

Realtek BT Audio Gaming Solution



Bluetooth Audio Roadmap

Standard

RTL8763B



Low power

★ Available Now

- BT5 Dual Mode Supported
- Cortex-M4 80MHz+DSP 160MHz+ Codecs
- 24Bitx96KHz Analog Output/Input
- 24Bitx192KHz I2S interface/SPDIF
- USB Audio/ Charger/2xMic/AEC/NR
- Bluetooth Classic/BLE Concurrent
- Low Power 6.5mA (A2DP)
- Open SDK Platform to utilize internal DSP
- Low latency mode supported (BFP)
- Bluetooth Headset and speaker
- QFN40/48/68/TFBGA 4.5x6
- Low power Real Wireless Stereo Headset
- MP: 2018/Q1



Valued

RTL8773B



Low power / ANC

★ Available Now

- BT5.1 Dual Mode Supported
- Tx Power 10dBm
- High-Res audio HW integrated
- USB Audio/ Charger/2xMic/AEC/NR
- Google Fast Pairing
- Low power hybrid ANC
- - <1mA when ANC on
- Opus encoder for AI headset/speaker
- RWS v2.0
- - Role Swap function
- Low latency mode supported
- Low Power consumption <7mA (A2DP)
- Very Small Package QFN4.5x6.5, TFBGA 4.5x6
- MP: 2019/Q3



Superior

RTL8773C



Ultra low power

★ Available Now

- Bluetooth 5.2 ready
- Cortex-M4 120MHz
- Hifi Mini 200MHz (ext DSP supported)
- Support HW VAD (2 state wake word)
- Tx Power 10dBm
- Hi-Res audio
- USB Audio(HS)/Charger/2xMic/AEC/NR
- Low power hybrid ANC(PALU)
- Ultra Low latency mode supported
- Good RF sensitivity -95dBm(Typ)
- Ultra Low Power consumption <5.5mA (A2DP)
- eRWS mode supported (<5.5mA)
- Small Package 4.5x6 TFBGA 88 or 130
- MP: 2020/Q2



