

Industrial AP/Client Module 2975Mbps Dual-Band

GP-ME3000AX-C Series



Introduction

GP-ME3000AX-C Series is a high-bandwidth, high-speed Wi-Fi6 module. It utilizes the IEEE 802.11a/b/g/n/ac/ax standards, supporting dual-band operation at 2.4GHz and 5GHz with data rates up to 2975Mbps.

GP-ME3000AX-C Series designed with industrial-grade chipset, uses 1.0 pitch pins to connect to other devices. It supports wireless terminal mode which can be installed on any terminal device that requires wireless network access.

Combined with GPSENKE's millisecond-level GP Roaming fast roaming function, it can provide fast wireless roaming switching capabilities for mobile terminals.

GP-ME3000AX-C Series has an ultra-small package design and integrates the PA and the main control chip into an industrial-grade circuit design which can work in -40~80°C environment. It can be widely used in wireless access in robot control, unmanned warehousing, power station inspection and other using sites.

Main Feature

- Support 802.11k/v/r and Fast GP Roaming
- Support 802.11 ax standard, speed up to 2975Mbps
- Support MAC Address Clone
- Pin Row Design
- Support IPv4/IPv6
- Support Open System, Shared Key, WPA, WPA-PSK, WPA2-Enterprise, WPA2-PSK
- Support DC5V-DC5.4V power supply

Software Parameter

WLAN	Frequency Band	2.4GHz	5GHz
	Channel Bonding	40MHz	160MHz
	MU-MIMO	Support	Support
	OFDMA	Support	Support
	TWT	Support	Support
	2400Mbps(PHY)	NA	Support
	575Mbps(PHY)	Support	NA
	A-MPDU	Support	Support
	MLD	Support	Support
	MRC	Support	Support
	STBC	Support	Support
	LDPC	Support	Support
	MAX Virtual AP	Single Band-- Support 16 Virtual AP	
	Max Access Users	1024 (Influenced by Environment Fators)	
	Max Access Spend	2.4GHz: 575Mbps 5GHz: 2400Mbps	
	RTS/CTS	Support	
	CTS-to-self	Support	
	Hidden SSID	Support	
	Terminal Aging/Heartbeat Detection	Support	
Working Mode	AP Mode	Brigde Mode (LAY2) Router Mode (LAY3)	
	Client Mode	Client Mode MAC Address Clone	
	Bridge Mode	Support WDS	
Roaming	Roaming Switch	Support 802.11k, 802.11v, 802.11r	
		LAY2/LAY3 Roaming	
	Turbo Roaming	Support dual-link mode to establish primary and backup links with upstream devices, enabling fast switching of data channels.	

RF	Load Balancing	Load balancing is supported based on the number of users and user traffic
	5G Priority	Support
	Automatic Channel Selection	Support
	Automatic Power Regulation	Support
	Intelligent Speed Select	Support
	Time Fair Scheduling	Support
Security	Encryption	Support 64/128 bit WEP、Dynamic WEP、TKIP、CCMP encryption
	Authentication Method	Cooperate With AC Support WPA、WPA-PSK、WPA2- Enterprise、WPA2-PSK、WPA3、MAC address Verify、Web Verify、PPPoE Verification and etc Methods
	LAY2 Isolation of Wireless Users	Support
	wIDS	Support
AAA	RadiusClient	Support
	Authentication Server Multi-domain configuration	Support
	Authentication Server Backup	Support
LAY2/LAY3	IP Address	Static IP and DHCP dynamically obtain addresses
	IPv6	Support
	ACL	Support
	DHCP server	Support (Router Mode)
	NAT	Support (Router Mode)
Service Quality	WMM(802.11e)	Support
	Priority Mapping	Support
	QoS Policy Mapping	Support
	Bandwidth Managed	Support Bandwidth Speed Limitation based on SSID and Users
	Call Admission Control (CAC)	Support
Maintenance	Network Management	SNMPV1/V2c/V3、Trap、Telnet、FTP/TFTP、WEB

