

: GETEC-C1-19-182 : GETEC-E3-19-003

APPENDIX H

: USER'S MANUAL

EUT Type: Remote Controller

FCC ID.: OZ5B903

1 - Mechanical Requirements

1.1 - Design

- Dimensions: 167 x 47 x 16.8mm



	MATERIAL	HIPS
TOP CASE	MATERIAL COLOR	BLACK
	PRINT COLOR1	WHITE
BOTTOM CASE	MATERIAL COLOR BLACK	BLACK
BATTERY COVER	THE COLOR	22.1011
	MATERIAL	SILICONE RUBBER
	FORMING COLOR 1	BLACK
	FORMING COLOR 2	TRANSLUCENT CLEAR
	FORMING COLOR 3	WHITE
	PRINT COLORS	WHITE
RUBBER BUTTON	PRINT COLORS	PT 1795C (RED)
	PRINT COLORS	P.T 2173C(BLUE)
	PRINT COLORS	P.T 7738C(GREEN)
	PRINT COLORS	P.T 179C(RED)
	PRINT COLORS	P.T 1225C (YELLOW)
	SURFACE TREATMENT	SILICONE COATING

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1.2 - Picture (for reference only)

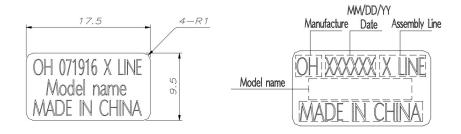


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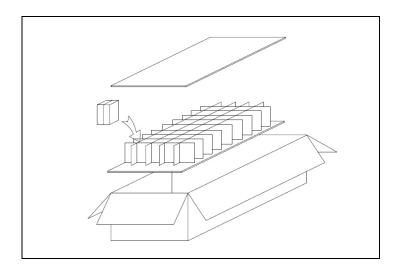
1.3 - Batch Number

Adhesive label is attached at the inside part of the battery cover



1.4 - Packing

1.4.1 - Packing Process



- PE bag dimensions : 83 x 286 mm (LDPE 0.05t)

- PE bag sealed with PASSED adhesive label

- Quantity Per Box: 140pcs

- Box dimensions : W 600 x D 400 x H 240 mm

1.4.2 - Pallet definition

- Pallet dimension : W 1200 x D 800 x H 170 mm

- Full pallet dimension : W 1200 x D 800 x H 1850 mm

- Quantity per pallet : 3,920pcs (4 boxes / layer - 7 layers)

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2 - Electrical Requirements

2.1 - Electrical Characteristic

Paran	neter	Condition	Spec	Unit
Frequenc	y Range	2.402 ~ 2.480		[GHz]
Chai	nnel	Bluetooth Low Energy	39	[Num]
RF Po	ower	Specification	-2	[dBm]
Test ch	annel	19		[Num]
	PAvg		0 <u>±</u> 5	[dBm]
RF Power	PMax		+5	[dBm]
	Pmin		-5	[dBm]
	∆f1 avg		225~275	[KHz]
	∆f2 avg	TC-3000	≥ 185	[KHz]
Modulation Characteristics	Δ f2/ Δ f1	(RF measuring instrument)	0.8	
	∆f2min		≥ 92.5	[KHz]
	∆f2rate	1 – –	≥ 99	[%]
	fTx-fn	1 – –	≤ 150	[KHz]
Carrier Frequency	∆f0-fn	1 – –	≤ 50	[KHz]
Offset and Drift	f1-f0]	≤ 20	[KHz]
	Δfn-f(n-5)]	≤ 20	[KHz]
Operating	y Voltage	RF (Bluetooth)	2.0~3.6	[V]
LVI Vo	oltage	Low Voltage Indicate	2.25 ± 0.2	[V]
Operating c	urrent (IR)	Power: 3V	≤40	[mA]
Operating curr	ent (RF KEY)		≤12	[mA]
Operating curre	ent (RF+Voice) Power: 3V		≤25	[mA]
Leakage	current	Non-directional distance	≤10	[<i>µ</i> A]
RF range ((distance)		≥10	[m]
ID D	ngo.	Direct	12 [m] 7 (±30°) [m]	
IR Ra	inge	Horizontal		
	300Hz		- 15 ∼ - 5	[dB]
VOICE	2KHz	Voice Inspection JIG	-21 ~ -2	[dB]
	3.8KHz		20 ~ 0	[dB]

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3 - Software Requirements

3.1 - Bluetooth 4.2 LE identification

a) Device Name: WOW Remote

b) Vender ID: 0x02AF

c) Product ID: 0x2037

3.2 - Advertising

a) RCU send the un-direct advertising data for 90sec in Pairing Mode.

