

Wuxi Weida Intelligent Electronics Co., Ltd.

Remote Control Specification

Client's name:	
Customer Part Number:	
WeiDa Part Number:	WH-8331_BLE
Types of:	Bluetooth + voice + infrared
date:	2025.06.04
Drafting:	LiLinyu
Review:	Gause Huang
Approve:	ZhengWenge

Name of contractor: Wuxi Weida Intelligent Electronics Co., Ltd.
Address: No. 85 Feihong Road, Liangxi District, Wuxi City, Jiangsu Province, China
(TEL): 0510-85421878
(FAX): 0510-85388557
(Web): <http://www.cnwddz.com>

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一、Remote control renderings





Button color: ☐ Rock Candy
Print color: ☒ Pantone 1795C
☒ Pantone 2173C
☒ Pantone 7549C
☒ Pantone 2257C



Button color: ☐ Rock Candy
Print color: ☒ Pantone 1788 C
☒ Pantone Black



Button color: ☐ Rock Candy
Print color: ☒ Pantone 1795 C



Button color: ☐ Rock Candy
Print color: ☒ Black



Button color: ☐ Rock Candy
Print color: ☒ Black

Other Keys

Button color: ☒ Dark Anthracite
Print color: ☐ Rock Candy

Highlight Keys

Button color: ☐ Rock Candy
Print color: ☒ Dark Anthracite



Button color: ☐ Rock Candy
Print color: ☒ Dark Anthracite

二、Description of remote control function requirements

1、Remote control key value

System code:	0X8877
Code format:	NEC

No.	Funtion	IR	Usage Page	Usage ID
1	Power	0X21	0X0C	0X0030
2	Input	0X60	0X0C	0X01BB
3	Bookmark	0X74	0X0C	0X022A
4	Google assistant	0X46	0X0C	0X0221
5	1	0X01	0X07	0X001E
6	2	0X02	0X07	0X001F
7	3	0X03	0X07	0X0020
8	4	0X04	0X07	0X0021
9	5	0X05	0X07	0X0022
10	6	0X06	0X07	0X0023
11	7	0X07	0X07	0X0024
12	8	0X08	0X07	0X0025
13	9	0X09	0X07	0X0026
14	0	0X0A	0X07	0X0027
15	Subtitles	0X58	0X0C	0X0061
16	Info	0X29	0X0C	0X01BD
17	Red	0X4B	0X0C	0X0069
18	Green	0X4A	0X0C	0X006A
19	Yellow	0X49	0X0C	0X006C
20	Blue	0X4C	0X0C	0X006B
21	Setting	0X0F	0X0C	0X0096
22	UP	0X15	0X0C	0X0042
23	Down	0X16	0X0C	0X0043
24	Left	0X17	0X0C	0X0044
25	Right	0X18	0X0C	0X0045
26	OK	0X19	0X0C	0X0041
27	Back	0X48	0X0C	0X0224
28	Home	0X47	0X0C	0X0223
29	Live tv Guide	0X32	0X0C	0X008D
30	Volume up	0X23	0X07	0X0080
31	Volume down	0X24	0X07	0X0081
32	Mute	0X25	0X0C	0X00E2
33	Channle up	0X33	0X0C	0X009C
34	Channle down	0X34	0X0C	0X009D
35	Youtube	0X64	0X0C	0X0077
36	Netflix	0X63	0X0C	0X0078
37	Prime video	0X67	0X0C	0X0079

38	APP04	0X68	0X0C	0X007A
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2、Remote control instructions

1.Basic requirements for remote control

1). When Bluetooth is connected, the remote control sends the Bluetooth key value; when Bluetooth is not connected, the infrared key value is sent.

2). Indicator light: infrared: red, each time you press the button, the indicator light flashes. Bluetooth: green, the indicator light flashes every time you press the button

3). Low voltage reminder: When the battery is lower than 2.4V, the indicator light flashes quickly, as long as it is still in operation, it will keep flashing. When the remote control is no longer operated, it flashes 5 times or flashes for 3 seconds and then stops And goes out.