Hardware Parameter

Size		70mm × 55mm
Port	Ethernet	3 × 1000M Ethernet PIN Port
	Antenna	2 × MMCX IPEX female RF connectors (external antenna, optional)
	Module	AMP 0.8-100P female header
Working Band	2.4G	802.11ax/n/g/b: 2.4GHz-2.483GHz (CHINA)
	5G	802.11 ax/ac/n/a: 5.150GHz-5.350GHz 5.725GHz-5.850GHz (CHINA)
Modulation Technology		OFDM : BPSK@6/9Mbps、 QPSK@12/18Mbps、 16-QAM@24Mbps、 64-QAM@48/54Mbps DSSS : DBPSK@1Mbps、 DQPSK@2Mbps、 CCK@5.5/11Mbps MIMO-OFDM (11n) : MCS 0-15 MIMO-OFDM (11ac) : MCS 0-9 MIMO-OFDM (11ax) : MCS 0-11
Modulation Method		11b: DSS:CCK@5.5/11Mbps,DQPSK@2Mbps,DBPSK@1Mbps 11a/g OFDM:64QAM@48/54Mbps,16QAM@24Mbps, QPSK@12/18Mbps,BPSK@6/9Mbps 11n: MIMO-OFDM:BPSK,QPSK,16QAM,64QAM 11ac/ac wave2: MIMO-OFDM:BPSK,QPSK,16QAM,64QAM,256QAM 11ax: MIMO-OFDM: BPSK,QPSK,16QAM,64QAM,256QAM,1024QAM
MAX Transmit Power		23dBm
Adjustable Granularity		1dBm
Operating Temperature		-40°C ~ 75°C
Storage Temperature		-40°C ~ 90°C
Operating Humidity		0%~95%(Non-condensing)
Power Supply		DC5V-DC5.4V
Consumption(Client5.8G)		AP Mode : ≤ 12W Client Mode :2.4G ≤ 9W 5.8G ≤ 7.5W
MTBF		>250000H

Appearance& Design



Model Selection

Model	Description
GP-ME3000AX-C	2975Mbps, Wireless Access Point/ Client, WiFi6 Module

