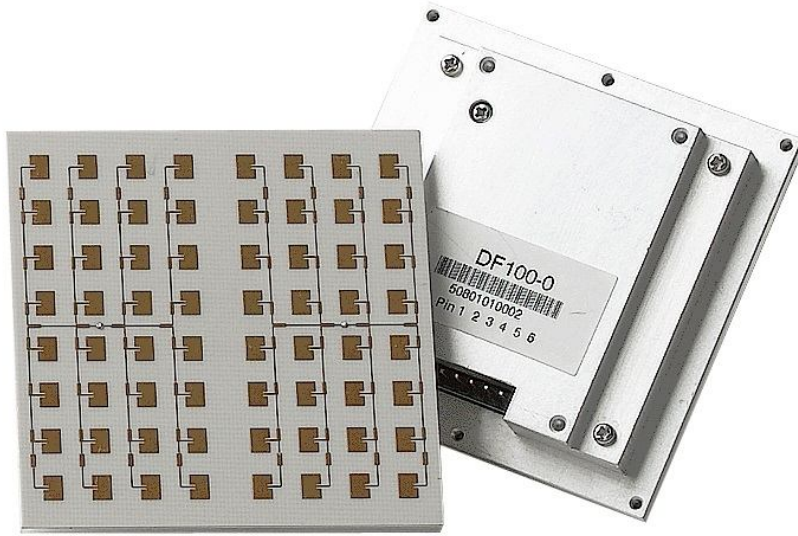


DF100

Long Range K-band Microwave Sensor



Features:

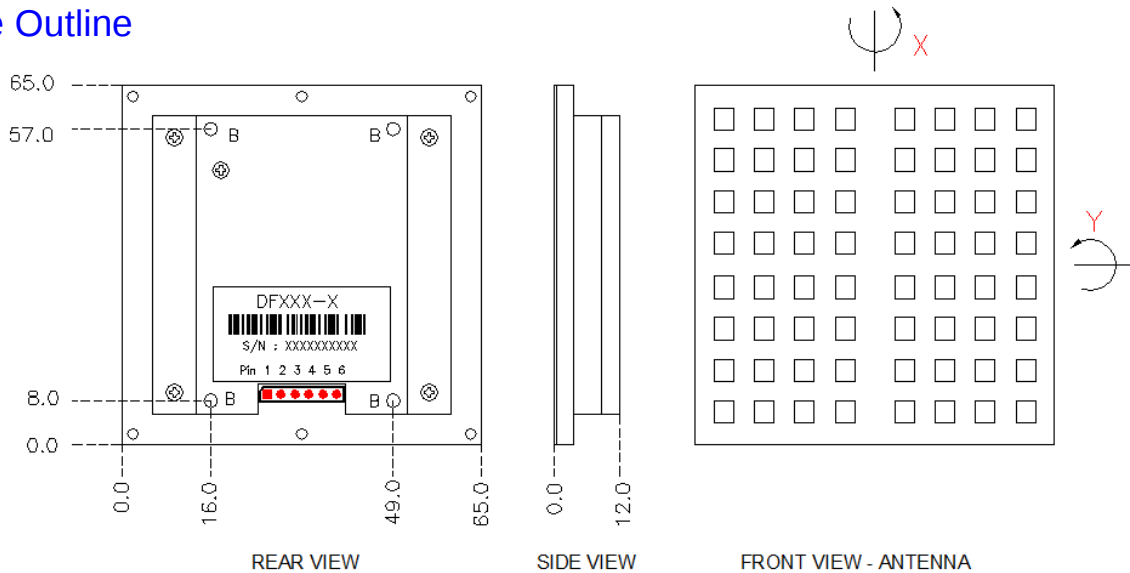
- Long detection range
- Flat profile
- I and Q channels

Applications:

- Motion detection
- Traffic counting
- Speed measurement

The DF100 series microwave sensor is a K-band bi-static Doppler transceiver. It consists of a dielectric resonator oscillator (DRO), a low noise amplifier (LNA) and IF amplifiers for increased sensitivity. It also has I-Q channels to discriminate motion directions. It is suitable for traffic applications such as traffic counters and speed detectors.

Module Outline



Pin	Name	Description
1	$\overline{\text{EN}}$	Active low enable pin
2	V_{IN}	+5 V _{DC}
3	GND	Ground
4	I	Channel I
5	Q	Channel Q
6	NC	Not connected

Note 1: DF100-0 complies with EN 300 440.

Note 2: DF100-0 complies with FCC part 15.245.

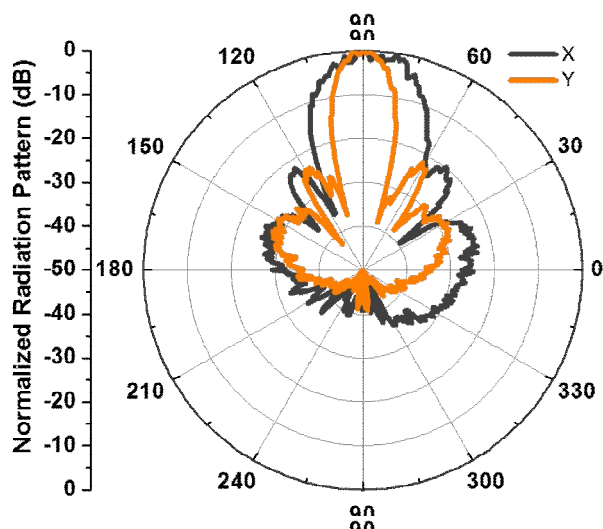
Note 3: Built-in voltage regulator ensures the performance of the sensor is independent of voltage supply.

I. All dimensions are in mm.

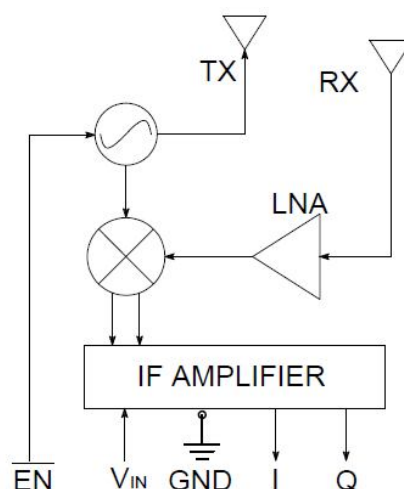
II. Mounting screw hole (B) is M2.5 with depth 3.5mm.



Antenna Beam Pattern



Block Diagram



Technical Specifications

Unless noted otherwise, the specifications are measured in CW mode, $V_{IN} = +5 V_{DC}$ and 12k ohm load at +25°C.

Parameter	Remarks	Min	Typical	Max	Units
Operating Conditions					
Supply voltage, V_{IN}		3.6	5	9	V_{DC}
Current consumption	$\bar{EN}$ (on/off)		40/15	60/25	mA
Operating temperature		-40		80	°C
Transmitter					
Operating frequency	DF100-0	24.120	24.125	24.130	GHz
	DF100-1	24.195	24.200	24.205	GHz
Radiated power (EIRP)			20		dBm
Spurious emission				-30	dBm
Receiver					
I&Q amplitude balance			0.5	3	dB
I&Q phase difference		70	90	110	°
IF amplifier gain			50		dB
IF amplifier bandwidth			180-16k		Hz
Antenna					
Antenna beam-width (3 dB) - X			24		°
Antenna beam-width (3 dB) - Y			12		°
Antenna sidelobe rejection			19		dB
Physical Properties					
Dimensions			65×65×12		mm
Weight			75		g