LE Audio

RTL8773E



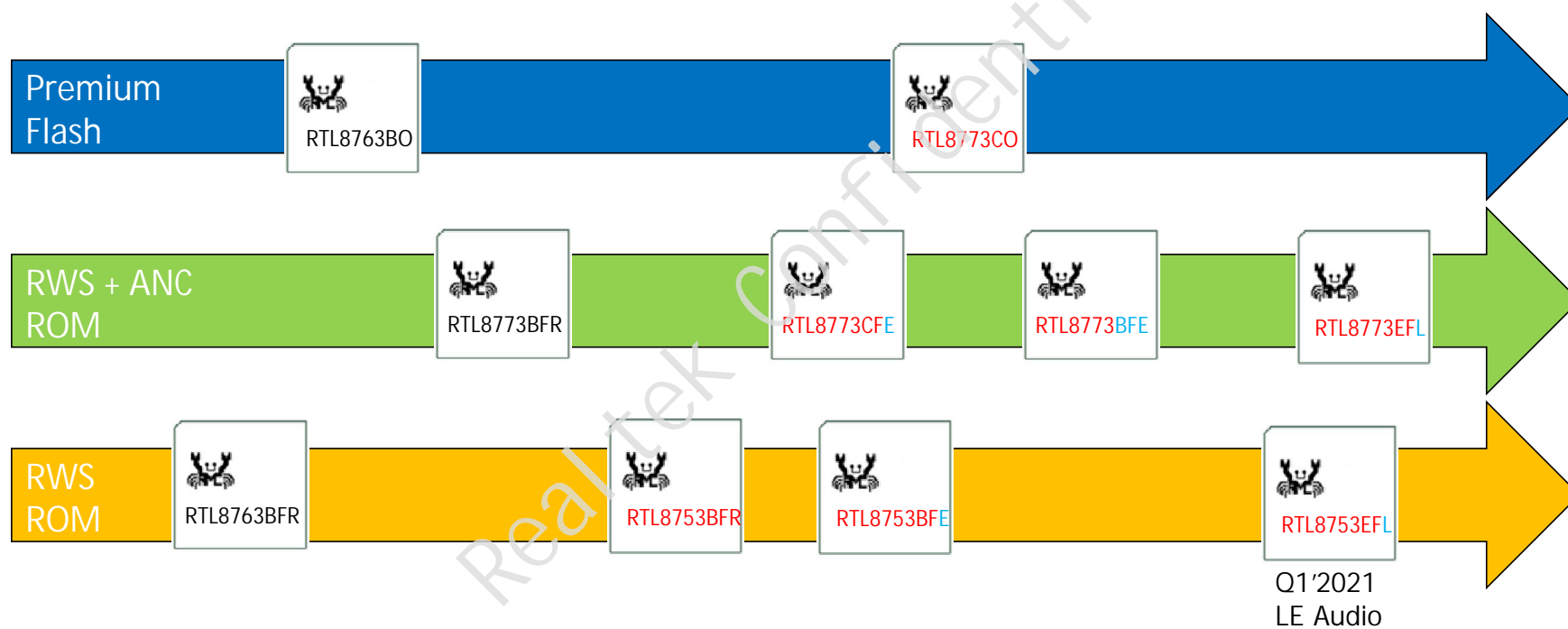
LE Audio/ANC

★ Coming soon

- Bluetooth 5.2 ready
- LE ISO supported
- LC3 codec
- 32K Voice supported
- Cortex-M4 100MHz
- Hifi Mini 200MHz (ext DSP supported)
- Tx Power 12.5dBm
- Hi-Res audio
- USB Audio(HS)/Charger/3xMic Algo/AEC/NR
- Low power hybrid ANC(PALU)
- Ultra Low latency mode supported
- Class D Audio Amplifier
- Good RF sensitivity -95dBm(Typ)
- eRWS mode supported (<5mA, 50%, 32ohm)
- LE Audio (<4.5mA, 50%, 32ohm)
- Small Package 4.5x6 TFBGA 88 or 130
- CS: 2021/Q1



