

## A-3-001-01

# Microwave Radar Module

**Part No : A300101**

**Approve :**

**Date :**

## Microwave Radar Module

### 1. Description

The A300101 is a fully-integrated single-chip radar transceiver designed for excellent performance with powerful features in cost effective remote sensing systems.

The A300101 is suitable for system targeted at US FCC CFR47 Part15.245 and EU ETSI EN300 440 regulations compliance. The device is intended for X-band operation covering the SRD (Short Range Device) frequency bands at 9.5-9.975 GHz and 10.5-10.6 GHz.

The A300101 is software configurable supporting not only CW/FMCW operation but also RichWave's unique IF-CW/IF-FMCW mode for range extension and devices co-existence.

### 2. Features

#### Power Supply

- 2.5 V to 3.6 V supply voltage
- POR with 2.2 V PFR function

#### Power Saving Option

- Supports CW/FMCW in low power mode operation
- Fine tuning available via power

#### management CW/FMCW Transceiver SoC

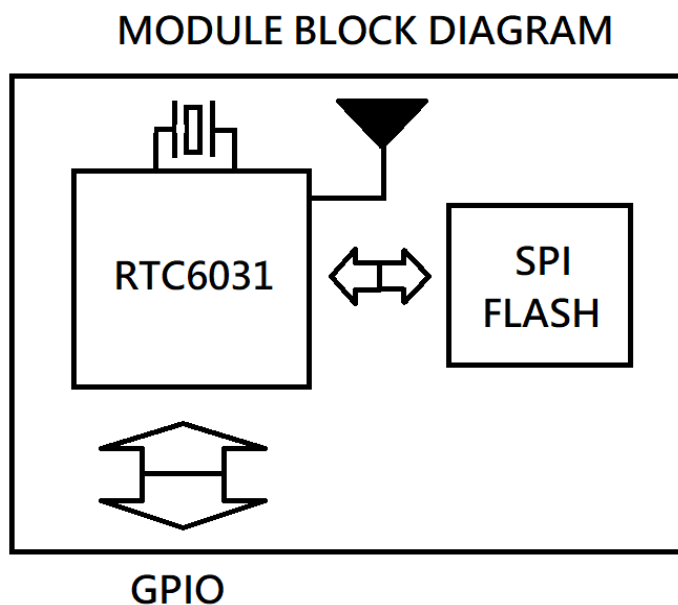
- 9.5 to 10.6 GHz X-band coverage
- CW/FMCW/IF-CW/IF-FMCW mode operation
- Integrated transmitter, receiver, FSYN, ADC/DAC.
- On-chip digital filter for noise-suppressed digital raw data
- High-accurate FMCW chirp engine driven by fractional-N PLL
- Programmable sweep bandwidth and chirp
- Max +10 dBm TX power with 4-level preset
- 12 dB RX noise figure

- Flash-embedded application-specific detection algorithm available
- Supports multiple sensors co-existence without co-channel interference
- Max. detection range adjustable
- Clock Source
  - Internal 25 MHz crystal oscillator
  - External 25 MHz clock support
- ATST ports for analog signal input/output
  - IF differential analog raw data
- GPIO ports for digital signal input/output
  - I2C or SPI control interface
  - Digital I/Q raw data
  - Flash memory data access
  - Detection indicator
  - Internal 25 MHz system clock
- 30mm x 30mm RoHS compliant, Pb-free, Halogen free package

### **3.Applications**

- Motion detection
- Range and velocity measurements
- Vital sign sensing
- Security and surveillance
- Wireless healthcare monitoring
- Smart lighting control
- Occupancy detection
- Safety guards

## 4. Module Block Diagram:



## 5. Module Dimensions:

