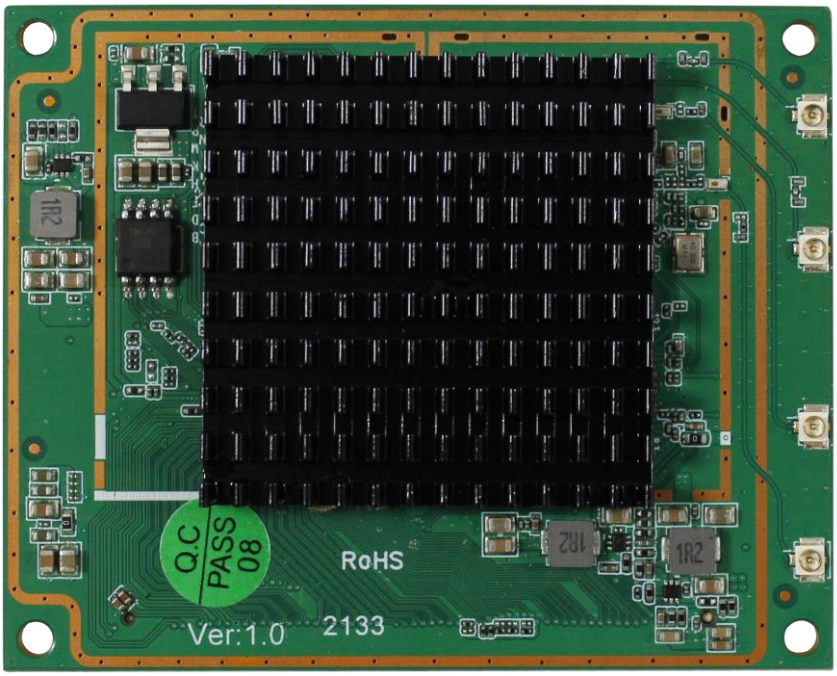
MovingComm
Ease Your Networking

ComIoT 18

High Performance 802.11ax WiFi6 Dual Band Router Core Module

Product Specifications



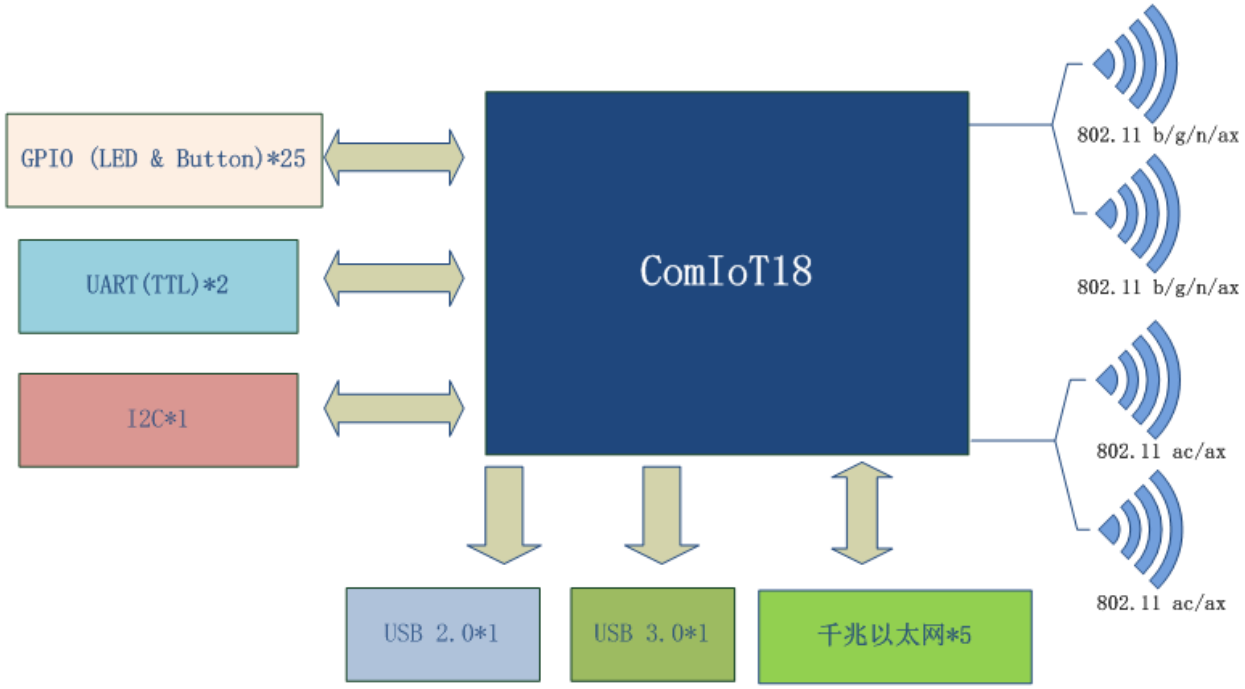
- Mediatek MT7621 Main Chipset Solution
- 802.11ax Wi-Fi Support
- 1800Mbps WIFI Transfer Speed
- Support 5 x Gigabit Ethernet Port
- Professional high-speed B2B Interface

