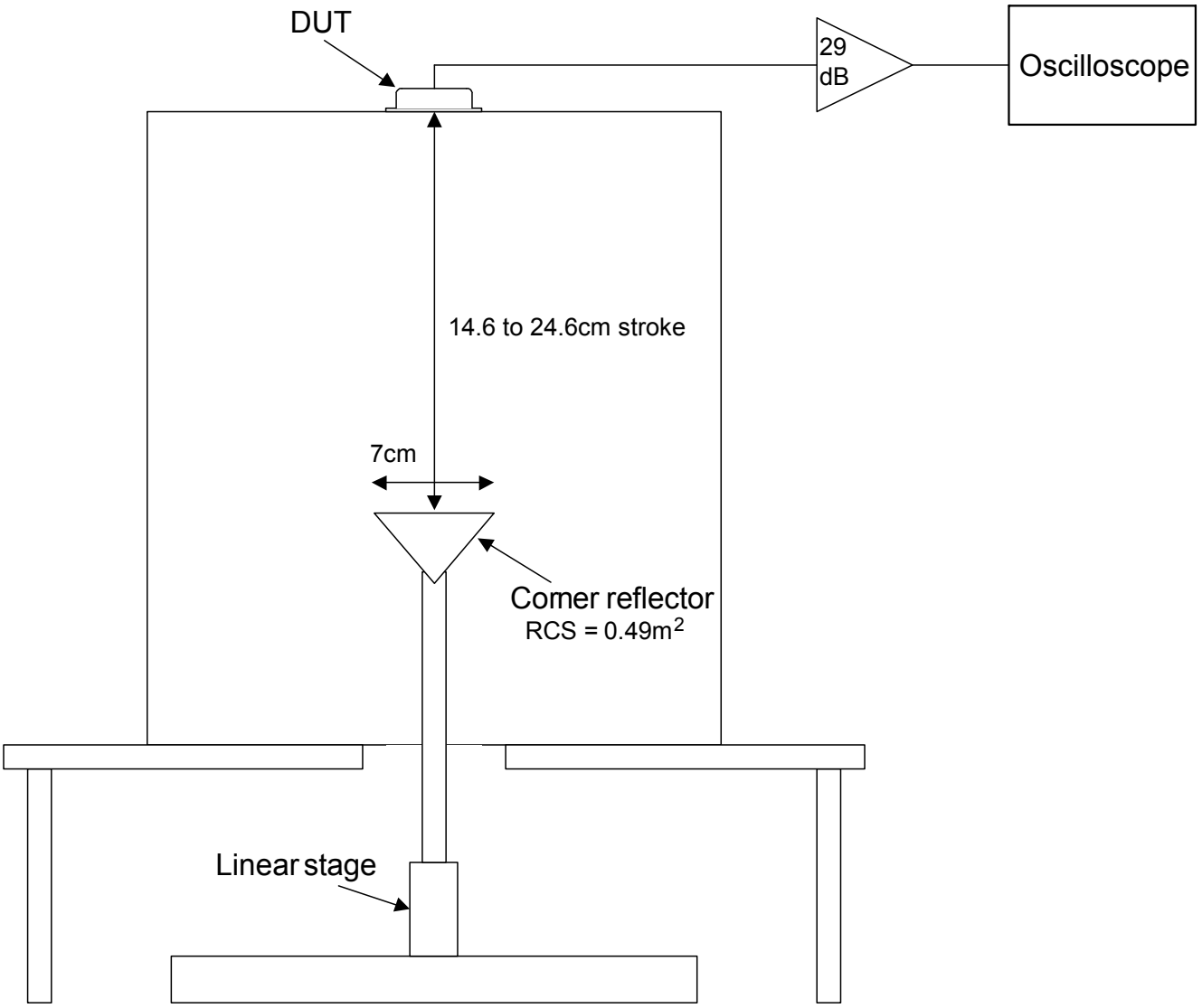
Fig2. Signal Test System



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