4). Pairing method:

a. Simultaneously press and hold the "HOME" + "BACK" buttons for 4 seconds, while pressing the button, the green indicator light keeps on. When entering the pairing mode (Bluetooth is not connected) the green indicator light flashes, if the pairing is successful, the indicator light stops , And the remote control starts to work in Bluetooth.

b. If the pairing is unsuccessful in two minutes (re-pairing) or 10 minutes (pairing), the green LED stops flashing, the red LED flashes 4 times, the remote control stops pairing and returns to the previous state.

c. If the PIN or secret key is missing, after disconnecting, the remote control will send 2 minutes or 10 minutes of indirect advertising data in pairing mode

d. Cancel pairing mode: cancel pairing with STB to clear the "remote control" binding cache, delete the device binding cache (manual method-optional), when inserting the battery, press and hold the [BACK] key.

e. Connection interval: 12.5ms; connection dependent delay: 99 (1s); connection monitoring timeout: 4s;

f. Reconnect: If accidentally disconnected from the set-top box, the remote control should automatically try to reconnect the set-top box; it is recommended that the remote control use a larger advertising interval (for example, 20 milliseconds) within the first 30 to 60 seconds after disconnection). If the connection is not re-established after 30 to 60 milliseconds, the remote control may switch to a more power-efficient advertising interval. If the user's intervention (such as pressing a button) is not detected, the remote control may stop trying to connect after an interval of 2 minutes; if the remote control is not connected, and the user presses the button on the remote control to initiate the establishment and Connected, after the remote control successfully establishes a connection, the event of the button press should be cached and forwarded to the STB;

5). Key timeout: If one or more keys are continuously pressed for more than 30 seconds, the remote control will stop transmission to protect the battery from discharging.

6). Remote control distance: $\geq 10\text{m}$

7). Bluetooth device name: RemoteG20

8).Bug Report: Press 【D-PAD CENTER】 + 【BACK】 key for more than 1 second to get STB error report; in IR mode, the code data sent is 0X96.

9). Support to connect to devices with Bluetooth version 5.0

10). Cancel pairing mode: cancel pairing with STB to clear the "remote control" binding cache, delete the device binding cache (manual method-optional), when inserting the battery, press and hold the [BACK] key.

11) . Restore factory settings: Press [D-PAD CENTER] + [MUTE] key for more than four seconds, the green indicator light flashes twice to confirm that it is deleting the existing pairing table (its setting value).

12).Bluetooth boot broadcast package

Element	Byte	Value	Description
Adv Type Flags	Byte0	0x02	Length of the following payload bytes in this data block
	Byte1	0x01	The data type = Advertising Type Flags
	Byte2	0x04	EDR_NOT_SUPPORTED(0x04)
UUID 16Bits	Byte3	0x03	Length of the following payload bytes in this data block
	Byte4	0x03	The data type = Complete list of 16-bit UUIDS
	Byte5	0x12	LSB of UUID value
	Byte6	0x18	MSB of UUID value
Appearance	Byte7	0x03	Length of the following payload bytes in this data block
	Byte8	0x19	The data type = Appearance
	Byte9	0x80	LSB of Appearance value (Generic: Remote Control)
	Byte10	0x01	MSB of Appearance value (Generic: Remote Control)
Manufacturer Specific	Byte 11	0x0d	Length of the following payload bytes in this data block
	Byte12	0xff	The data type = Manufacturer Specific
	Byte13-Byte14	0x5d,0x00	Manufacturer ID
	Byte15-Byte17	0x03,0x00,0x01	Additional Data 0x01: for power key 0x02: for netflix wakeup
	Byte18	0x01	Key Press Counter
	Byte19-Byte24	STB BT Address	STB BT Address

数据格式 03 00 01 * + 盒子的bt mac.

13) Vender ID: 0x0957 Product ID: 0x0007

2. Google SSU feature

1). Flashing requirements:

After ssu learning, press the ssu function key and the red and green lights flash at the same time.

After ssu learning is not performed or when the learning record is deleted, the function key of ssu flashes red when Bluetooth is not connected, and flashes green when Bluetooth is connected.