2.4GHz RF Specifications

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance		Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	1Mbps	1Mbps	1Mbps	2.4GHz 802.11b	1Mbps	-101	±2dB
	2Mbps	2Mbps	2Mbps	2Mbps		2Mbps	-99	±2dB
	5.5Mbps	5.5Mbps	5.5Mbps	5.5Mbps		5.5Mbps	-97	±2dB
	11Mbps	11Mbps	11Mbps	11Mbps		11Mbps	-94	±2dB
2.4GHz 802.11g	6Mbps	6Mbps	6Mbps	6Mbps	2.4GHz 802.11g	6Mbps	-97	±2dB
	9Mbps	9Mbps	9Mbps	9Mbps		9Mbps	-95	±2dB
	12Mbps	12Mbps	12Mbps	12Mbps		12Mbps	-92	±2dB
	18Mbps	18Mbps	18Mbps	18Mbps		18Mbps	-90	±2dB
	24Mbps	24Mbps	24Mbps	24Mbps		24Mbps	-87	±2dB
	36Mbps	36Mbps	36Mbps	36Mbps		36Mbps	-85	±2dB
	48Mbps	48Mbps	48Mbps	48Mbps		48Mbps	-83	±2dB
	54Mbps	54Mbps	54Mbps	54Mbps		54Mbps	-81	±2dB
2.4GHz 802.11n HT20	MCS 0	MCS 0	MCS 0	MCS 0	2.4GHz 802.11n HT20	MCS 0	-96	±2dB
	MCS 1	MCS 1	MCS 1	MCS 1		MCS 1	-94	±2dB
	MCS 2	MCS 2	MCS 2	MCS 2		MCS 2	-92	±2dB
	MCS 3	MCS 3	MCS 3	MCS 3		MCS 3	-90	±2dB
	MCS 4	MCS 4	MCS 4	MCS 4		MCS 4	-88	±2dB
	MCS 5	MCS 5	MCS 5	MCS 5		MCS 5	-86	±2dB
	MCs 6	MCs 6	MCs 6	MCs 6		MCs 6	-83	±2dB
	MCS 7	MCS 7	MCS 7	MCS 7		MCS 7	-80	±2dB
2.4GHz 802.11n HT40	MCs 0	MCs 0	MCs 0	MCs 0	2.4GHz 802.11n HT40	MCs 0	-94	±2dB
	MCS 1	MCS 1	MCS 1	MCS 1		MCS 1	-92	±2dB
	MCS 2	MCS 2	MCS 2	MCS 2		MCS 2	-90	±2dB
	MCS 3	MCS 3	MCS 3	MCS 3		MCS 3	-88	±2dB
	MCS 4	MCS 4	MCS 4	MCS 4		MCS 4	-86	±2dB
	MCS 5	MCS 5	MCS 5	MCS 5		MCS 5	-83	±2dB
	MCS 8	MCS 8	MCS 8	MCS 8		MCS 6	-80	±2dB
	MCS 7	MCS 7	MCS 7	MCS 7		MCS 7	-77	±2dB
2.4GHz 802.11ax HE20	MCS 0	20dBm	23dBm	±2dB	2.4GHz 802.11ax HE20	MCS 0	-97	±2dB
	MCS 1	20dBm	23dBm	±2dB		MCS 1	-95	±2dB
	MCS 2	20dBm	23dBm	±2dB		MCS 2	-92	±2dB
	MCS 3	20dBm	23dBm	±2dB		MCS 3	-90	±2dB
	MCS 5	20dBm	23dBm	±2dB		MCS 4	-87	±2dB
	MCs 6	20dBm	23dBm	±2dB		MCS 5	-84	±2dB
	MCS 7	19dBm	22dBm	±2dB		MCs 6	-81	±2dB
	MCs 8	18dBm	21dBm	±2dB		MCS 7	-78	±2dB
	MCS 9	18dBm	21dBm	±2dB		MCs 8	-75	±2dB
	MCS 10	16dBm	19dBm	±2dB		MCS 9	-72	±2dB
	MCS 11	15dBm	18dBm	±2dB		MCS 10	-69	±2dB
2.4GHz 802.11ax HE40	MCS 0	20dBm	23dBm	±2dB	2.4GHz 802.11ax HE40	MCS 11	-66	±2dB
	MCS 1	20dBm	23dBm	±2dB		MCS 0	-95	±2dB
	MCS 2	20dBm	23dBm	±2dB		MCS 1	-93	±2dB
	MCS 3	20dBm	23dBm	±2dB		MCS 2	-90	±2dB
	MCS 4	20dBm	23dBm	±2dB		MCS 3	-87	±2dB
	MCS 5	20dBm	23dBm	±2dB		MCS 4	-84	±2dB
	MCs 6	20dBm	23dBm	±2dB		MCS 5	-81	±2dB
	MCS 7	19dBm	22dBm	±2dB		MCs 6	-78	±2dB
	MCs 8	18dBm	21dBm	±2dB		MCS 7	-75	±2dB

