

Barrot Technology Co.,Ltd. (Bluetooth & Wi-Fi Technical Expertise: 26 Years)

Company Overview

Head Office: Beijing City

Domestic Branches in China: Shanghai, Suzhou, Chongqing, Shenzhen

Partner Locations: Japan, Italy, Germany, the United States, India, Singapore, Australia, etc.

Certifications & Manufacturing: Certified with IATF16949 and VDA6.3; In-house manufacturing facility (Shenzhen, 3,300 m²) equipped with automatic STMx2 production lines and automated inspection equipment; Subject to regular audits by automotive OEMs and Tier 1 suppliers.

Employees & R&D: Over 300 employees; 60% of investment is allocated to R&D for wireless technologies.

Product Application Overview

Core Products: Bluetooth chipset, communication modules (Bluetooth & Wi-Fi), Bluetooth stack

Target Applications: Automotive, two-wheeled vehicles, industrial, medical, and consumer markets

Key Achievements

Bluetooth SIG Associate Member

Outstanding Contributor Award

Key Contributor to Bluetooth Technology

Speaker at Bluetooth Asia

Global mainstream commercial Bluetooth stack

Global strategic partner of major automotive IC companies (including Qualcomm, Infineon, NXP, MediaTek, Realtek, etc.)

Top-tier Bluetooth/Wi-Fi terminal reuse provider for the automotive industry

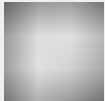
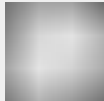
Bluetooth dual-mode / Low Energy IC company that offers chip-on-board and digital reuse

Module Matrix (Qualcomm chipset)											
Module P/N	i1509e-s	i1581e-s	i1595-su1	i1495-sp	i1465-sp	i1465-s	i1496-sp	i1568-sp	i1569-sp	i1887-sp	i1897-sp
Top view											
Package	LCC	LCC	LGA	LCC	LCC	LCC	LGA	LGA	LGA	LGA	LGA
Size (L×W×H, mm)	19.8x14.8x3.2	21.3x13.7x2.5	23x23x2.9	23x23x3.3	23.4x19.4x2.9	19.8x14.8x2.9	23x23x2.9	23x23x2.9	23x23x2.9	23x23x2.9	23x23x2.9
Frequency(Hz)	2.4G	2.4G	2.4G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G+5/6GHz	2.4G+5/6GHz	2.4G+5/6GHz
Bluetooth Spec	Bluetooth v5.4	Bluetooth v5.4	Bluetooth v5.4	Bluetooth v5.4	Bluetooth v5.0	Bluetooth v5.0	Bluetooth v5.2	Bluetooth v5.3	Bluetooth v5.3	Bluetooth v5.3	Bluetooth v5.3
Bluetooth Interface	UART	UART	UART	UART	UART	UART	UART	UART	UART	UART	UART
LE Audio	✓	✓	✓	✗	✗	✗	✗	✓	✓	✓	✓
Wi-Fi Spec	/	/	/	2.4G: 802.11 b/g/n/ac 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n/ac/ax 5G: 802.11 a/n/ac/ax	2.4G: 802.11 b/g/n/ac/ax 5G: 802.11 a/n/ac/ax	2.4G: 802.11 b/g/n/ac/ax 5/6G: 802.11 a/n/ac/ax	2.4G: 802.11 b/g/n/ac/ax/be 5/6G: 802.11 a/n/ac/ax/be	2.4G: 802.11 b/g/n/ac/ax/be 5/6G: 802.11 a/n/ac/ax/be
Wi-Fi Interface	/	/	/	PCIe	PCIe	SDIO	PCIe	PCIe	PCIe	PCIe	PCIe
MIMO or SISO	/	/	/	802.11n 1x1 SISO+ 802.11ac 2x2 MIMO	802.11ac 2x2 MIMO	802.11ac 2x2 MIMO	2x2 2.4G ax + 2x2 5G ax	2x2 2.4G ax + 2x2 5G ax	2x2 2.4G ax + 2x2 5G ax	2x2 2.4G be + 2x2 5G/6G be	2x2 2.4G be + 2x2 5G/6G be
Antenna	/	/	/	2	2	2	2	2	2	2	2
MAC number	/	/	/	Dual MAC	Single MAC	Single MAC	Dual MAC	Dual MAC	Dual MAC	Dual MAC	Dual MAC
Mode	/	/	/	AP/STA/P2P	AP/STA	AP/STA	AP/STA/P2P	AP/STA/P2P	AP/STA/P2P	AP/STA/P2P	AP/STA/P2P
Security	/	/	/	WAPI STA/WPA/ WPA2/AES/TKIP/ WPA3	WEP/TKIP/AES/ WPA/WPA2/WPA3	WEP/TKIP/AES/ WPA/WPA2/WPA3	WAPI STA/WPA/ WPA2/AES/TKIP/ WPA3	WEP/WPA/WPA2/ WPA3/WAPI	WEP/WPA/WPA2/ WPA3/WAPI	WEP/WPA/WPA2/ WPA3/WAPI	WEP/WPA/WPA2/ WPA3/WAPI
AEC-Q104				✓	✓		✓	✓	Planning	Planning	Planning