Product Description

ComIoT 18 module is a complete small module developed and produced by Shenzhen Movingcomm Technology Co., Ltd. It supports 802.11 a/b/g/n/ac/ax protocols and offers a variety of wifi6 scenario solutions. It is optimized for low-power, low-cost, highly integrated WI-FI6 AP and routing devices for direct use with a simple external interface design.

Designed based on Mediatek MT7621 dual-core MIP network processor with a main frequency of up to 880MHz. WiFi supports dual-band 802.11a/b/g/n/ac/ax 2x2 MU-MIMO with a maximum bandwidth of up to 1800Mbps. The module supports both AP and client modes, including a large number of business applications that reduce customer research and design effort.

The hardware architecture is shown in the following diagram:



Product Features

- Solution based on MTK MT7621DAT + MT7905DAN + MT7975DN
- 2.4GHz supports WI-FI6 with a maximum speed of 573Mbps
- 5GHz supports Wi-Fi6 with a maximum speed of 1201Mbps
- Support Dynamic Frequency Selection (DFS)
- Memory with DDR3 256MB
- Support 32MB SPI NOR Flash
- Support Expansion 256MB NAND Flash
- Ethernet port support 1Gbps
- Support PCIe v2.0
- Support USB 2.0
- Support USB 3.0
- Support MicroSD Storage Expansion.
- Support for Serial and multiple GPIO

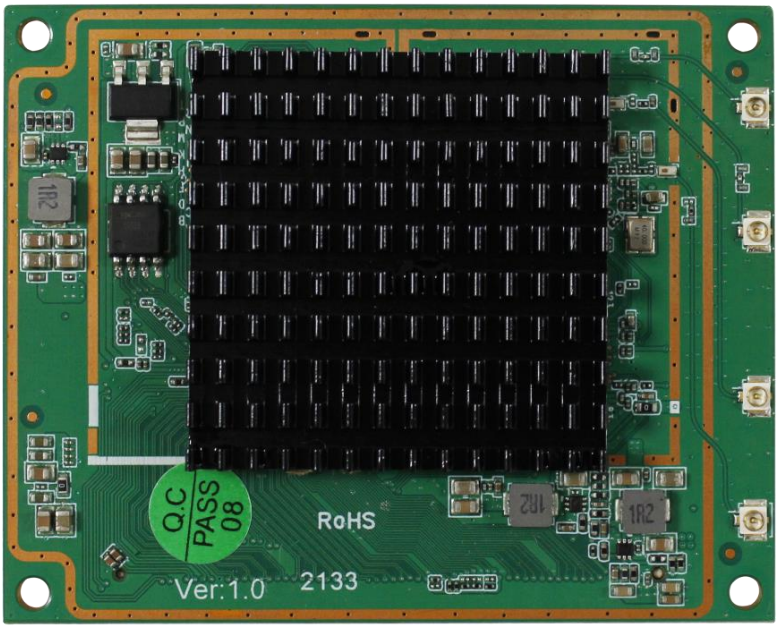
Hardware Specifications

Main Chipset	MTK MT7621DAT + MT7905DAN + MT7975DN
Flash	SPI NOR Flash 16MB (Optional Max 32MB)
Memory	256MB RAM
RF Frequency	2.40~2.4835GHz & 5.725~5.850GHz
WIFI Standards	802.11a/b/g/n/ac/ax (2X2)
Modulation	11b: DBPSK, DQPSK and CCK and DSSS 11g: BPSK, QPSK, 16QAM, 64QAM and OFDM 11n: MCS0~15 OFDM 11a: BPSK, QPSK, 16QAM, 64QAM 11ac: BPSK, QPSK, 16QAM, 64QAM, 256QAM, OFDM 11ax: BPSK, QPSK, 16QAM, 64QAM, 256QAM,1024QAM, OFDMA

