

OM-O2S / OM-O2SP

Omega2S IoT compute modules for OEMs

Overview

The Onion Omega2S is a Wi-Fi enabled, Linux compute module, designed specifically for IoT applications. It provides a drop-in, low-power solution for building IoT devices.

The module measures 34x20x2.8 mm and features a 580 MHz MIPS 24KEc processor, DDR2 DRAM, flash storage, and a Wi-Fi radio. The module is self-contained and only requires a power supply and an external WiFi antenna to operate.

By virtue of the Linux operating system, developers can create their own applications using their choice of programming language, and make use of existing network stacks and a rich set of packages to implement their desired software functionality.

Key Benefits

- Drop-in Wi-Fi enabled Linux compute module for IoT applications
- Dual mode 2.4 GHz 802.11 b/g/n Wi-Fi - simultaneously host a WiFi access point and connect to existing WiFi networks
- CPU, memory, and flash storage are built-in - Only requires external antenna
- OpenWRT Linux operating system
- Features I/O for USB, SD/eMMC storage support, ethernet, 3x UARTs, I2C, SPI, GPIOs
- FCC and CE certified



WiFi b/g/n
150Mbps



Linux OS

MIPS

MIPS CPU



USB 2.0
Host



Ethernet
10/100M



SDXC /
eMMC

OM-O2S / OM-O2SP

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Product Variants

Model	Name	RAM	Flash	Packaging
OM-O2S	Omega2S	64 MB	16 MB	SMT
OM-O2SP	Omega2S+	128 MB	32 MB	SMT

Specifications

CPU	
Chipset	MT7688AN
Architecture	MIPS24KEc
Clock Speed	580MHz

Memory	
Flash	16MB (OM-O2S) or 32MB (OM-O2SP)
DDR2 DRAM	64MB (OM-O2S) or 128MB (OM-O2SP)

WIFI	
WiFi Protocol	IEEE 802.11 b/g/n
Base Band	2.4GHz
Data Rate	150 Mbit/s
Channel Bandwidth	20/40 MHz
Operation Mode	AP, STA, AP&STA
Encryption Mode	WEP64/128, AES, WPA, WPA2, WAP

Interfaces	
Ethernet	1 (10M/100M)
USB 2.0 Host	1
SDXC/eMMC	1

SPI	1
I2C	1
I2S	1
UART	3
PWM	4
GPIO	Up to 30

Power Supply Requirement

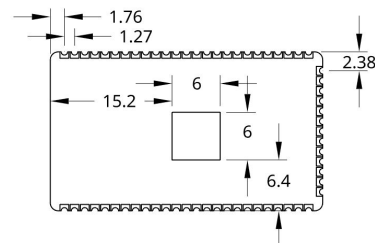
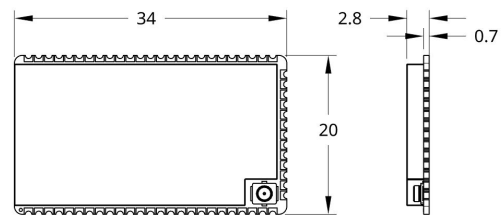
DC Input	3.3V
No-load Running Current	200±40mA
Peak Current Requirement	800mA

Operation Conditions

Ambient Temperature	-10°C ~ 55 °C
Storage Temperature	-20°C ~ 80° C
Operating Humidity	10%-95%RH (Non-Condensing)
Storage Humidity	5%-95%RH (Non-Condensing)

Dimension

Size 34*20*2.8mm



* All measurements in millimeters