Module Matrix (Infineon chipset)

Module P/N	i1572-s	i1531-s	i1559-spu1	i1433-sp	i1570-sp	i1570-spu1
Top view						
Package	LGA	LGA	LCC	LCC	LGA	LGA
Size (L×W×H, mm)	10×10×2.4	18×14×2.5	22.7×20.2×2.8	22×22×2.3	23.4×19.4×2.4	23.4×19.4×2.4
Frequency(Hz)	2.4G	2.4G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G
Bluetooth Spec	Bluetooth v5.2	Bluetooth v5.4	Bluetooth v5.1	Bluetooth v5.2	Bluetooth v5.3	Bluetooth v5.3
Bluetooth Interface	UART	UART	UART	UART	UART	UART
LE Audio	x	√	x	x	x	√
Wi-Fi Spec	/	/	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n/ac/ax 5G: 802.11 a/n/ac/ax	2.4G: 802.11 b/g/n/ac/ax 5G: 802.11 a/n/ac/ax
Wi-Fi Interface	/	/	PCIe	PCIe, SDIO	PCIe	PCIe
MIMO or SISO	/	/	2x2 MIMO	1x1 SISO	2.4G/5G 2x2 MIMO	2.4G/5G 2x2 MIMO
Antenna	/	/	2	2	1	1
MAC number	/	/	Dual Mac	Single Mac	Single Mac	Single Mac
Mode	/	/	STA/AP/P2P	STA/AP/P2P	STA/AP/P2P	STA/AP/P2P
Security	/	/	WAPI STA, WPA, WPA2, WPA3, AES, TKIP	WEP, WPA, WPA2,AES, TKIP, WPA3	WAPI STA, WPA, WPA2, WPA3, AES, TKIP	WAPI STA, WPA, WPA2, WPA3, AES, TKIP
AEC-Q104	√		√		√	√

Module Matrix (NXP chipset)

Module P/N	i1647e-s	i1859-sp	i1890-sp	i1598-sp	i1811-s	i1892-sp	i1893-sp
Top view							
Package		LGA	LGA	LGA	LGA	LGA	LGA
Size (L×W×H, mm)	26x17x3	23×23×2.9	23×23×2.9	23×23×3	17.4×16.7×2.7	23×23×2.9	23×23×3.1
Frequency(Hz)	2.4G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G
Bluetooth Spec	Bluetooth v6.0, Channel Sounding	Bluetooth v5.3	Bluetooth v5.3	Bluetooth v5.3	Bluetooth v5.2	Bluetooth v5.4	Bluetooth v5.3
Bluetooth Interface	UART	UART	UART	UART	UART	UART	UART
LE Audio	x	x	x	x	x	√	√
Wi-Fi Spec	/	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac
Wi-Fi Interface	/	PCIe	PCIe	PCIe	SDIO	PCIe	PCIe
MIMO or SISO	/	2x2 MIMO	1x1 5G ax + 1x1 2.4G ac or 2x2 5G ax	2x2 5G ax + 1x1 2.4G ac	1x1 SISO	1x1 5G ax + 1x1 2.4G ac or 2x2 5G ax	2x2 5G/6G ax + 1x1 2.4G ax
Antenna	/	2	2	2	2	2	2
MAC number	/	Dual Mac	Dual Mac	Dual Mac	Single Mac	Dual Mac	Dual Mac
Mode	/	STA/AP/P2P	STA/AP/P2P	STA/AP/P2P	STA/AP/P2P	STA/AP/P2P	STA/AP/P2P
Security	/	WEP, WAPI, AES/CCMP, AES/GCMP, TKIP, WPA2, WPA3	WEP, WAPI, AES/CCMP, AES/GCMP, TKIP, WPA2, WPA3	WEP, WAPI, AES/CCMP, AES/GCMP, TKIP, WPA2, WPA3	WEP,WAPI, AES/CCMP, AES/GCMP, WPA2, WPA3,WPA	WEP,WAPI, AES/CCMP, AES/GCMP, WPA2, WPA3,WPA	WEP,WAPI, AES/CCMP, AES/GCMP, WPA2, WPA3,WPA
AEC-Q104	√	√	√			Planning	Planning