- b) RCU send the direct advertising data for 1.28sec when RCU try re-connection. Then RCU send the un-direct advertising data containing RTK's magic code for STB wake-up for 10sec
- c) When RCU sends Undirected Advertising for Re-connection, it will prohibit connection with other STB using white list.

3.3 - Pairing mode

- a) At first time pairing or after Factory Reset, RCU works only in IR.
- b) Press [OK] and [HOME] keys for longer than 4 seconds. LED stays ON while pressing [OK] and [HOME] keys.
- c) After 4 seconds, the LED starts blinking so that to confirm the remote has entered into pairing mode.
- d) After RCU has entered pairing mode, RCU can send the IR signal of [Up], [Down], [Left], [Right], [OK], [Back], [Home] keys.
- e) If pairing is successfully made, the LED goes OFF and remote starts working in Bluetooth.
- f) If the user presses any key during pairing mode, the remote stops pairing and goes back to IR mode, excepted [Up], [Down], [Left], [Right], [OK], [Back], [Home] keys.
- g) If pairing is not successfully made for 90 seconds, the LED goes ON for 4 seconds and then goes OFF. The remote stops pairing and goes back to IR mode if first time pairing or after Factory Reset.
- h) If Pin or Key Missing, RCU send the un-direct advertising data for 90sec in Pairing Mode after disconnect.

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3.4 - Re-pairing mode

- a) Press [OK] and [HOME] keys for longer than 4 seconds. LED stays ON while pressing [OK] and [HOME] keys.
- b) After 4 seconds, the LED starts blinking so that to confirm the remote has entered into pairing mode.
- c) After RCU has entered pairing mode, RCU can send the IR signal of [Up], [Down], [Left], [Right], [OK], [Back], [Home] keys.
- d) If pairing is successfully made, the existing pairing table is deleted, the LED goes OFF and the remote works in Bluetooth with the new device.
- e) If the user presses any key during pairing mode, excepted [Up], [Down], [Left], [Right], [OK], [Back], [Home] keys, the remote stops pairing and the previous paired status is restored.
- f) If pairing with new device is not successfully made for 90 seconds, the LED goes ON for 4 seconds and then goes OFF. The previous paired status is restored.
- g) If Pin or Key Missing, RCU send the direct advertising data in Pairing Mode after disconnect.

3.5 - Factory Reset mode

- a) Press [GUIDE] and [0] keys for longer than 4 seconds. LED stays ON while pressing [GUIDE] and [0] keys.
- b) The remote blinks 3 times to confirm that it is deleting the existing pairing table.
- c) When Factory Reset is completed, LED goes OFF and the remote works in IR mode.

3.6 - IR backup in paired mode

- a) If, for any reason, the RF connexion is lost, the remote sends the IR code of the corresponding pressed key.
- b) The remote tries to reconnect for sending the RF code.

3.7 - Voice Search initiated by the remote

- a) For Voice function, it is recommended to be within 5 meters from the receiver.
- b) Distance between mouth and microphone should be within 40 cm (15~20cm recommended).

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c) Microphone key pressed and released, remote sends "key pressed event, key released

event" to the STB and the STB sends back the START command to the remote.

d) The LED starts blinking, the remote transmits the voice data for 10sec timeout duration.

e) After timeout duration, the remote stops transmitting the voice data and the LED is

turned off.

f) Or When the remote receives stop command from STB, remote will stop the voice

transmission and LED will turned off.

Note: if any key is pressed within the timeout duration, the remote stops transmitting the

voice data and activate the pressed key event.

3.8 - Voice Search initiated by the launcher

a) For Voice function, it is recommended to be within 5 meters from the receiver.

b) Distance between mouth and microphone should be within 40 cm (15~20cm

recommended)

c) User selects and validates the voice search on the launcher by using navigation and OK

keys.

d) STB sends the voice search START command to the remote.

e) The LED starts blinking, the remote transmits the voice data for 10sec timeout duration.

f) After timeout duration, the remote stops transmitting the voice data and the LED is

turned off.

g) Or When thre remote receives stop command from STB, remote will stop the voice

transmission and LED will turned off.

Note: if any key is pressed within the timeout duration, the remote stops transmitting the

voice data and activate the pressed key event.