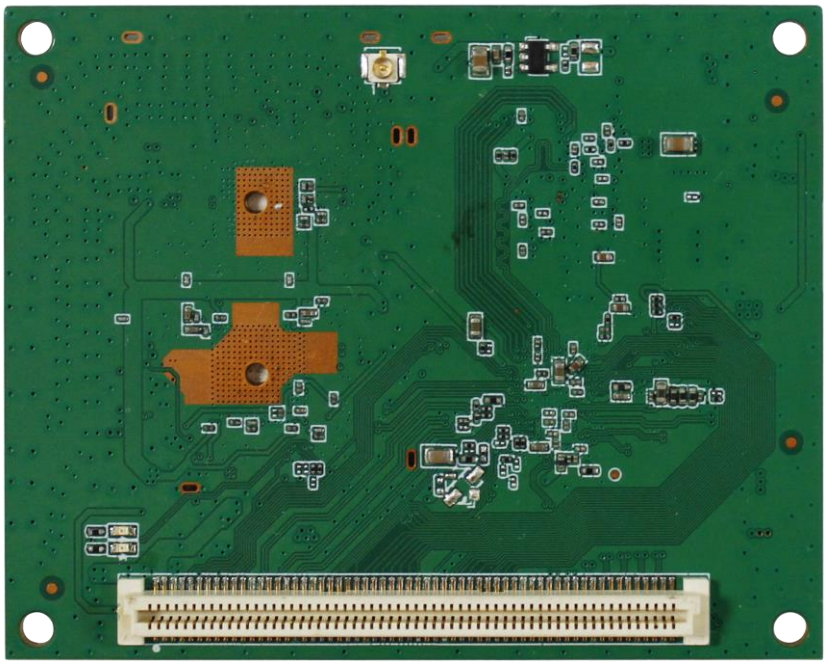
Theoretical Bandwidth	11b: 1, 2, 5.5 and 11Mbps 11g: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps 11n: MCS0~5, MIMO up to 300Mbps 11a: 6, 9, 12, 18, 24, 36, 48 and 54 Mbps 11ac: wave2, MU-MIMO, up to 867Mbps 11ax: 2.4Ghz up to 573Mbps,5.8GHz up to 1201Mbps
Board to Board Connector	120Pin Connector
Main Interfaces	Ethernet x 5, UART x 2, USB x 2, PCIE x 1, TF Card x 1
PCB	4 Layer
Size	75mm(W) x 60.5mm(L) x 12.3mm(T) / 34mm (with Head-sink)
Weight	30g
Antenna	Standard IPEX Connector / In-line SMA Connector (Optional)
Operating Temperature	-20°C to +70°C
Storage Temperature	-40°C to +90°C
Humidity	5% ~ 95%
Static Protection	Human Body Model: -2000V ~ +2000V
Static Protection	Machine Mode: -200V ~ +200V
Operating Voltage	12V +/-10%
Average Power Consumption	3.8W
Cooling Size (Recommended)	40 x 40 x 6mm Note: the wifi6 chip operates and has high thermal temperature, the module temperature needed to be in control below ≤70°C
GPIO Output Voltage	1.8 V & 3.3V +/-10%