5GHz RF Specifications

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11a	6Mbps	20dBm	23dBm	± 2dB
	9Mbps	20dBm	23dBm	± 2dB
	12Mbps	20dBm	23dBm	± 2dB
	18Mbps	20dBm	23dBm	± 2dB
	24Mbps	20dBm	23dBm	± 2dB
	36Mbps	20dBm	23dBm	± 2dB
	48Mbps	20dBm	23dBm	± 2dB
	54Mbps	20dBm	23dBm	± 2dB
5GHz 802.11n/ac VHT20	MCS 0	20dBm	23dBm	± 2dB
	MCS 1	20dBm	23dBm	± 2dB
	MCS 2	20dBm	23dBm	± 2dB
	MCS 3	20dBm	23dBm	± 2dB
	MCS 4	20dBm	23dBm	± 2dB
	MCS 5	20dBm	23dBm	± 2dB
	MCS 6	20dBm	23dBm	± 2dB
	MCS 7	19dBm	22dBm	± 2dB
	MCS 8	18dBm	21dBm	± 2dB
5GHz 802.11n/ac VHT40	MCS 0	20dBm	23dBm	± 2dB
	MCS 1	20dBm	23dBm	± 2dB
	MCS 2	20dBm	23dBm	± 2dB
	MCS 3	20dBm	23dBm	± 2dB
	MCS 4	20dBm	23dBm	± 2dB
	MCS 5	20dBm	23dBm	± 2dB
	MCS 6	20dBm	23dBm	± 2dB
	MCS 7	19dBm	22dBm	± 2dB
	MCS 8	18dBm	21dBm	± 2dB
	MCS 9	18dBm	21dBm	± 2dB
5GHz 802.11ac VHT80	MCS 0	20dBm	23dBm	± 2dB
	MCS 1	20dBm	23dBm	± 2dB
	MCS 2	20dBm	23dBm	± 2dB
	MCS 3	20dBm	23dBm	± 2dB
	MCS 4	20dBm	23dBm	± 2dB
	MCS 5	20dBm	23dBm	± 2dB
	MCS 6	20dBm	23dBm	± 2dB
	MCS 7	19dBm	22dBm	± 2dB
	MCS 8	18dBm	21dBm	± 2dB
	MCS 9	18dBm	21dBm	± 2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	-94	± 2dB
	9Mbps	-92	± 2dB
	12Mbps	-89	± 2dB
	18Mbps	-87	± 2dB
	24Mbps	-85	± 2dB
	36Mbps	-83	± 2dB
	48Mbps	-80	± 2dB
	54Mbps	-78	± 2dB
5GHz 802.11n/ac VHT20	MCS 0	-94	± 2dB
	MCS 1	-92	± 2dB
	MCS 2	-89	± 2dB
	MCS 3	-87	± 2dB
	MCS 4	-85	± 2dB
	MCS 5	-83	± 2dB
	MCS 6	-80	± 2dB
	MCS 7	-77	± 2dB
	MCS 8	-75	± 2dB
5GHz 802.11n/ac VHT40	MCS 0	-92	± 2dB
	MCS 1	-90	± 2dB
	MCS 2	-88	± 2dB
	MCS 3	-85	± 2dB
	MCS 4	-82	± 2dB
	MCS 5	-79	± 2dB
	MCS 6	-76	± 2dB
	MCS 7	-73	± 2dB
	MCS 8	-70	± 2dB
	MCS 9	-67	± 2dB
5GHz 802.11ac VHT80	MCS 0	-87	± 2dB
	MCS 1	-85	± 2dB
	MCS 2	-83	± 2dB
	MCS 3	-80	± 2dB
	MCS 4	-78	± 2dB
	MCS 5	-75	± 2dB
	MCS 6	-73	± 2dB
	MCS 7	-70	± 2dB
	MCS 8	-67	± 2dB
	MCS 9	-64	± 2dB