3.9 – Setup for TV & Audio & Soundbar

a) As long as the RCU is paired to the STB, the RCU can then automatically be set up by

the STB for TV or Audio, Soundbar control.

b) The STB can set the RCU's IR using the command defined in Appendix 1.

c) When the setting is completed, the Volumem, Mute key and the Power key output the IR

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- signal according to the set value.
- d) If the RCU receives the "send keycode" command, it outputs the IR signal of the corresponding key. However, the RCU will not store the set value.
- e) The TV database uses the set number from 0001 to 1999.
- f) The Audio database uses the set number from 3001 to 4999
- g) The Soundbar database uses the set number from 6001 to 7999.

3.10 – Remove the TV & Audio & Soundbar

- a) Press [OK] and [V-] keys for longer than 4 seconds. LED stays ON while pressing [OK] and [V-] keys.
- b) After 4 seconds, LED will be blink 3 times.
- c) Press 01 to remove the TV setting. Or press 02 to remove the Audio & Soundbar setting.
- d) LED will be blink 3 times to confirm the remote has remove the setting.

3.11 - Couch mode

a) If a key or multiple keys are pressed continuously for more than 30s, the remote stops transmission (except pairing combination) in order to protect the battery discharge.

3.12 - OAD mode

a) OAD proceeds according to the Realtek specification.

3.13 - Key codes

- a) In Bluetooth mode, HID Profile is used.
- b) In IR Mode, NEC format is used
 - Structure of the NEC format: Custom1 Custom2 Data Inverse data For MUTE to be seen as 0x16-0x20-0x25. Another alternative is 0x1620-0x25