Product Views

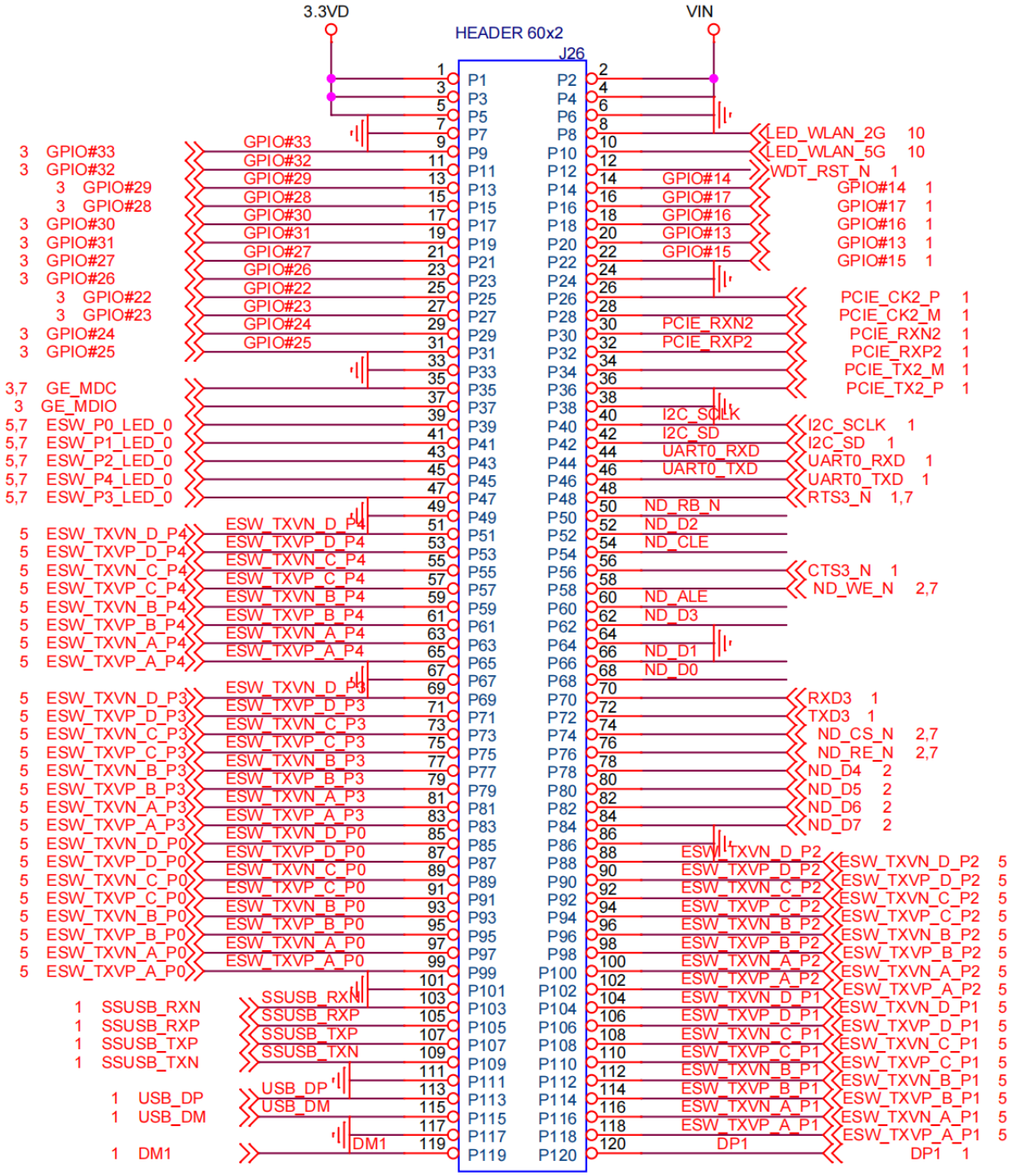
Front View



Back View



Pin Definition



Pin	Name	Description
1	3.3VD	3.3V Power In (Max 3A)
2	VIN_12V	12V Power In
3	3.3VD	3.3V Power In (Max 3A)
4	VIN_12V	12V Power In
5	3.3VD	3.3V Power In (Max 3A)
6	GND	Ground
7	GND	Ground
8	LED_WLAN_2G	2.4GHz WIFI LED Indicator
9	GPIO_33	GPIO
10	LED_WLAN_5G	5GHz WIFI LED Indicator
11	GPIO32	GPIO
12	WDT_RST_N	Reset (Power Low Active)
13	GPIO29	GPIO
14	GPIO_14	GPIO
15	GPIO_28	GPIO
16	GPIO_17	GPIO
17	GPIO_30	GPIO
18	GPIO_16	GPIO
19	GPIO_31	GPIO
20	GPIO_13	GPIO
21	GPIO_27	GPIO
22	GPIO_15	GPIO
23	GPIO_26	GPIO
24	GND	Ground
25	GPIO_22	GPIO
26	PCIE_CK2_P	PCIE2.0
27	GPIO_23	GPIO
28	PCIE_CK2_M	PCIE2.0
29	GPIO_24	GPIO
30	PCIE_RXN2	PCIE2.0