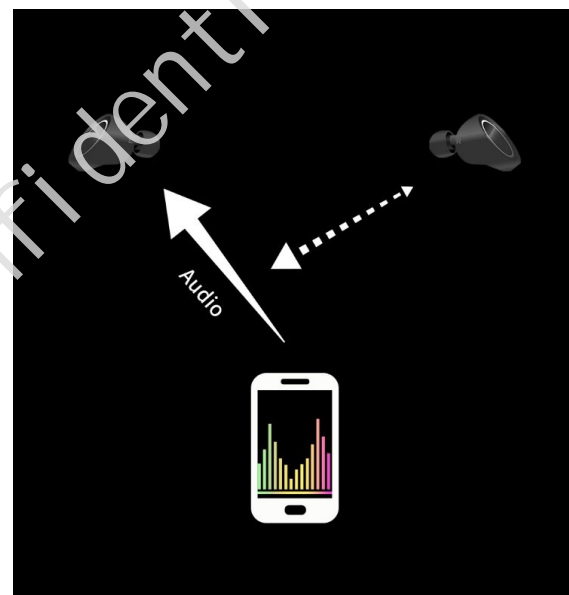
Bluetooth Audio Portfolio



Realtek eRWS Technology

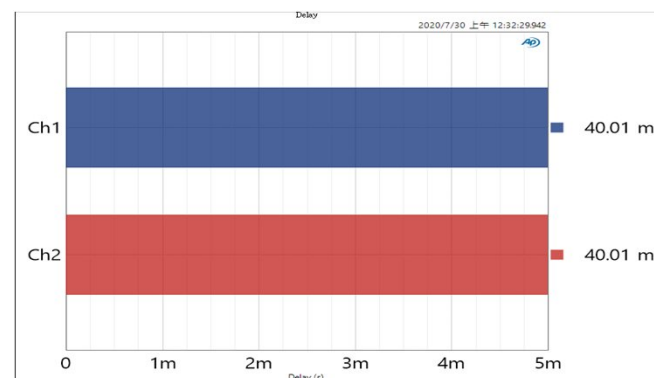
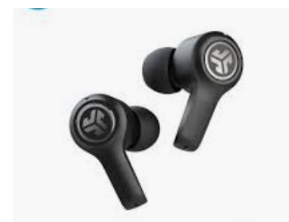
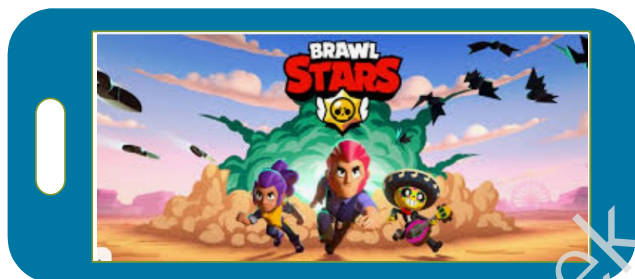
■ RTK sniff mechanism

- No smartphone limitation
- Ultra low power in A2DP & HFP
- Seamless role swap
- Multi-link supported
- RTL8753BFE, RTL8773CFE, RTL8773CO support eRWS technology
- 5mA for eRWS A2DP



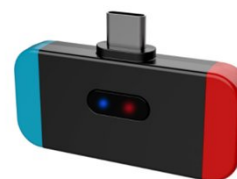
Headset Gaming mode supported

- 85ms latency in gaming mode v1
- 40ms latency in gaming mode v2 (eRWS model)
- **Separated** "sound effect" can be set in gaming mode



Bluetooth transmitter solution

- RTL8753BAU series
- Dual-mode, Dual Core, **BT5**
 - MCU: 32-bit M4, up to 60MHz
 - DSP: **Tensilica HiFi-Mini up to 120MHz**
- Built-in 16Mbits FLASH memory
- TX 10dBm (typ.) and 10dBm (typ.) maximal output power for Bluetooth classic and BLE, respectively
- Receive sensitivity (typ.): -94.5dBm (1M BR), -94 dBm (2M EDR), -97.5dBm (1M BLE) and -94.5dBm (2M BLE).
- Package: **QFN-46 4.5mmX6.5mm**



Bluetooth transmitter solution

■ RTL8753BAU - Models

	RTL8753BAU-VL	RTL8753BAU
Target Application	TV/PC Music Audio Dongle Gaming Audio BT Dongle Low Latency Audio BT Dongle	USB Audio BT Dongle USB Conference/Voice Call BT Dongle
User Scenario	AUX Audio IN+A2DP SRC USB Audio IN+A2DP SRC Low Latency(minimal delay on dongle : 8ms) RTK Talking Profile Supported Dual Headset Connections Supported	USB Audio+A2DP SRC+AVRCP TG USB Audio+HFP AG
Other Features	OTA Firmware update supported USB Firmware update supported 5V Charger Supported	USB Firmware update supported
Schedule	MP	

