

Not for New Design

FCL Components Wireless Modules

24GHz Doppler Radar Sensor

FWM7RAZ01

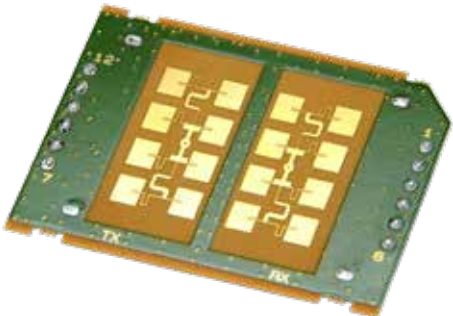
Overview

FCL Components' 24GHz Doppler Radar Sensor FWM7RAZ01-200002 is a sophisticated product which includes a 24GHz transceiver, TX and RX array antennas, I/F amplifier, MCU, DAC, E2PROM and an LDO voltage regulator all integrated in to a single, compact module.

The compact package, 30mm x 40mm x 9.5mm, includes a pin header on the back for hassle-free, easy integration, even for customers who aren't familiar with high-frequency circuits.

This sensor is suitable for a wide variety of applications including vital sensing, machine monitoring, and any other moving objects detection and analysis.

The standard product line-up is available in Japan, China and North America, with plans to expand to other regions in the future.



FWM7RAZ01

Features

- 24GHz radio wave provides stable sensing environment.
- 3 channels selectable operation prevents interference between adjacent sensors.
- Very low noise outputs of IFs (I, Q) support the detection of objects varied in size and distance.
- Stable transmission frequency supports accurate target object detection.
- Wide frequency range IFs (I, Q) output supports the detection of objects from very slow speeds to super-fast speeds.

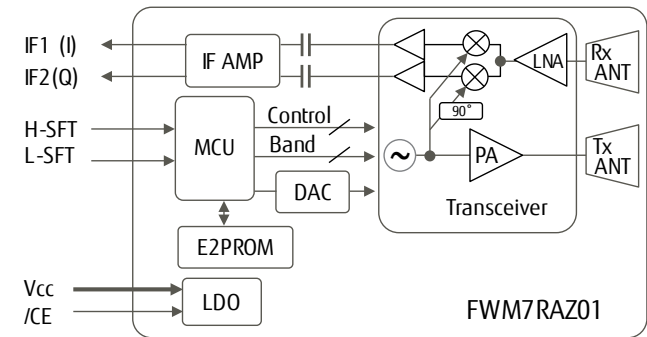


Fig. 1 Functional block diagram

■ Evaluation board

Part number	Details
FWM-ORCA-EVB1	Evaluation board for FWM7RAZ01 Doppler Radar sensor Package includes: <ul style="list-style-type: none">- Board (1 pc)- Upright stand (1 pc)- 3.5mm stereo mini plug cable (1 pc)- Micro USB cable (1 pc)



FWM-ORCA-EVB1
(Doppler Radar Sensor not icluded)

■ Specifications

Item	Specifications
Part number	FWM7RAZ01-200002
Operating frequency band	24.075 to 24.175 GHz (North America) / 24.050 to 24.250 GHz (Japan and China)
Output power	+9 to +13dBm EIRP typical
Detection method	Doppler method
Number of channels	3 channels
Interface	Intermediate frequency (I/Q) analog signal, PIO
Connector	2.54mm pitch pin header
Operating voltage range	+3.4 to 5.5VDC
Current consumption	63mA @ operating, 0.5mA @ disable
Antenna	2 x 4 array for TX and RX
Dimensions	30 x 44 x 9.5mm
Certification	FCC, IC (planned), Radio Act (Japan)

■ Pin descriptions

Pin No.	Pin name	I/O	/CE=L	/CE=H	Description
1	Rev1	In	Hi-Z	Hi-Z	Reserved pin (not connected)
2	/CE	IH	Pull-up to Vcc	Pull-up to Vcc	Enable (low active), this pin is pulled up to Vcc by 10KΩ internally
3	Vcc	Po	-	-	Power supply DC +3.4 to +5.5V
4	GND	-	-	-	GND
5	IF1	Aout	Vcc/2	Hi-Z	I output
6	IF2	Aout	Vcc/2	Hi-Z	Q output
7	Rev2	Dout		Hi-Z	Reserved pin (not connected)
8	L-SFT	IL	Pull-down	Pull-down	Channel selection, this pin is pulled down to GND by 100KΩ internally
9	GND	-	-	-	GND
10	Rev3	In	Hi-Z	Hi-Z	Reserved pin (not connected)
11	H-SFT	IL	Pull-down	Pull-down	Channel selection, this pin is pulled down to GND by 100KΩ internally
12	Rev4	-	Hi-Z	Hi-Z	Reserved pin (not connected)

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