31	GPIO_25	GPIO
32	PCIE_RXP2	PCIE2.0
33	GND	Ground
34	PCIE_TX2_M	PCIE2.0
35	GE_MDC	
36	PCIE_TX2P	PCIE2.0
37	GE_MDIO	
38	GND	Ground
39	ESW_P0_LED	Ethernet Port LED_P0
40	I2C_SCLK	I2C Interface
41	ESW_P1_LED	Ethernet Port LED_P1
42	I2C_SD	I2C Interface
43	ESW_P2_LED	Ethernet Port LED_P2
44	UART0_RXD	Serial (Default Debug)
45	ESW_P3_LED	Ethernet Port LED_P3
46	UART0_TXD	Serial (Default Debug)
47	ESW_P4_LED	Ethernet Port LED_P4
48	RTS3_N	
49	GND	Ground
50	ND_RB_N	
51	ESW_TXVN_D_P4	Ethernet Port P4
52	ND_D2	
53	ESW_TXVP_D_P4	Ethernet Port P4
54	ND_CLE	
55	ESW_TXVN_C_P4	Ethernet Port P4
56	CTS3_N	
57	ESW_TXVP_C_P4	Ethernet Port P4
58	ND_WE_N	
59	ESW_TXVN_B_P4	Ethernet Port P4
60	ND_ALE	
61	ESW_TXVP_B_P4	Ethernet Port P4
62	ND_D3	

63	ESW_TXVN_A_P4	Ethernet Port P4
64	GND	Ground
65	ESW_TXVN_A_P4	Ethernet Port P4
66	ND_D1	
67	GND	Ground
68	ND_D0	
69	ESW_TXVN_D_P3	Ethernet Port P3
70	RXD3	
71	ESW_TXVP_D_P3	Ethernet Port P3
72	TXD3	
73	ESW_TXVN_C_P3	Ethernet Port P3
74	ND_CS_N	
75	ESW_TXVP_C_P3	Ethernet Port P3
76	ND_RE_N	
77	ESW_TXVN_B_P3	Ethernet Port P3
78	ND_D4	
79	ESW_TXVP_B_P3	Ethernet Port P3
80	ND_D5	
81	ESW_TXVN_A_P3	Ethernet Port P3
82	ND_D6	
83	ESW_TXVN_A_P3	Ethernet Port P3
84	ND_D7	
85	ESW_TXVN_D_P0	Ethernet Port P0
86	GND	Ground
87	ESW_TXVP_D_P0	Ethernet Port P0
88	ESW_TXVN_D_P2	Ethernet Port P2
89	ESW_TXVN_C_P0	Ethernet Port P0
90	ESW_TXVP_D_P2	Ethernet Port P2
91	ESW_TXVP_C_P0	Ethernet Port P0
92	ESW_TXVN_C_P2	Ethernet Port P2
93	ESW_TXVN_B_P0	Ethernet Port P0
94	ESW_TXVP_C_P2	Ethernet Port P2

95	ESW_TXVP_B_P0	Ethernet Port P0
96	ESW_TXVN_B_P2	Ethernet Port P2
97	ESW_TXVN_A_P0	Ethernet Port P0
98	ESW_TXVP_B_P2	Ethernet Port P2
99	ESW_TXVN_A_P0	Ethernet Port P0
100	ESW_TXVN_A_P2	Ethernet Port P2
101	GND	Ground
102	ESW_TXVN_A_P2	Ethernet Port P2
103	SSUSB_RXN	USD 3.0
104	ESW_TXVN_D_P1	Ethernet Port P1
105	SSUSB_RXP	USD 3.0
106	ESW_TXVP_D_P1	Ethernet Port P1
107	SSUSB_TXP	USD 3.0
108	ESW_TXVN_C_P1	Ethernet Port P1
109	SSUSB_TXN	USD 3.0
110	ESW_TXVP_C_P1	Ethernet Port P1
111	GND	Ground
112	ESW_TXVN_B_P1	Ethernet Port P1
113	USB_DP	USD 2.0
114	ESW_TXVP_B_P1	Ethernet Port P1
115	USB_DM	USD 2.0
116	ESW_TXVN_A_P1	Ethernet Port P1
117	GND	Ground
118	ESW_TXVN_A_P1	Ethernet Port P1
119	DM1	
120	DP1	