5GHz RF Specifications

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance		Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11ax HE20	MCs 0	20dBm	23dBm	±2dB	5GHz 802.11ax HE20	MCs 0	-94	±2dB
	MCS 1	20dBm	23dBm	±2dB		MCS 1	-92	±2dB
	MCS 2	20dBm	23dBm	±2dB		MCS 2	-89	±2dB
	MCS 3	20dBm	23dBm	±2dB		MCS 3	-86	±2dB
	MCS 4	20dBm	23dBm	±2dB		MCS 4	-83	±2dB
	MCS 5	20dBm	23dBm	±2dB		MCS 5	-80	±2dB
	MCS 6	20dBm	23dBm	±2dB		MCS 6	-77	±2dB
	MCS 7	19dBm	22dBm	±2dB		MCS 7	-74	±2dB
	MCS 8	18dBm	21dBm	±2dB		MCS 8	-71	±2dB
	MCS 9	18dBm	21dBm	±2dB		MCS 9	-66	±2dB
	MCS 10	16dBm	19dBm	±2dB		MCS 10	-65	±2dB
	MCS 11	15dBm	18dBm	±2dB		MCS 11	-62	±2dB
5GHz 802.11ax HE40	MCS 0	20dBm	23dBm	±2dB	5GHz 802.11ax HE40	MCS 0	-89	±2dB
	MCS 1	20dBm	23dBm	±2dB		MCS 1	-87	±2dB
	MCS 2	20dBm	23dBm	±2dB		MCS 2	-85	±2dB
	MCS 3	20dBm	23dBm	±2dB		MCS 3	-83	±2dB
	MCS 4	20dBm	23dBm	±2dB		MCS 4	-81	±2dB
	MCS 5	20dBm	23dBm	±2dB		MCS 5	-78	±2dB
	MCS 6	20dBm	23dBm	±2dB		MCS 6	-75	±2dB
	MCS 7	20dBm	23dBm	±2dB		MCS 7	-72	±2dB
	MCS 8	19dBm	22dBm	±2dB		MCS 8	-69	±2dB
	MCS 9	18dBm	21dBm	±2dB		MCS 9	-66	±2dB
	MCS 10	18dBm	21dBm	±2dB		MCS 10	-63	±2dB
	MCS 11	16dBm	19dBm	±2dB		MCS 11	-60	±2dB
5GHz 802.11ax HE80	MCs 0	20dBm	23dBm	±2dB	5GHz 802.11ax HE80	MCS 0	-86	±2dB
	MCS 1	20dBm	23dBm	±2dB		MCS 1	-84	±2dB
	MCS 2	20dBm	23dBm	±2dB		MCS 2	-81	±2dB
	MCS 3	20dBm	23dBm	±2dB		MCS 3	-79	±2dB
	MCS 4	20dBm	23dBm	±2dB		MCS 4	-76	±2dB
	MCS 5	20dBm	23dBm	±2dB		MCS 5	-74	±2dB
	MCS 6	20dBm	23dBm	±2dB		MCS 6	-71	±2dB
	MCS 7	19dBm	22dBm	±2dB		MCS 7	-68	±2dB
	MCS 8	18dBm	21dBm	±2dB		MCS 8	-65	±2dB
	MCS 9	18dBm	21dBm	±2dB		MCS 9	-62	±2dB
	MCS 10	16dBm	19dBm	±2dB		MCS 10	-59	±2dB
	MCS 11	15dBm	18dBm	±2dB		MCS 11	-56	±2dB

Module Pin Definition

Pin Description	Pin		Pin Description
UART_TXD1_CONN	2	1	UART_RXD1_CONN
GPIO31	4	3	GPIO33
GPIO24	6	5	GPIO35
GPIO25	8	7	GPIO32
GPIO27	10	9	GPIO30
GPIO28	12	11	GPIO26
GND	14	13	GND
GPIO23	16	15	GPIO34
	18	17	
	20	19	
	22	21	
	24	23	
	26	25	
	28	27	
	30	29	
	32	31	
	34	33	
CONN_UPHY_RXP	36	35	CONN_UPHY_RXN
USB0_HS_DM	38	37	USB0_HS_DP
CONN_UPHY_TXP	40	39	CONN_UPHY_TXN
	42	41	
	44	43	
	46	45	
	48	47	
	50	49	
	52	51	
GND	54	53	GND
P4_TRX3-	56	55	P2_TRX3+
P4_TRX2-	58	57	P2_TRX2+
P4_TRX1-	60	59	P2_TRX1+
P4_TRX0-	62	61	P2_TRX0+
P3_TRX3-	64	63	P1_TRX3+
P3_TRX2-	66	65	P1_TRX2+
P3_TRX1-	68	67	P1_TRX1+
P3_TRX0-	70	69	P1_TRX0+
P0_TRX3-	72	71	P0_TRX3+
P0_TRX2-	74	73	P0_TRX2+
P0_TRX1-	76	75	P0_TRX1+
P0_TRX0+	78	77	P0_TRX0-
GND	80	79	GND
GPIO19	82	81	GPIO12
GPIO40	84	83	GPIO22
RESET_N	86	85	GPIO17
GPIO13	88	87	GPIO11
GPIO10	90	89	GPIO38
GPIO46	92	91	
GND	94	93	GND
OUT 1.8V	96	95	OUT-3.3V
IN-DC5V	98	97	IN-DC5V
IN-DC5V	100	99	IN-DC5V

INDUSTRIAL NETWORK SOLUTION SPECIALIST



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