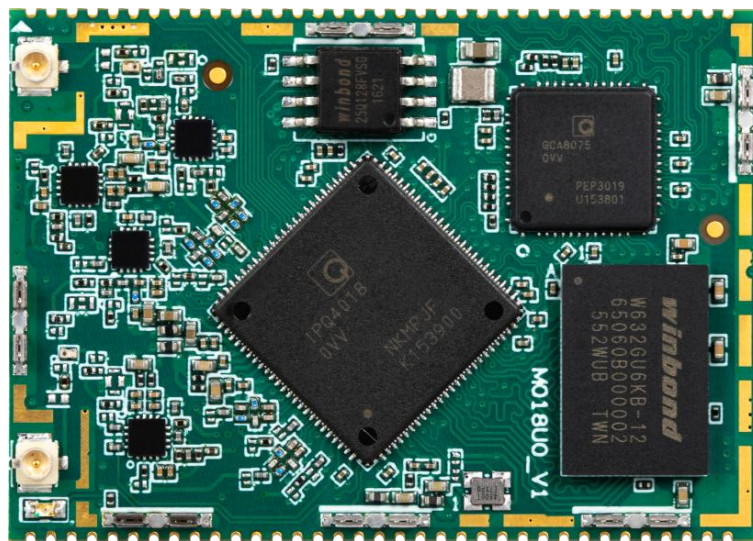




M018U0 Datasheet

802.11ac Wave2 SOM



The M018U0 is an IEEE 802.11ac Wave 2 compliant with Qualcomm IPQ4018 SoC based SOM(System on Module). It can deliver up to 26dBm (2 streams) high output power, but still keep a very compact dimension of 33mm(Length) x 44mm(Width) x 3mm (Height), making it a perfect WiFi solution for IOT(Internet Of Things) applications.

The Angara AC provides multiple interfaces including 7 GPIOs, UART, SPI, 5 x RGMII and USB 3.0 Host. The integrated 16MB Flash + 256MB DDR2 RAM makes it easy to run basic Linux applications under OpenWRT. Additional 16MB Flash is reserved in case of memory-heavy application is required.

Wireless	
WLAN standard	IEEE 802.11 a/n/ac wave2
SoC/CPU	Qualcomm IPQ4018
Radio mode	MIMO 2x2
Radio frequency band	2412 MHz ~2472MHz, 5180 MHz ~5825MHz
Transmit power	Max. 26dBm (2 streams)
Receive sensitivity	Varying between -95 and -78 dBm depending on modulation
Channel size	20, 40 MHz
Modulation schemes	802.11 a/n: OFDM (64-QAM, 16-QAM, QPSK, BPSK)
Data rates	2.4GHz 802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: up to 300Mbps-2x2 MIMO(40MHz) 5GHz 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: up to 300Mbps - 2x2 MIMO(40MHz) 802.11ac: up to 867Mbps - 2x2 MIMO(80MHz channel)
Error correction	FEC, Selective ARQ
Duplexing scheme	Time division duplex
Specification	
CPU	Qualcomm IPQ4018
RAM	256MB DDR3
FLASH	16MB
Wireless	2X2 dual band (2.4G/5.8G)
Power Consumption	≤10W
Operating Temperature	-20°C ~ +70°C
Storage Temperature	-40°C ~ +90°C
Operating Humidify	5%-95%(Non-condensing)
Dimension	33*47*3mm
Weight	20g
Antenna	2 x IpeX connectors
Power Supply	1 x +3.3V
UART	1 debugging
Ethernet	1 x WAN, 4 x LAN
USB	1 x USB3.0 Host
SPI Flash	1 + 1 optional
GPIO	7



Output Power (dBm)					
	2.4GHz		5.8GHz		
MCS	HT20	HT40	HT20	HT40	HT80
MCS0	19	23	19	19	19
MCS1	19	23	18	18	18
MCS2	17	23	18	18	18
MCS3	16	23	17	17	17
MCS4	16	21	17	17	17
MCS5	15	20	16	16	16
MCS6	14	19	15	15	15
MCS7	13	20	14	14	14
MCS8		19		13	12
MCS9		17		13	12

Sensitivity (dBm)					
	2.4GHz		5.8GHz		
MCS	HT20	HT40	HT20	HT40	HT80
MCS0	-93	-90	-92	-89	-86
MCS1	-90	-88	-89	-86	-83
MCS2	-88	-85	-86	-84	-80
MCS3	-85	-82	-83	-81	-77
MCS4	-80	-77	-80	-78	-74
MCS5	-76	-73	-76	-73	-70
MCS6	-74	-73	-74	-72	-69
MCS7	-72	-70	-73	-70	-67
MCS8		-66	-68	-66	-63
MCS9		-64		-67	-61