WiFi RF Specifications

RF Radio Frequency	Value
11ax HT20 RF Power (2.4GHz)	15±2dBm
11ax HT20 Receive Sensitivity (2.4GHz)	≤-62dBm
11ax HT20 RF Power (5Hz)	15±2dBm
11ax HT20 Receive Sensitivity (5GHz)	≤--62dBm
PPM	±20

Antenna/Frequency/Data Rate	RF Power (2.4GHz)
CH0/11b/11M	17±2dBm
CH0/11g/54M	16±2dBm
CH0/11n/HT20 MCS7	16±2dBm
CH0/11n/HT40 MCS7	15±2dBm
CH0/11AX/HT20 MCS11	15±2dBm
CH0/11AX/HT40 MCS11	15±2dBm
CH1/11b/11M	17±2dBm
CH1/11g/54M	16±2dBm
CH1/11n/HT20 MCS7	16±2dBm
CH1/11n/HT40 MCS7	15±2dBm
CH0/11AX/HT20 MCS11	15±2dBm
CH0/11AX/HT40 MCS11	15±2dBm

Antenna/Frequency/Data Rate	RF Power (5GHz)
CH0/11a/54M	16±2dBm
CH0/11n/HT20 MCS7	15±2dBm
CH0/11n/HT40 MCS7	15±2dBm
CH0/11AC/HT20 MCS9	15±2dBm
CH0/11AC/HT40 MCS9	15±2dBm
CH0/11AC/HT80 MCS9	14±2dBm
CH0/11AX/HT20 MCS11	15±2dBm
CH0/11AX/HT40 MCS11	15±2dBm
CH0/11AX/HT80 MCS11	14±2dBm

CH1/11a/54M	16±2dBm
CH1/11n/HT20 MCS7	15±2dBm
CH1/11n/HT40 MCS7	15±2dBm
CH1/11AC/HT20 MCS9	15±2dBm
CH1/11AC/HT40 MCS9	15±2dBm
CH1/11AC/HT80 MCS9	14±2dBm
CH1/11AX/HT20 MCS11	15±2dBm
CH1/11AX/HT40 MCS11	15±2dBm
CH1/11AX/HT80 MCS11	14±2dBm

Antenna/Frequency/Data Rate	Receive Sensitivity (2.4GHz)
CH0/11b/11M	≤--88dBm
CH0/11g/54M	≤--75dBm
CH0/11n/HT20 MCS7	≤--72dBm
CH0/11n/HT40 MCS7	≤--70dBm
CH0/11AX/HT20 MCS11	≤--62dBm
CH0/11AX/HT40 MCS11	≤--60dBm
CH1/11b/11M	≤--88dBm
CH1/11g/54M	≤--75dBm
CH1/11n/HT20 MCS7	≤--72dBm
CH1/11n/HT40 MCS7	≤--70dBm
CH0/11AX/HT20 MCS11	≤--62dBm
CH0/11AX/HT40 MCS11	≤--60dBm

Antenna/Frequency/Data Rate	Receive Sensitivity (5GHz)
CH0/11a/54M	≤--77dBm
CH0/11n/HT20 MCS7	≤--74dBm
CH0/11n/HT40 MCS7	≤-72dBm
CH0/11AC/HT20 MCS9	≤-74dBm
CH0/11AC/HT40 MCS9	≤-72dBm
CH0/11AC/HT80 MCS9	≤-62dBm
CH0/11AX/HT20 MCS11	≤-62dBm
CH0/11AX/HT40 MCS11	≤-60dBm

CH0/11AX/HT80 MCS11	≤-56dBm
CH0/11a/54M	≤-77dBm
CH1/11n/HT20 MCS7	≤-74dBm
CH1/11n/HT40 MCS7	≤-72dBm
CH1/11AC/HT20 MCS9	≤-74dBm
CH1/11AC/HT40 MCS9	≤-72dBm
CH1/11AC/HT80 MCS9	≤-62dBm
CH1/11AX/HT20 MCS11	≤-62dBm
CH1/11AX/HT40 MCS11	≤-60dBm
CH1/11AX/HT80 MCS11	≤-56dBm

Order Information

Model	**NOR Flash**	**DDR3**
ComIoT 18	16MB	256MB

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