Module Matrix (Realtek chipset)

Module P/N	i1662e-s	i1421-su1	i1421-si	i1421-sw	i1852-sp	BC2652-sp	BC2521-s/BC2521-su1
Top view							
Package	LCC	LGA	LCC	LCC	LGA	LCC	LCC
Size (L×W×H, mm)	13.7×16.6×2.5	10×10×2.6	17×17×2.6	16×16×2.6	16×14×2.4	15×3×2	12×12×2.4/12×12×2.0
Frequency(Hz)	2.4G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G	2.4G/5G
Bluetooth Spec	Bluetooth v5.1	Bluetooth v5.3	Bluetooth v5.3	Bluetooth v5.3	Bluetooth v5.2	Bluetooth v5.4	Bluetooth v5.4
Bluetooth Interface	UART	UART	UART	UART	UART	UART	UART
LE Audio	x	x	x	x	x	x	x
Wi-Fi Spec	/	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n/ax 5G: 802.11 a/n/ac/ax	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac	2.4G: 802.11 b/g/n 5G: 802.11 a/n/ac
Wi-Fi Interface	/	SDIO	SDIO	SDIO	SDIO	PCIe	SDIO
MIMO or SISO	/	1x1 SISO	1x1 SISO	1x1 SISO	2.4G/5G 2x2 MIMO	2x2 MIMO	1x1 SISO
Antenna	/	1	1, IPEX	2	2	2	1
MAC number	/	Single Mac	Single Mac	Single Mac	Single Mac	Single Mac	Single Mac
Mode	/	STA/AP/P2P	STA/AP/P2P	STA/AP/P2P	STA/AP	STA/AP/P2P	STA/AP/P2P
Security	/	WPA, WPA2, WPA3	WPA, WPA2, WPA3	WPA, WPA2, WPA3	WPA, WPA2, WPA3	WPA, WPA2, WPA3	WPA, WPA2, WPA3
AEC-Q104							

Module Matrix (MTK chipset)				Module Matrix (BARROT chipset)	
Module P/N	i1821-sp	i1825-sp	i1827-sp	i13551e	i1552-s
Top view					
Package	LGA	LGA	LGA	LCC	LGA
Size (L×W×H, mm)	23×23×3.3	23×23×3	23×23×3	26.9×13×2	10×10×2.6
Frequency(Hz)	2.4G/5G/6G	2.4G/5G/6G	2.4G/5G/6G	2.4G	2.4G
Bluetooth Spec	Bluetooth v5.4	Bluetooth v5.4	Bluetooth v5.4	Bluetooth v5.4	Bluetooth v5.4
Bluetooth Interface	UART	UART	UART	UART	UART
LE Audio	x	x	x	/	/
Wi-Fi Spec	2.4G: 802.11 b/g/n/ac/ax 5/6G: 802.11 a/n/ac/ax	2.4G: 802.11 b/g/n/ac/ax/be 5/6G: 802.11 a/n/ac/ax/be	2.4G: 802.11 b/g/n/ac/ax/be 5/6G: 802.11 a/n/ac/ax/be	/	/
Wi-Fi Interface	PCIe	PCIe	PCIe	/	/
MIMO or SISO	2x2 MIMO	2x2 MIMO or 1x1+1x1	2x2 2.4/5G be + 2x2 5G/6G be	/	/
Antenna	2	2	2	/	/
MAC number	Dual Mac	Dual Mac	Dual Mac	/	/
Mode	STA/AP/P2P	STA/AP/P2P	STA/AP/P2P	/	/
Security	WPA, WPA2, WPA3 personal/enterprise	WPA, WPA2, WPA3 personal/enterprise	WPA, WPA2, WPA3 personal/enterprise	/	/
AEC-Q104			√		Ongoing

BARROT® Stack

Industry Leading 🏆

- High-performance, compliant Bluetooth v6.0 stack (QDID: QS38614), compatible with operating systems including Windows, Android™, Linux, FreeRTOS, Nucleus, uCOS-II, and even None OS.
- Deployed in tens of millions of units across automotive, two-wheeler, industrial, medical, and consumer applications — a commercially critical Bluetooth stack IP.