2). SSU function keys: Power, VOL+, VOL-, Mute, Input

1). ATV voice initialization (function)

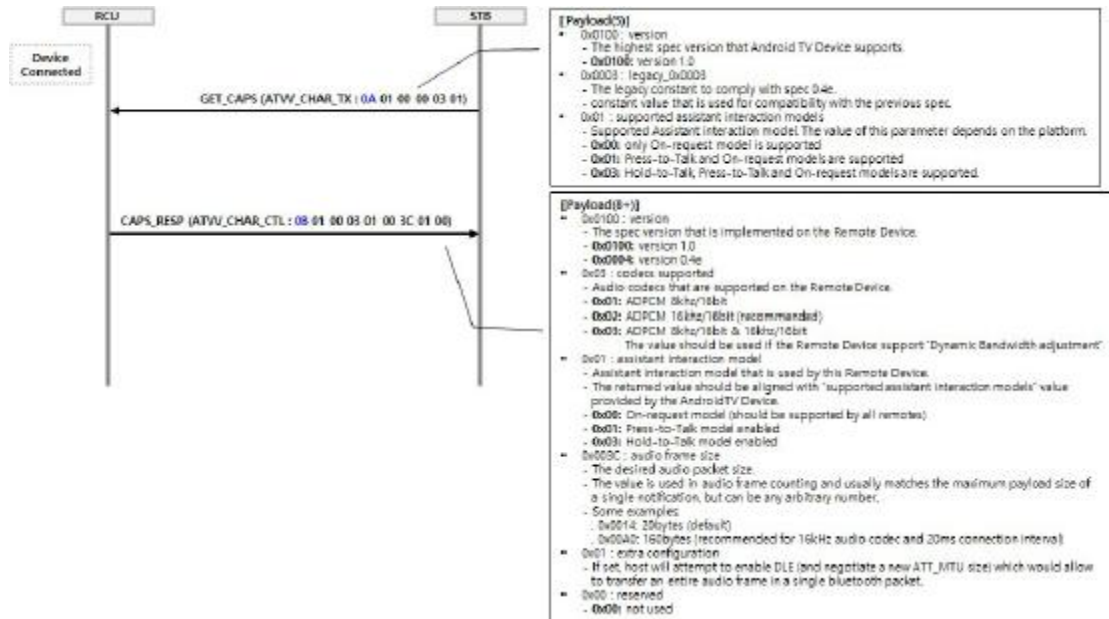
a). After the remote control device is paired and connected, the set-top box will send commands

to it to obtain the remote control function.

b). The command will be sent through the ATVV_CHAR_TX feature.

c). Then, the remote control should use ATVV_CHAR_CTL notification to respond to its function.

d). Flow chart



2). Voice search initiated by the remote control (on demand, old version)

a). For the voice function, it is recommended to receive more than 10 meters away.

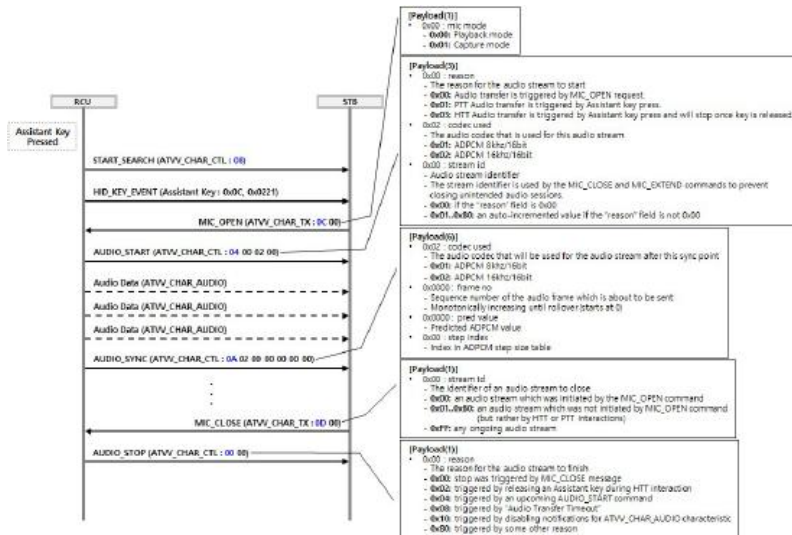
b). The distance between the mouth and the microphone should be between 5 and 30 cm.

c). If you press the [ASSISTANT] key, the remote control will first send the START_SEARCH command to the STB, then send the HID_KEY_EVENT to the STB, and then the STB will send the MIC_OPEN command back to the remote control.

d). The green indicator light is on, the remote control sends the AUDIO_START command and transmits voice data, the duration is 15 seconds.

