

80 GHz Radar Level Sensor Module Development Kit

76–81 GHz FMCW radar for non-contact level and distance measurement

Development board. Development kit edition: the board plus a configuration GUI, application firmware builds, a flashing guide, and light engineering changes for your setup. Embedded firmware and GUI source code are not included in any edition. For source code, custom firmware, or bare modules in volume, use the B2B form at kymopsis.com/b2b/ or email support@kymopsis.com.

Overview

A compact 80 GHz radar module covering the full 76–81 GHz band, for non-contact distance and liquid or solid level measurement in tanks, silos, sumps, and open channels. The wide bandwidth gives fine range resolution; a radome, lens, or horn narrows the beam where tank walls and fittings would otherwise cause false echoes.

Applications

- Liquid and solid level measurement in tanks and silos
- Sump and open-channel level
- Non-contact distance measurement
- Level transmitter product development

Specifications

Frequency	76–81 GHz, FMCW
Transmit power	12 dBm
Antenna gain	9 dBi
Beam (–3 dB)	100° horizontal, 80° elevation (bare board)
Range	15 m typical, 20 m standard configuration, up to 30 m with a lens (not included)
Blind zone	6 cm
Accuracy	±1 mm
Response time	200 ms
Interfaces	UART (UART0 default, 115200 baud), SPI, I2C
Memory	1 MB flash, 192 KB SRAM
Supply	3.1–3.5 V (3.3 V typical); 135 mA typical, 600 mA max; ripple ≤ 50 mV; source ≥ 1 A
Analog input AIO1	Do not exceed 1.35 V
Operating temperature	–40 °C to 85 °C

Values are typical figures stated by the module maker, not a Kymopsis lab report. Performance depends on mounting, enclosure, target, and scene.

Mechanical

Mounting	Above the target, centered, antenna parallel to the surface
Power inputs	Two 3.3 V inputs (J2, J3)
Options	Radome, lens, and horn versions: ask through B2B

Integration notes

- A narrow beam (lens or horn) keeps energy on the product surface and off ladders, agitators, inlets, and weld seams.
- The USB debug interface board is a separate item.

Regulatory status. This board is sold as a development kit for engineers, developers, and integrators. It is not FCC certified, and this datasheet does not claim CE or any other certification. It is not an authorized transmitter for unrestricted installation or operation. A finished product that uses it needs its own equipment authorization; Kymopsis can scope that work through its B2B program but does not issue grants.

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