Fully Protocol-Compliant 🛡️

- Supports core components and protocols: HCI, RFCOMM, L2CAP, SDP, GAP (SCO Manager, Connection Manager, Device Manager, Security Manager), ATT, SMP, IDA, BNEP, AVDTP, AVCTP, SDAP, GATT, etc.
- Supports all standard Bluetooth profiles: ANP v1.0, BLP v1.1, FMP v1.0, HTP v1.0, HFP v1.0, TIP v1.0, PASP v1.0, GLP v1.01, RSCP v1.01, CSCP v1.01, FTP v1.31, OPP v1.21, BIP v1.21, HID v1.11, HSP v1.0, HFP v1.1, HSP v1.2, A2DP v1.4, AVRCP v1.6.3, PBAP v1.2.3, MAP v1.4.2, SPP v1.2, PAN v1.0, GAVDP v1.3, GOEP v1.21, etc.
- Supports all audio profiles: CAP v1.0, BAP v1.01, ASCS v1.01, BASS v1.0, PACS v1.02, MCP v1.0, MCS v1.0, HCGP v1.0, TBS v1.0, VCP v1.0, VCS v1.01, VOCS v1.01, AICS v1.0, MCIP v1.0, MICS v1.0, CSIP v1.01, CSIS v1.01, HAP v1.01, HAS v1.0, TMAP v1.0, BPP v1.01, RAP v1.07, RAAS v1.07.
- Supports Bluetooth SIG Mesh protocol/Low Energy v1.01.
- Supports Bluetooth SIG Mesh protocol/Low Energy v1.01.
- Supports codecs: AAC, SBC, aptX, LC3, LC3 plus, LDAC, LHDC, L2HC, etc.