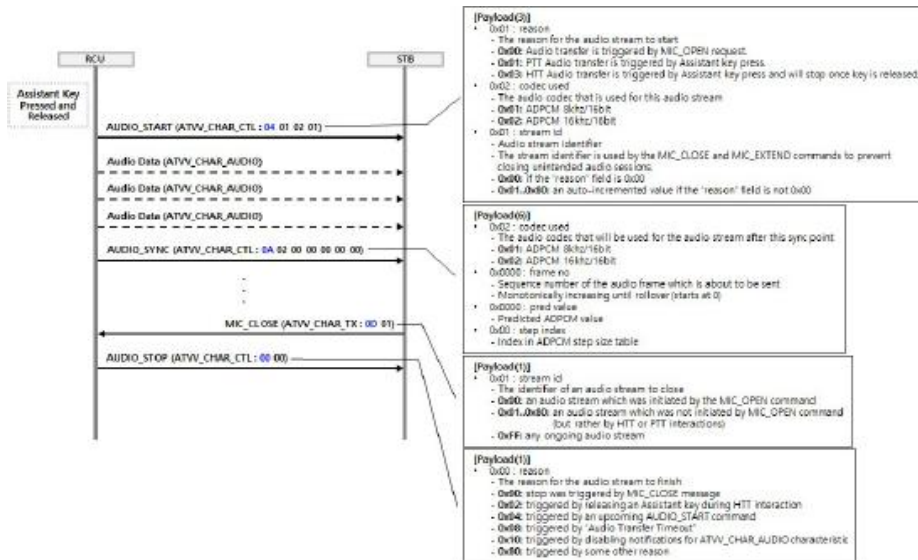
e). After the timeout duration or the remote control receives the MIC_CLOSE command from the set-top box, the remote control sends the AUDIO_STOP command to the set-top box, and the green indicator light goes out.

f). Flow chart



3). Voice search initiated by the remote control (PTT, push-to-talk)

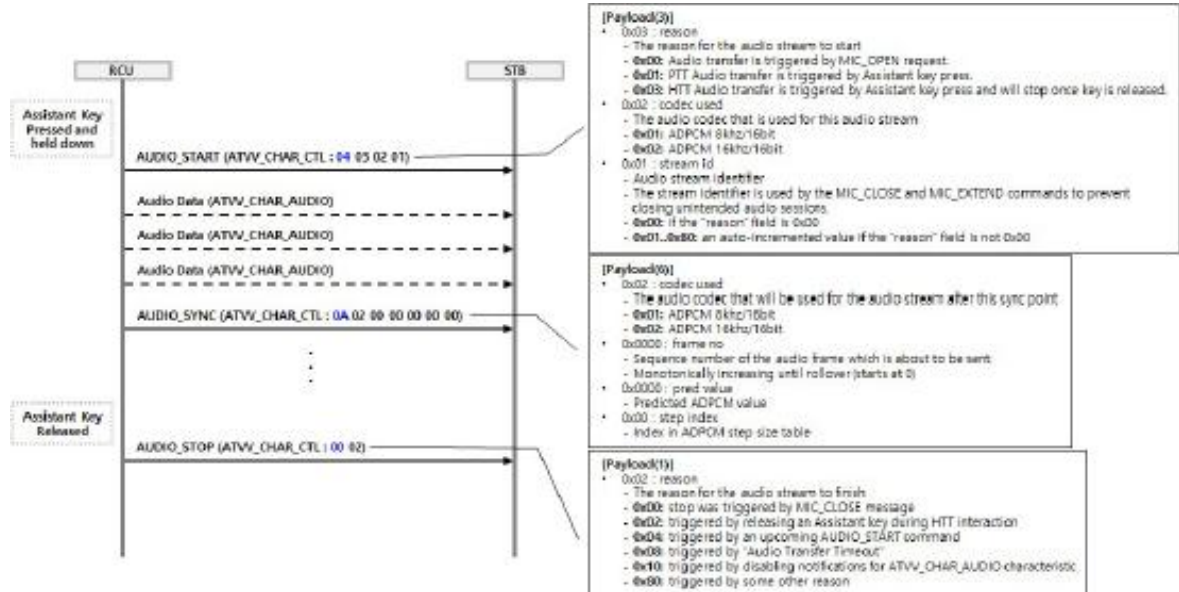
- For the voice function, it is recommended to receive more than 10 meters away.
- The distance between the mouth and the microphone should be between 5 and 30 cm.
- If you press and release the [ASSISTANT] key, the green LED will start to flash.
- The remote control sends the AUDIO_START command and transmits voice data, the duration is 15 seconds.
- After the timeout duration or the remote control receives the MIC_CLOSE command from the set-top box, the remote control sends the AUDIO_STOP command to the set-top box and the green indicator light goes out
- Flow chart