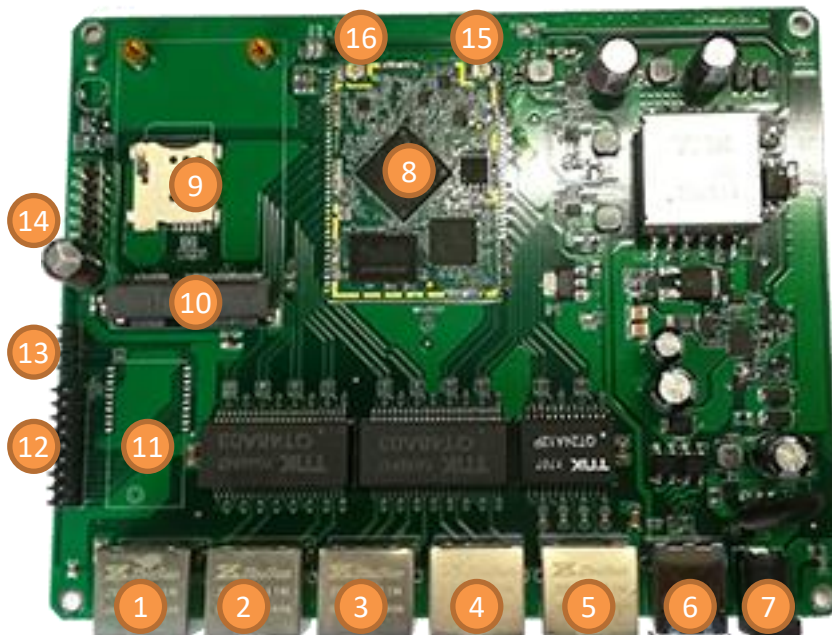


PIN Definition

No.	Pin	In/Out	Description	No.	Pin	In/Out	Description
1	+3V3_2G	PI	2.4G PA Power	36	P3_TRX0_P	I/O	RGMII3
2	GND	PI	Ground	37	P3_TRX0_N	I/O	RGMII3
3	GND	PI	Ground	38	P3_TRX1_P	I/O	RGMII3
4	+3V3_5G	PI	5.8G PA Power	39	P3_TRX1_N	I/O	RGMII3
5	GPIO0	I/O	GPIO 0	40	P3_TRX2_P	I/O	RGMII3
6	GPIO1	I/O	GPIO 1	41	P3_TRX2_N	I/O	RGMII3
7	GPIO2	I/O	GPIO 2	42	P3_TRX3_P	I/O	RGMII3
8	GPIO3	I/O	GPIO 3	43	P3_TRX3_N	I/O	RGMII3
9	GPIO4	I/O	GPIO 4	44	P4_TRX0_P	I/O	RGMII4
10	GPIO5	I/O	GPIO 5	45	P4_TRX0_N	I/O	RGMII4
11	RSTIN_N	DI	Reset IN	46	P4_TRX1_P	I/O	RGMII4
12	P0_TRX0_P	I/O	RGMII0	47	P4_TRX1_N	I/O	RGMII4
13	P0_TRX0_N	I/O	RGMII0	48	P4_TRX2_P	I/O	RGMII4
14	P0_TRX1_P	I/O	RGMII0	49	P4_TRX2_N	I/O	RGMII4
15	P0_TRX1_N	I/O	RGMII0	50	P4_TRX3_P	I/O	RGMII4
16	P0_TRX2_P	I/O	RGMII0	51	P4_TRX3_N	I/O	RGMII4
17	P0_TRX2_N	I/O	RGMII0	52	RESET_OUT_N	DO	Reset OUT
18	P0_TRX3_P	I/O	RGMII0	53	USB2_DN	I/O	USB2.0-
19	P0_TRX3_N	I/O	RGMII0	54	USB2_DP	I/O	USB2.0+
20	P1_TRX0_P	I/O	RGMII1	55	USB1_TXP	I/O	USB3.0 Tx+
21	P1_TRX0_N	I/O	RGMII1	56	USB1_TXN	I/O	USB3.0 Tx-
22	P1_TRX1_P	I/O	RGMII1	57	USB1_RXP	I/O	USB3.0 Rx+
23	P1_TRX1_N	I/O	RGMII1	58	USB1_RXN	I/O	USB3.0 Rx-
24	P1_TRX2_P	I/O	RGMII1	59	USB1_DN	I/O	USB3.0-
25	P1_TRX2_N	I/O	RGMII1	60	USB1_DP	I/O	USB3.0+
26	P1_TRX3_P	I/O	RGMII1	61	GPIO58	I/O	GPIO 58
27	P1_TRX3_N	I/O	RGMII1	62	GPIO59	I/O	GPIO 59
28	P2_TRX0_P	I/O	RGMII2	63	UART_RX	DI	UART Tx
29	P2_TRX0_N	I/O	RGMII2	64	UART_TX	DO	UART Rx
30	P2_TRX1_P	I/O	RGMII2	65	GND	PI	Ground
31	P2_TRX1_N	I/O	RGMII2	66	GND	PI	Ground
32	P2_TRX2_P	I/O	RGMII2	67	GND	PI	Ground
33	P2_TRX2_N	I/O	RGMII2	68	+3V3	PI	3.3V Power
34	P2_TRX3_P	I/O	RGMII2	69	+3V3	PI	3.3V Power
35	P2_TRX3_N	I/O	RGMII2	70	+3V3	PI	3.3V Power
P: Power, D: Digital: In, O: Out							



Development Kit



1	1000 BAST-T WAN Port	9	SD Card Slot
2	1000 BAST-T LAN Port	10	PCIe Card Slot
3	1000 BAST-T LAN Port	11	Reserved Flash
4	1000 BAST-T LAN Port	12	Pin
5	1000 BAST-T LAN Port	13	Pin
6	USB 3.0 Connector	14	Pin
7	12V Power In	15	Ipex Connector(on module)
8	Arcas DK Module	16	Ipex Connector (on module)

Dimension