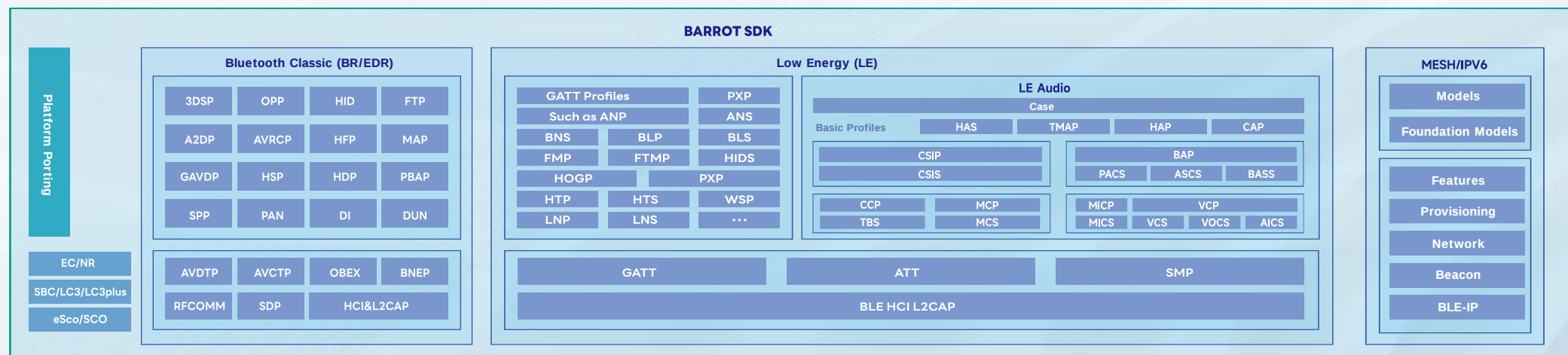
Flexible & Cross-Platform 🌐

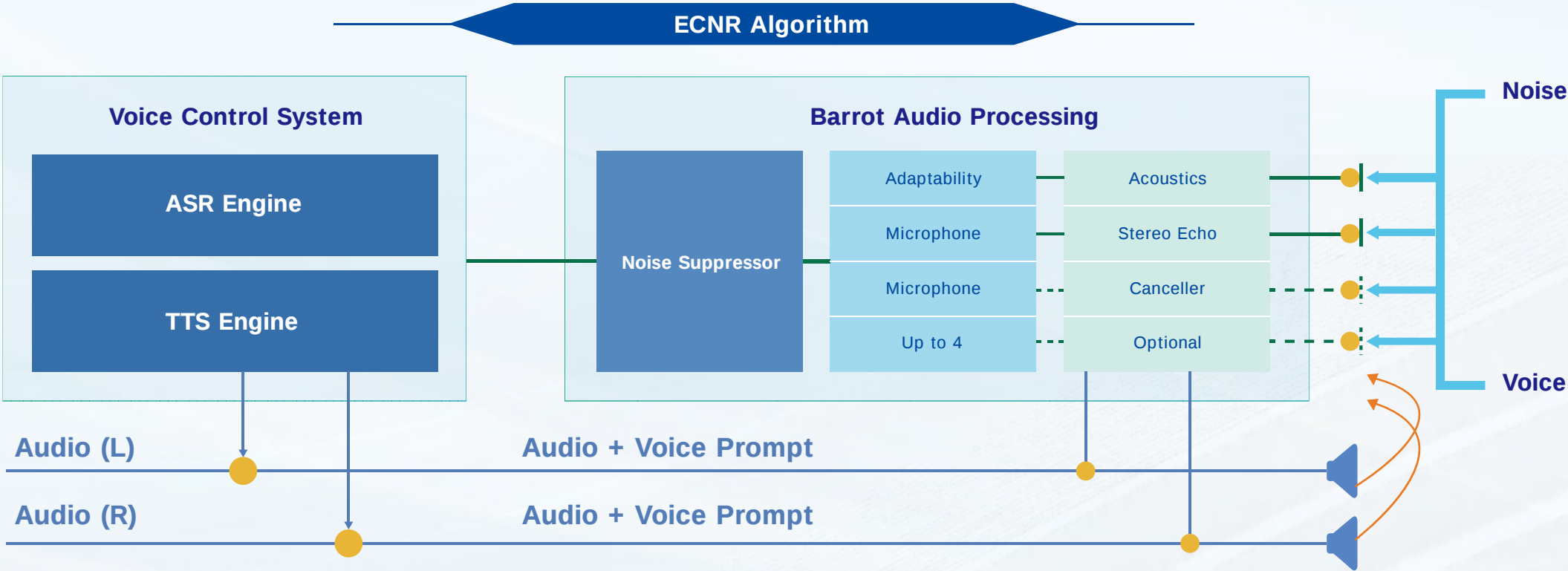
- BARROT SDK is an API abstraction layer for version/parameter management within the BARROT stack. It enables simple, high-capacity/performance customization via rich, well-documented API sets.
- Conducts functional and mutual compatibility testing for major mainstream SoCs worldwide.
- Mass-produced and compatible with leading SoCs: Qualcomm, NXP, Infineon, NVIDIA, TI, STM, Renesas, MTK, ITE, Sunplus, AMD, Telechips, Allwinner, Rockchip, Sienigne, SemiDrive, etc.

Renowned Team 👥

- The team has developed Bluetooth stacks since 1999.
- Bluetooth SIG Working Group Meeting Attendee.
- Mass production-tested, professional embedded engineers.
- 2021 Bluetooth SIG "Best OPP Contribution Award" winner.
- Bluetooth Asia Speaker.

BARROT Stack Architecture





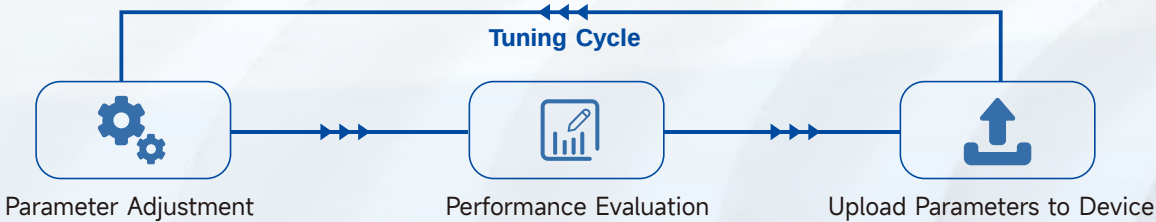
Hands-Free, Noise-Free, Echo-Free, Full Telecolex

