

AMPAK Product Roadmap

Feb 9th, 2021

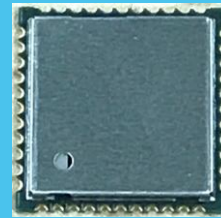


Advanced Module Packaging Solution

Content

1. 12x12mm Stamp-type&1T1R p2p series
2. 13x15mm Stamp-type&2T2R p2p series
3. Compact LGA-type & GPS

Stamp Type & 1T1R



Stamp Type & 1T1R

Antenna Diversity

Low Power

High Power

3 Antenna

GPS

Wi-Fi /BT

2.4 / 5GHz

Model Name	Size	Wi-Fi	Interface	HT	BT	Status
AP6212A	12*12*1.5mm	802.11 b/g/n	SDIO2.0 + UART	HT20	2.1+5.2	MP
AP6256	12*12*1.5mm	802.11 ac/a/b/g/n	SDIO3.0 + UART	HT80	2.1+5.0	MP

Stamp Type & 1T1R

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High Power

3 Antenna

GPS

Wi-Fi /BT

2.4 / 5 GHz

Model Name	Size	Wi-Fi	Interface	HT	BT	Status
AP6201BM (28nm)	12*12*1.5mm	802.11 b/g/n	SDIO3.0 + UART	HT20	2.1+5.0 (BT mid power)	MP
AP6203BM (28nm)	12*12*1.5mm	802.11a/b/g/n	SDIO3.0 + UART	HT20	2.1+5.0 (BT mid power)	MP

Power Consumption Comparison

Condition	AP6201BM		AP6236		AP6203BM		AP6256	
	VBAT(3.3V)	VDDIO(1.8V)	VBAT(3.3V)	VDDIO(3.3V)	VBAT(3.3V)	VDDIO(1.8V)	VBAT(3.3V)	VDDIO(3.3V)
WIFI								
All off	1.0uA	0.2uA	3.05uA	1.11uA	1uA	0.2uA	2.2uA	0.11uA
WiFi on mode	2.0uA	124uA	37.8uA	261.5uA	1.954uA	120uA	10uA	330uA
WiFi scan mode	23.1mA	707uA	29.9mA	241.8uA	23mA	724uA	50.8mA	340uA
WiFi link mode (2.4GHz)	284uA	127uA	724.5uA	254.2uA	293uA	120uA	1mA	866uA
WiFi link mode (5GHz)					174uA	111.6uA	451.8uA	309.8uA
RX Throughput Test (2.4G mode 11n HT20)	39.3mA	3.0mA	53.7mA	5.3mA	38mA	2.4mA	84.8mA	8.1mA
TX Throughput Test (2.4G mode 11n HT20)	171mA	3mA	200.3mA	1.5mA	173mA	2.05mA	312.6mA	1.1mA
RX Throughput Test (5G mode 11n HT20)					39mA	2.4mA	118.3mA	13.1mA
TX Throughput Test (5G mode 11n HT20)					230mA	2mA	293mA	0.973mA

Note : RF output power setting : 11a@16 dBm, 11b@16dBm, 11g@15dBm, 11n@14dBm

Stamp Type & 2T2R



Stamp Type & 2T2R

Antenna Diversity

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GPS

Wi-Fi /BT

2.4 & 5GHz

Model Name	Size	Wi-Fi	Interface	HT	BT	Status
AP6398S2 (28nm)	13*15*1.5mm	802.11 ac/a/b/g/n	SDIO3.0 + UART	HT80	2.1+5.0	2021Q1
AP6275S	13*15*1.5mm	802.11 ax/ac/a/b/g/n	SDIO3.0 + UART	HT80	2.1+5.0	MP
AP6275P	13*15*1.5mm	802.11 ax/ac/a/b/g/n	PCIe + UART	HT80	2.1+5.0	MP

Stamp Type & 2T2R

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Wi-Fi /BT

2.4 & 5GHz

Model Name	SYNA Chip	Size	Wi-Fi	Interface	HT	BT	Status
AP6398SR32 (28nm)	BCM43752	13*15*1.5mm	802.11 ac/a/b/g/n	SDIO3.0 + UART	HT80	2.1+5.0	2021Q1
AP6275SR3 (28nm)	BCM43752	13*15*1.5mm	802.11 ax/ac/a/b/g/n	SDIO3.0 + UART	HT80	2.1+5.0	MP
AP6275PR3 (28nm)	BCM43752	13*15*1.5mm	802.11 ax/ac/a/b/g/n	PCIe + UART	HT80	2.1+5.0	MP

AP6275S v.s AP6398S

Product



13x15x1.7mm

Features	AP6275S	AP6398S
Process Node	28nm <i>Reducing ~50% power</i>	40nm
MIMO	2x2	2x2
Peak PHY Rate (Mbps)	1200/286	866/144.4
SDIO3.0	●	●
Bluetooth 5.0 Support	LE 2M/LE LR	LE 2M/LE LR
Wi-Fi /BT Mesh	●	●
802.11ax/ac 1024-QAM	●	○
802.11ax Client UL/DL-OFDMA	●	○
802.11ax Client Rx DL MU-MIMO	●	○
802.11ax/802.11ac+ TWT	● <i>Reducing ~65% power</i>	○
BT Dual Power 13dB	●	○

Application

BCM43752/1 for "Gateway + Client" design



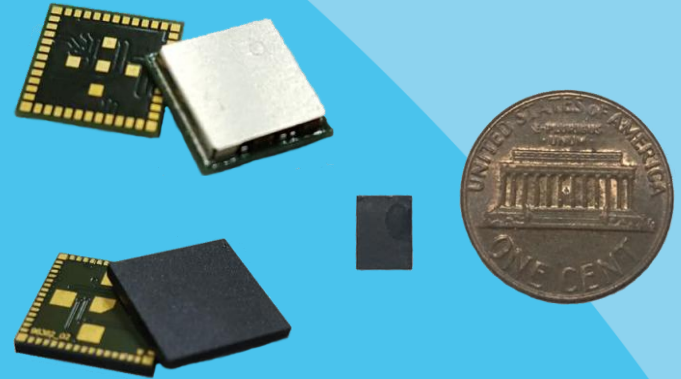
- BCM43752/1 offers WIFI 6 (11ax) / 11ac+ with TWT to drive low power between Gateway and Clients

BCM43752/1 for Streaming Video/Audio applications



- Thermal & HDMI desense is critical for small form factor OTT/TV stick designs
- BCM43752/1 significantly reduce power and RBOM Cost
- BCM43752/1 offers WiFi Mesh, BT Mesh, Time sync and other advance features

LGA Type & 1T1R & 2T2R



LGA Type & 1T1R

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Wi-Fi /BT

2.4 & 5GHz

Model Name	Size	Wi-Fi	Interface	HT	BT	Status
AP5256	8*8*1.4mm	802.11 ac/a/b/g/n	SDIO3.0 + UART	HT80	2.1+5.0	MP
AP5203 (28nm)	8*8*1.4mm	802.11 a/b/g/n	SDIO3.0 + UART	HT20	2.1+5.0	MP

LGA Type & 1T1R

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Wi-Fi /BT

2.4 & 5GHz

Model Name	Size	Interface	GPS	GLONASS	Galileo	Beidou 3	IRNSS	Status
AP6168G (All in one)	22*17*2.65mm	UART	●	●	●	●	●	2021Q1

Thank You

AMPAK is your best partner



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