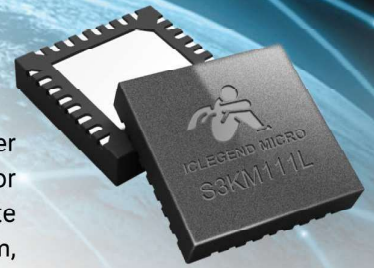


# mmWave Sensor SoC

## S3KM111L | S3 Series

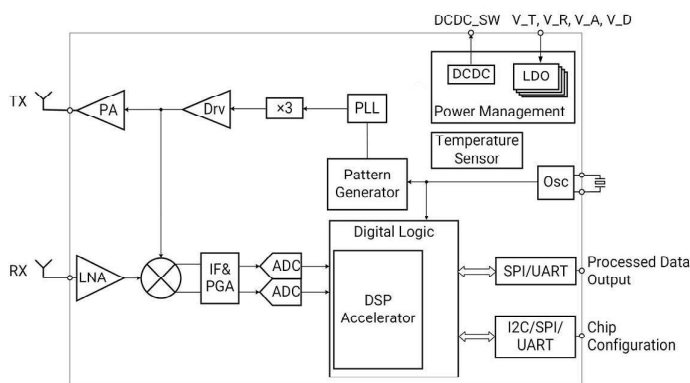


ICLM S3 series SoC has been optimized specially for AIoT applications, with smaller size, lower power consumption, easier-to-use, which has inspired various smart sensor designs. The S3 series SoC adopts fully integrated structures, by incorporating complete mmWave sensor systematic function blocks, providing flexibly configurable waveform, power, and gain. The embedded ADC and algorithm hardware accelerator empower excellent signal bandwidth and super precision.

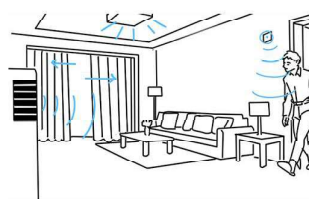
| Specifications     | S3KM111L        |
|--------------------|-----------------|
| Channels           | 1T1R            |
| Frequency          | 24 GHz~25 GHz   |
| Bandwidth          | 1 GHz           |
| TX Max. power*     | 12 dBm          |
| RX noise figure    | 10.5 dB         |
| Adjustable RX gain | 15 dB~31 dB     |
| PLL phase noise    | -97 dBc@ 1 MHz  |
| ADC Sample Rate    | 2.5 MSPS        |
| ADC Precision      | 16 bits         |
| Interface          | IIC/SPI/UART    |
| Operating voltage  | 3.0 V~3.6 V     |
| Operating current  | 63 mA           |
| Package            | 4 mm x 4 mm QFN |
| Temperature        | -40°C ~ 85°C    |

\*The power consumption is measured @ 50% chirp duty cycle with all circuits on.

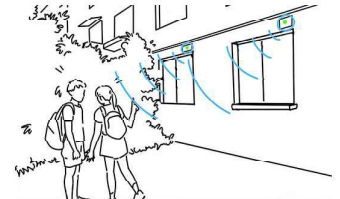
| Features  |
|---|
| <ul style="list-style-type: none"> <li>Single chip design<br/>Integrated Tx, Rx, ADC, PLL, DSP, and power management</li> <li>4 mm x 4 mm QFN package<br/>Hundred-mW level power consumption, suitable for AIoT applications</li> <li>Greater link budget, larger dynamic range, detect targets no matter near or far</li> <li>Embedded DCDC, single power supply, concise peripheral circuit design</li> </ul> |



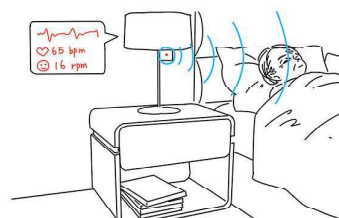
S3KM111L SoC block diagram



Presence Detection  
Domestic Appliances



Range and Speed Measurement  
Smart Security



Vital Sign Detection  
Intelligent Wellness



Gesture Recognition  
Smart Toilet

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ICLEGEND MICRO is committed to implementing smart RF technology and developing high-performance wireless SoC. Our products have been widely used in the wireless field such as millimeter wave sensors, next generation mobile communication, and satellite communication. Integrating our professional capabilities in the fields of chip systems, software, and algorithms, we are creating disruptive chips and application products, and empowering smart devices wireless perception, cognition and communication capabilities.

**WE MAKE RF SMART**