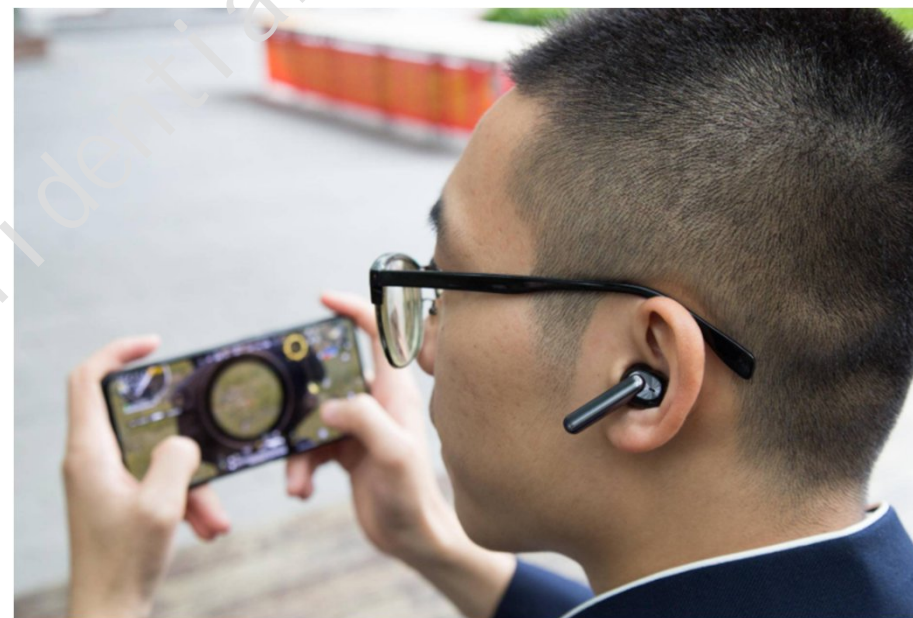
Gaming stereo headset solution

- End2End latency < 30ms
- Add RTK Talking End2End latency < 40ms
- Interface support AUX IN and USB
- USB audio support
- Also a normal bluetooth headset
- Low power
- RTK Talking Profile sample rate 16K/16bits
- Android/IOS/Windows support



Gaming eRWS headset solution

- End2End latency < 65ms
- Interface support AUX IN and USB
- USB audio support
- Also a normal bluetooth headset
- Android/IOS/Windows support



Audio Streaming

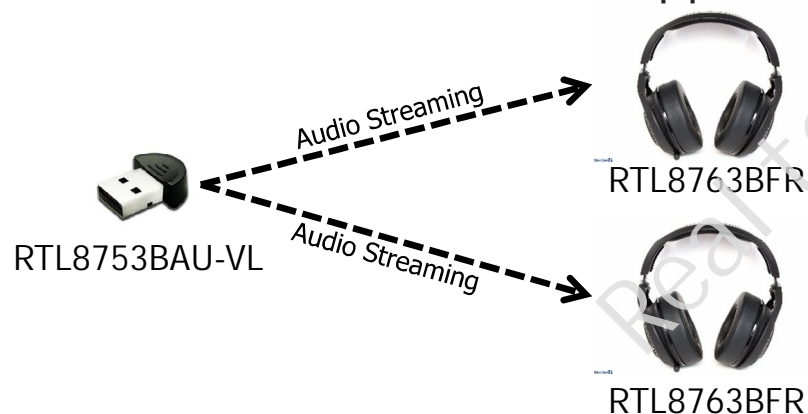


RTL8753BAU-VL

RTL8753BFE

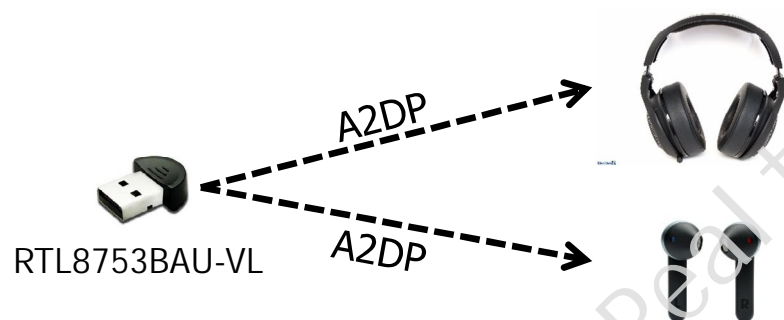
Low latency stereo headset solution

- Two headset End2End latency < 40ms
- Interface support AUX IN and USB
- USB audio support
- Normal Bluetooth headset support (no low latency)
- Android/IOS/Windows support