4). The remote control initiates a voice search (HTT, keep the call)

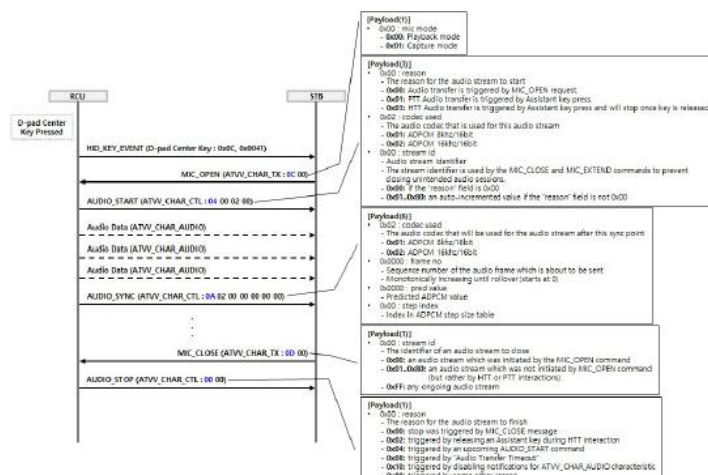
- For the voice function, it is recommended to receive more than 10 meters away.
- The distance between the mouth and the microphone should be between 5 and 30 cm.
- If you hold down the [ASSISTANT] (auxiliary) key, the green LED lights up.
- The remote control sends the AUDIO_START command and transmits voice data.
- If you release the [ASSISTANT] key, the remote control will send AUDIO_STOP to STB, and the green LED indicator will go out.

f). Flow chart.



5). Voice search initiated by the launcher

- For the voice function, it is recommended to receive more than 10 meters away.
- The distance between the mouth and the microphone should be between 5 and 30 cm.
- The user uses the navigation and [DPAD CENTER] key to select and verify the voice search on the launcher.
- The remote control sends HID_KEY_EVENT to the set-top box, and the set-top box sends the MIC_OPEN command back to the remote control.
- The green indicator light is on, the remote control sends the AUDIO_START command and sends voice data within 15 seconds of timeout.
- After the timeout duration or the remote control receives the MIC_CLOSE command from the set-top box, the remote control sends the AUDIO_STOP command to the set-top box, and the green indicator light goes out.
- Flow chart



4. Other requirements for remote control

- Pairing function requirements: there must be no problems that the Bluetooth device cannot be scanned or paired (including continuous pressing of the pairing key within a short period of time), please verify 50 times to ensure that there is no problem;

- 2). Reconnection function requirements: there must be no problems with the connection failure, including the box power failure and the connection, the remote control power failure and the connection, stand for 2 hours to reconnect, etc., please verify 50 times to ensure that there is no problem;
- 3). Anti-interference function requirements: there must be no problems that greatly affect the host's WIFI throughput, please ensure that the host's WIFI throughput is normal when connecting the remote control;
- 4). Performance requirements: It is required to support $\geq 10\text{m}$, and there must be no voice call jams, loss, and remote control button jams, missing codes, or continuous keys;
- 5). Power consumption requirements: the remote control can be used continuously for at least 6 months
- 6). Voice: 16Khz voice sample with 16-bit sampling, short press the voice button (color button) to start recording, and the remote control will stop recording after receiving the stop recording command from the voice engine. The voice timeout is protected for 30s, and the recording is forced to exit.
- 7). The box software can control the opening and closing of the MIC.
- 8). Support the remote control MIC and other MIC (such as the recording key on the phone apk) to alternate and switch voice input.

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Information

The device has been evaluated to meet general RF exposure requirement.

The device can be used in 0mm exposure condition, compliance with exposure requirements.

Only in the stated conditions, the device is shown to fully comply with the FCC RF Exposure requirements of KDB 447498.