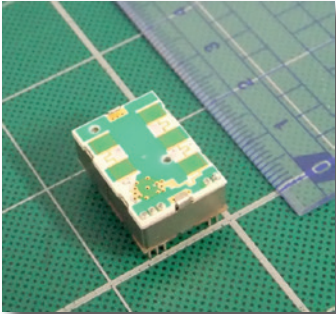


MOTION SENSOR NJR4265/ K-BAND INTELLIGENT DOPPLER MODULE



WaveEyes™

NJR4265 J1 is intelligent motion sensor that is designed for the sensing of short distance low speed movement object of pedestrian etc. The steady sensing of moving object is realized by embedded software. It is suitable for the built-in use of the sensing function to various equipments as all functions are integrated in a small package and it can easily control from PC/MCU by UART interface. Further stand alone operation is also possible.

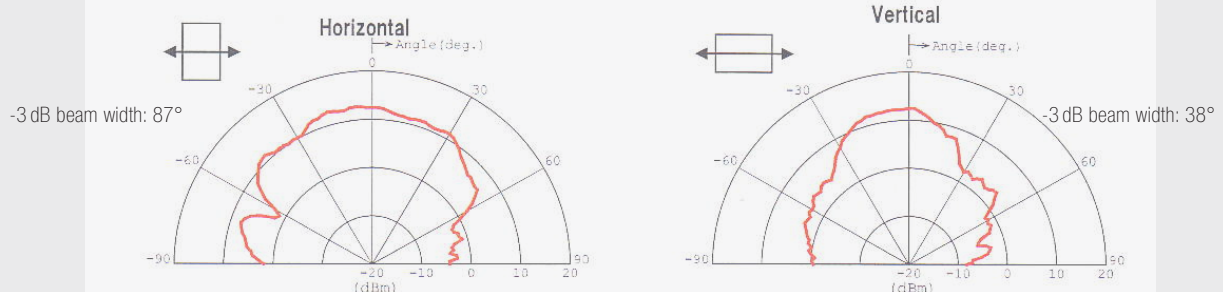
FEATURES

- » Motion Sensor based on 24 GHz Microwave Doppler Effect Technologies
- » Antenna, RF circuit, IF amp, MCU and voltage regulator are integrated in a small package (14 × 20.4 × 8.8 mm)
- » Signal processing software for the steady sensing
- » Enhancing signal from movement object and decreasing random noises
- » Decreasing mutual interference between sensors
- » Identification of movement direction (approaching and leaving)
- » Low voltage operation and low power consumption
- » Communication with PC/MCU is available by UART interface and stand alone operation is also possible

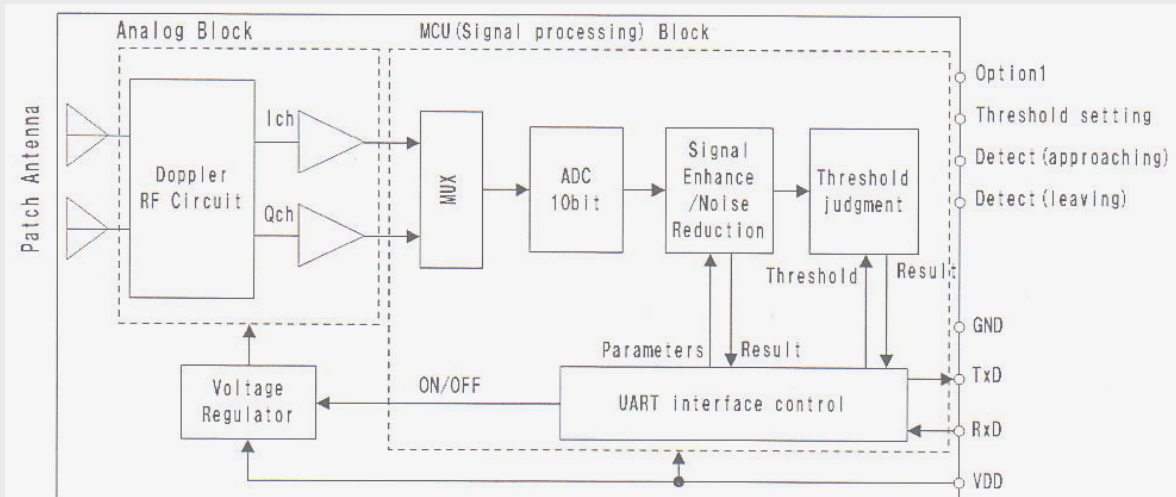
APPLICATIONS

- » Energy saving equipment (lighting equipment, air conditioner and etc.)
- » Room access control system equipment
- » Human detection sensor for various instruments

TYPICAL RADIATION PATTERN



FUNCTIONAL BLOCK DIAGRAM



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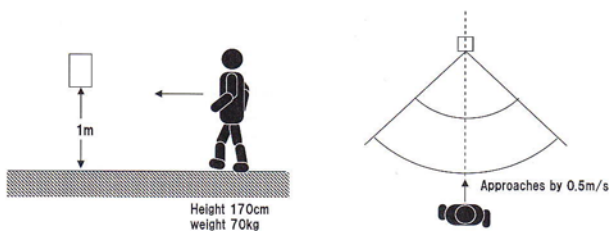
ELECTRICAL CHARACTERISTICS

PARAMETER				
	MIN.	TYP.	MAX.	
Power supply	Operating voltage [V]	3.0	3.3/5.0	5.25
	Current consumption/sensing mode [mA]	-	60	-
	Current consumption/Sleep Mode [mA]	-	4	-
Sensor RF	Conformity standard	ARIB STD-T73		
	Operating frequency [GHz]	24.05	-	24.25
	Frequency stability (-20°C ... +60°C) [MHz/°C]	-1	-0.7	0
	Output power (E.I.R.P.) [dBm]	9	-	14
	2nd Harmonics [dBm]	-	-	-30
Antenna	-3dB beam width (horizontal) [°]	-	87	-
	-3dB beam width (vertical) [°]	-	38	-
	Side lobe suppression (horizontal/vertical) [dB] *	-	-	-

* no side lobes

MESUREMENT COND. OF DETECTING PERFORMANCE

- » Temperature: $T_a = 25^\circ\text{C}$
- » Target of measurement: 1 adult 1.70 m, 70 kg approaching at the rate of 0.5m/s from the front of sensor
- » Installation: Sensor is installed as the antennas horizontally in a height of 1m from the ground.



SENSING PERFORMANCE

- » Speed range of target: 0.25 ... 1 m/s
- » Max. distance in the front: 10 m
- » Detectable angle: $\pm 35^\circ$

ENVIRONMENTAL CHARACTERISTICS

- » Operating temp. range: $-20^\circ\text{C} \dots +60^\circ\text{C}$
- » Storage temp. range: $-40^\circ\text{C} \dots +80^\circ\text{C}$
- » Humidity: 0-95% @+30°C
- » Vibration: 49.03 m/s² (5 G) 30~50 Hz, 10 Min., XYZ direction
- » Shock: 196.13 m/s² (20 G) half sine, 11 ms, XYZ direction, 3x

OUTLINE DRAWING (mm)