- | | |
|--|---------------------------------|
| • Echo Cancellation | • Long echo tail (up to 1000ms) |
| • Speaker signal enhancement | • Fusion of hybrid downtalk |
| • Residual echo level: <60dB | • Transmission delay: 60ms |
| • Fast convergence (no initial echo): <300ms | |

Mode	CPU Load	RAM (Data)	ROM (Code)
NBS-Narrow Band Speech (8KHz)	45 MCPS	35K Bytes	55K Bytes
WBS-Wide Band Speech (16KHz)	65 MCPS	55K Bytes	55K Bytes
SWBS-Super Wide Band Speech (24KHz)	90 MCPS	60K Bytes	55K Bytes

Noise Reduction

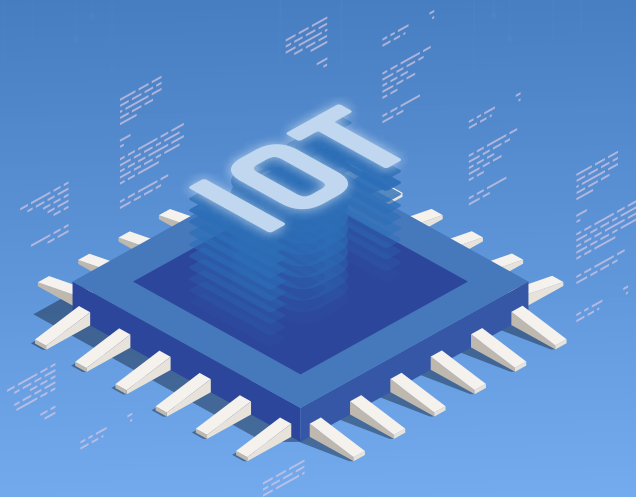
- | |
|--|
| • Noise attenuation via high frequency resolution (up to 30dB reduction) |
| • Fast noise adaptation (as low as 100ms for transient noise) |



BARROT

BARROT

CHIPSET INTRODUCTION



Industry-leading

HIGH-PERFORMANCE BLUETOOTH V6.0 STACK.

Flexible and Robust

BARROT SDK: VERSATILE DEVICE/DATABASE TOOL.

Full Profiles

SUPPORTS DIVERSE BLUETOOTH FEATURES.



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Contact Email:

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Applications



Remote controller



Portable Printer



Set-top box



CGM&Healthcare



Smart Home



Power Equipment



Portable Power Station



Camera



ESL&Elink Products



Indoor Positioning



Mesh Networking



Scanner



Multiple Function Printer



Findmy Application



TV&Live Streaming



Dongle&Transmitter



Car Peripherals



Lawnmower



BR1601A01/A02

Bluetooth version	Bluetooth 5.4 LE + 2.4G Proprietary
Profiles	ATT,GATT,HOGP,Mesh,AOA,Findmy
Bluetooth LE	1Mbps, 2Mbps,125kpbs,500kpbs
MCU	32bit RISC/64MHz
SRAM	48KB
Flash	256KB(A01);512KB(A02)
Rich Interface	SPI(2),I2C(1),I2S(1),UART(2 x USART+ 1 x LPUART), PWM(3 x 4 channels),GPIOs(21)
Working Current	RX:3.8mA@3.3V , TX:4.2mA @0dBm/3.3V , ADV: 13µA@1s advertising interval
Supply Voltage	1.8V~3.6V
Sleep Current	1.4µA
Tx Power	-20 to +6dBm
Rx Receive Sensitivity	-96dBm@1Mbps, -93dBm@2Mbps
Security Mechanism	AES-128



BR8051A01/A02

Bluetooth version	Bluetooth 5.2 BR/EDR+LE/Bluetooth 5.4 BR/EDR
Profiles	ATT,GATT,HOGP,Mesh,AOA,Findmy
Bluetooth LE	BR/EDR:1Mbps, 2Mbps,3Mbps ; BLE:1Mbps,2Mbps
MCU	32-bit RISC/96MHz
SRAM	96KB
Flash	512/Support XIP & CACHE
Rich Interface	SPI(2),I2C(1),I2S(1),UART(2 x up to 4Mbps), PWM(4 sets),GPIOs(16)
Working Current	RX: 7.8mA@3.3V , TX: 6.8mA@0dBm/3.3V Active: 5.5mA
Supply Voltage	1.8V~3.3V
Sleep Current	400µA
Tx Power	-30 to +6dBm
Rx Receive Sensitivity	-99.5dBm@1Mbps BLE , -97dBm@1Mbps BT -95dBm@EDR 2Mbps , 92dBm@EDR 3Mbps
Security Mechanism	AES-128



