

Product Brief

PHY6252

Low-power, Full-stack/Multi-protocol, IoT Wireless
System on Chip



奉加科技

PHYPLUS Technologies

8.6/8mA

TX/RX

0.3uA

OFF Mode

19

GPIO

10dBm

Max TX Power

-99dBm

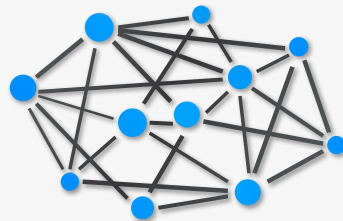
@BLE 1Mbps

-105dBm

@BLE 125Kbps



Bluetooth 5.4



BLE Mesh 1.1

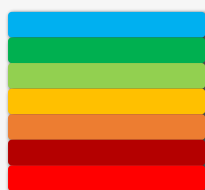
**Spider
Mesh**

PHYPLUS Proprietary

2.4GHz



**Proprietary 2.4GHz
Protocol Stack**



Full-stack
Bluetooth Solution



**Minimum BOM
(Bill of Material)**

SPECIFICATION

MCU	High-performance Low-power 32-bit Processor
Memory	512/256KB SPI NOR Flash 64KB SRAM 8KB Cache RAM 96KB ROM 256bit eFuse
Power Consumption	0.3uA @ OFF Mode (IO wake up only) 1uA @ Sleep Mode with 32KHz RTC 2.7/3.6/4.6uA @ Sleep Mode with 32KHz RTC and 32/48/64KB SRAM retention Receive mode: 8mA @3.3V Transmit mode: 8.6mA (0dBm output power) @3.3V power supply MCU: <90uA/MHz
GPIO	19 General Purpose I/O Pins GPIO status retention in off/sleep mode Configurable as serial interface and programmable IO MUX function mapping All pins can be configured for wake-up All pins for triggering interrupt
2.4GHz Transceiver	Compliant to Bluetooth 5.4 Sensitivity: -99dBm@BLE 1Mbps data rate -105dBm@BLE 125Kbps data rate TX Power -20 to +10dBm in 3dB steps
Peripherals	3 Quadrature Decoder (QDEC) 6-channel PWM 2-channel PDM/I2C/SPI/UART 4-channel DMA DMIC/AMIC with microphone bias 5-channel 12bit ADC with low noise voice PGA 6-channel 32bit Timer 1 Watchdog Timer Real Timer Counter (RTC)
Operating Temperature	-40°C ~+85 °C (Consumer) -40 °C ~+105 °C (Industrial)
RoHS Package	SSOP24/SOP16

OVERVIEW

低功耗无线通信系统级芯片PHY6252，最小系统仅需1个16MHz晶振和1个常规电容，专为电力供应场景设计

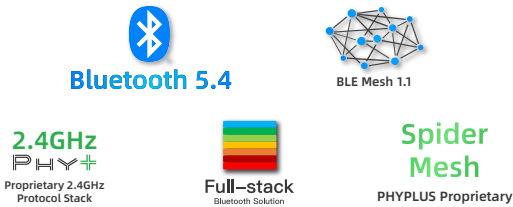
高性能多模射频收发机

通过硬件模块的充分复用以最低代价实现多模数字收发机。发射机最大发射功率达到10dBm；BLE 1Mbps速率下接收机灵敏度达到-99dBm，链路射频预算109dB@1Mbps；0dBm时收发功耗8.6/8mA（TX/RX）。此外创新了无需调制系数估计的相干解调（Coherent Demodulation），提供3dB的解调增益，将通信距离和抗干扰能力提高了数倍。

超低功耗芯片设计

采用高效率片上电源管理、低功耗射频前端、低功耗时钟产生架构、振荡器快速启动技术等电路技术，实现最低的峰值、平均和休眠功耗，保证常规200mAH的纽扣电池供电状态下能够持续工作五年以上。

自主知识产权全栈蓝牙方案和多协议栈支持



多样化的应用领域

智能穿戴设备、智能家居、智慧照明、智能电表、自拍器、防丢器、遥控器、手机外设、医疗健康、智能楼宇、智慧工业

Series Comparison

PHY62 Series	PHY6252	PHY6222	PHY6228	PHY6235	PHY6230	PHY6212
Bluetooth Qualified	5.4	5.4	5.4	5.4	5.4	5.4
Zigbee 3.0	N	N	N	N	N	N
MCU	32-bit	32-bit	32-bit	32-bit	32-bit	32-bit
SRAM	64K	64K	64K	8K	8K	138K
FLASH	256/512K	128K-8M	512K	256/512K	16KB OTP	512K/2M
TX/RX (mA)	8.6/8	4.6/4	4.6/4	10/10	10/10	6.7/6.7
OFF (uA)	0.3	0.3	0.3	1.6	0.7	0.7
Sensitivity@BLE 1M	-99	-99	-99	-96	-96	-97
Sensitivity@BLE 125K	-105	-105	-105	-	-	-103
Sensitivity@Zigbee 250K	-	-	-	-	-	-
Max TX Power	10	10	10	10	10	10
GPIO	19	22	66	15	19/11/3	33/19
Package	SSOP24 SOP16	QFN32/24	QFN88/64	SSOP24 SOP16	QFN24/SSOP24 SOP16/TSSOP8 SOP8/MSOP10	QFN48/32

关于奉加

奉加科技(上海)股份有限公司致力于研发世界一流的低功耗射频芯片技术与自主知识产权的通信协议栈，为AIoT提供灵活、安全、多功能、高性价比的低功耗无线通信芯片和方案。

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