Normal transmitter dongle solution

- Max support 2 Bluetooth audio device
- Support Bluetooth headset, speaker...
- Interface support AUX IN and USB
- USB audio support
- Android/IOS/Windows support



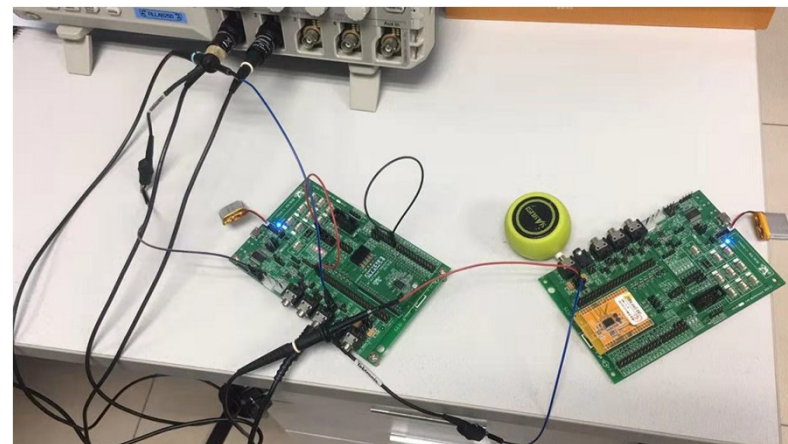
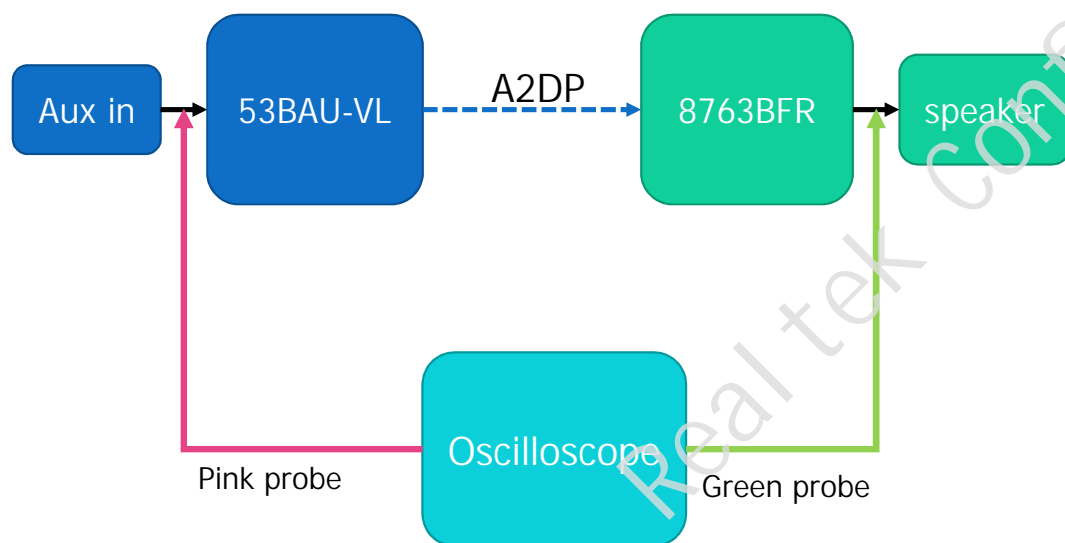
Full Portfolio for Gaming

	Part No.	RX Numbers	End2End Latency	Function	Application
Dongle 8753BAU-VL 	8763BFR	1	<30ms	Stereo A2DP only	Mobile Gaming
	8763BFR	2	<40ms	Stereo A2DP only	TV & Music
	8763BFR	1	<40ms	Stereo A2DP + RTK Talking Profile	PC/Mobile Gaming + Gaming console
	8753BFE	1	<65ms	eRWS A2DP only	Mobile Gaming



Latency test methods and result

RTL8753BAU-VL+RTL8763BFR End2End result = 29ms



Thank You

CNBG 2020