BR8051A12

Bluetooth version	Bluetooth 5.4 BR/EDR+LE
Profiles	ATT,GATT,HOGP,Mesh,AOA,Findmy
Bluetooth LE	BR/EDR:1Mbps, 2Mbps,3Mbps , BLE:1Mbps,2Mbps
MCU	32-bit RISC/96MHz
SRAM	96KB
Flash	NO
Rich Interface	SPI(2),I2C(1),I2S(1),UART(2 x up to 4Mbps), PWM(4 sets),GPIOs(16)
Working Current	RX: 7.8mA@3.3V , TX: 6.8mA@0dBm/3.3V Active: 5.5mA
Supply Voltage	1.8V~3.6V
Sleep Current	400µA
Tx Power	-30 to +6dBm
Rx Receive Sensitivity	-94dBm@1Mbps BLE , -91dBm@2Mbps BLE -90dBm@1Mbps BT , -92dBm@EDR 2Mbps -85dBm@EDR 3Mbps
Security Mechanism	AES-128



BR8654A02

Bluetooth version	Bluetooth 5.4 BR/EDR+LE
Profiles	ATT,GATT,HOGP,Mesh,AOA,Findmy
Bluetooth LE	BR/EDR:1Mbps, 2Mbps,3Mbps , BLE:1Mbps,2Mbps
MCU	32-bit RISC/96MHz
SRAM	96KB
Flash	512KB
Rich Interface	SPI(Quad SPI, up to 24MHz),I2C(1),I2S(1), UART(2 x up to 4Mbps),PWM(4 sets),GPIOs(16)
Working Current	RX: 7.8mA@3.3V , TX: 6.8mA@0dBm/3.3V Active: 5.5mA
Supply Voltage	1.8V~3.3V
Sleep Current	400µA
Tx Power	-30 to +6dBm
Rx Receive Sensitivity	-94dBm@1Mbps BLE , -90dBm@1Mbps BT -92dBm@ EDR 2Mbps , -85dBm@EDR 3Mbps
Security Mechanism	AES-128



BR8652A12

Bluetooth version	Bluetooth 5.4 BR/EDR+LE
Profiles	ATT,GATT,HOGP,Mesh,AOA,Findmy
Bluetooth LE	BR/EDR:1Mbps, 2Mbps,3Mbps , BLE:1Mbps,2Mbps
MCU	32-bit RISC/96MHz
SRAM	96KB
Flash	NO
Rich Interface	SPI(2),I2C(1),I2S(1),UART(2 x up to 4Mbps), PWM(4 sets),GPIOs(16)
Working Current	RX: 7.8mA@3.3V , TX: 6.8mA@0dBm/3.3V Active: 5.5mA
Supply Voltage	1.8V~3.3V
Sleep Current	400µA
Tx Power	-30 to +6dBm
Rx Receive Sensitivity	-94dBm@1Mbps BLE , -90dBm@1Mbps BT -92dBm@ EDR 2Mbps , -85dBm@EDR 3Mbps
Security Mechanism	AES-128



BR8052A01

Bluetooth version	Bluetooth 5.2 BR/EDR+LE
Profiles	ATT,GATT,HOGP,Mesh,AOA,Findmy
Bluetooth LE	1Mbps, 2Mbps,3Mbps
MCU	32-bit RISC/24MHz
SRAM	48KB
Flash	NO
Rich Interface	SPI(1),I2C(NO),I2S(NO),UART(2 x up to 4Mbps), PWM(NO),GPIOs(20)
Working Current	RX: 7.8mA@3.3V , TX: 6.8mA@0dBm/3.3V Active: 5.5mA
Supply Voltage	1.8V~3.3V
Sleep Current	400µA
Tx Power	-30 to +6dBm
Rx Receive Sensitivity	-94dBm@1Mbps BLE , -90dBm@1Mbps BT -92dBm@ EDR 2Mbps , -85dBm@EDR 3Mbps
Security Mechanism	AES-128