Custom1: 0x16 Custom2: 0x20

c) Code list is detailed in Table 1

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KEY LABEL CHART Key Name Event constant name Code (Data) Usage (Data) Page	HID Linux	ŀ	IR				
K1	Usage Key	Usage	Code	Event constant name	Key Name	.RT	KEY LABEL CHART
K2 Rewind KEYCODE_MEDIA_REWIND 0x51 0x0C	ID Code	Page	(Data)				
K3	0x0030	0x0C	0x21	KEYCODE_POWER	Power	K1	
K4	0x00B4 0x00A8	0x0C	0x51	KEYCODE_MEDIA_REWIND	Rewind	K2	
K4	0x00CD 0x00A4	0x0C	0x52	KEYCODE_MEDIA_PLAY_PAUSE	Play/Pause	К3	
K6	0x00B3 0x00D0	0x0C	0x53		Fast Forward	K4	
K6	0x0042	0x0C	0x15	KEYCODE_DPAD_UP	D-pad up	K5	
K2 K3 K4 K8 D-pad right KEYCODE_DPAD_RIGHT 0x18 0x0C	0x0044	0x0C	0x17	KEYCODE_DPAD_LEFT	D-pad left	K6	
K9	0x0041	0x0C	0x19	KEYCODE_DPAD_CENTER	D-pad center	K7	(K1)
K10 Back KEYCODE_BACK 0x48 0x0C	0x0045 0x0181	0x0C	0x18	KEYCODE_DPAD_RIGHT	D-pad right	K8	K2 K3 K4
K10	0x0043	0x0C	0x16	KEYCODE_DPAD_DOWN	D-pad down	K9	K5
K12	0x0224 0x009E	0x0C	0x48	KEYCODE_BACK	Back	K10	
K10 K11 K12 K14 Guide KEYCODE_VOLUME_UP 0x23 0x07 K14 Guide KEYCODE_GUIDE 0xC0 0x0C K15 Channel + KEYCODE_CHANNEL_UP 0x33 0x0C K16 Volume - KEYCODE_VOLUME_DOWN 0x24 0x07 K17 Google Mic KEYCODE_ASSIST 0x46 0x0C K18 Channel - KEYCODE_CHANNEL_DOWN 0x34 0x0C K19 Mute KEYCODE_VOLUME_MUTE 0x25 0x0C K20 NETFLIX KEYCODE_BUTTON_3 0x63 0x07 K21 RECORD KEYCODE_MEDIA_RECORD 0x54 0x0C K22 1 KEYCODE_1 0x01 0x07 K23 2 KEYCODE_2 0x02 0x07 K24 K25 K26 K27 K27 K28 K29 K30 K31 K32 K32 K33 K34 K34 K34 K34 K34 K32 K33 K34 K34 K44 K44	0x0223 0x00AC	0x0C	0x47	KEYCODE_HOME	Home	K11	K6 K7 K8
K13 Volume + KEYCODE_VOLUME_UP 0x23 0x07	0x0040 0x008B	0x0C	0x67	KEYCODE_MENU	LIST	K12	
K13 K14 K15 Channel + KEYCODE_CHANNEL_UP 0x33 0x0C K16 Volume - KEYCODE_VOLUME_DOWN 0x24 0x07 K17 Google Mic KEYCODE_ASSIST 0x46 0x0C K18 Channel - KEYCODE_CHANNEL_DOWN 0x34 0x0C K19 Mute KEYCODE_VOLUME_MUTE 0x25 0x0C K22 K23 K24 K20 NETFLIX KEYCODE_BUTTON_3 0x63 0x07 K25 K26 K27 K21 RECORD KEYCODE_MEDIA_RECORD 0x54 0x0C K28 K29 K30 K22 1 KEYCODE_1 0x01 0x07 K21 RECORD KEYCODE_1 0x01 0x07 K22 LX3 LX4 K24 K25 K26 K27 K27 K29 K30 KEYCODE_1 0x01 0x07	0x0080 0x0073	0x07	0x23	KEYCODE_VOLUME_UP	Volume +	K13	К9
K13 K14 K15 K16 Volume - KEYCODE_VOLUME_DOWN 0x24 0x07 K16 K17 Google Mic KEYCODE_ASSIST 0x46 0x0C K19 K18 Channel - KEYCODE_CHANNEL_DOWN 0x34 0x0C K19 Mute KEYCODE_VOLUME_MUTE 0x25 0x0C K20 NETFLIX KEYCODE_BUTTON_3 0x63 0x07 K25 K26 K27 K21 RECORD KEYCODE_MEDIA_RECORD 0x54 0x0C K28 K29 K30 K22 1 KEYCODE_1 0x01 0x07 K23 2 KEYCODE_2 0x02 0x07	0x008D 0x016A	0x0C	0xC0	KEYCODE_GUIDE	Guide	K14	K10 K11 K12
K16 Volume - KEYCODE_VOLUME_DOWN 0x24 0x07	0x009C 0x0192	0x0C	0x33	KEYCODE_CHANNEL_UP	Channel +	K15	K13 K15
K16 K17 K18 K17 Google Mic KEYCODE_ASSIST 0x46 0x0C K19 M(k20) K21 K18 Channel - KEYCODE_CHANNEL_DOWN 0x34 0x0C K19 Mute KEYCODE_VOLUME_MUTE 0x25 0x0C K20 NETFLIX KEYCODE_BUTTON_3 0x63 0x07 K25 K26 K27 K21 RECORD KEYCODE_MEDIA_RECORD 0x54 0x0C K28 K29 K30 K22 1 KEYCODE_1 0x01 0x07 K23 2 KEYCODE_2 0x02 0x07	0x0081 0x0072	0x07	0x24	KEYCODE_VOLUME_DOWN	Volume -	K16	K14
K19 NK20 X K21 K19 Mute KEYCODE_VOLUME_MUTE 0x25 0x0C K22 K23 K24 K20 NETFLIX KEYCODE_BUTTON_3 0x63 0x07 K25 K26 K27 K21 RECORD KEYCODE_MEDIA_RECORD 0x54 0x0C K28 K29 K30 K22 1 KEYCODE_1 0x01 0x07 K23 2 KEYCODE_2 0x02 0x07	0x0221 0x00D9	0x0C	0x46	KEYCODE_ASSIST	Google Mic	K17	
K22 K23 K24 K19 Mute KEYCODE_VOLUME_MUTE 0x25 0x0C K20 NETFLIX KEYCODE_BUTTON_3 0x63 0x07 K21 RECORD KEYCODE_MEDIA_RECORD 0x54 0x0C K22 1 KEYCODE_1 0x01 0x07 K23 2 KEYCODE_2 0x02 0x07	0x009D 0x0193	0x0C	0x34	KEYCODE_CHANNEL_DOWN	Channel -	K18	Wio Winow Was
K25 K26 K27 K21 RECORD KEYCODE_MEDIA_RECORD 0x04 0x0C K28 K29 K30 K22 1 KEYCODE_1 0x01 0x07 K23 2 KEYCODE_2 0x02 0x07	0x00E2 0x0071	0x0C	0x25	KEYCODE_VOLUME_MUTE	Mute	K19	KI9 MK20 X K21
K28 K29 K30 K22 1 KEYCODE_1 0x01 0x07 K23 2 KEYCODE_2 0x02 0x07	0x006C 0x00BB	0x07	0x63	KEYCODE_BUTTON_3	NETFLIX	K20	K22 K23 K24
K28 K29 K30	0x00B2 0x00A7	0x0C	0x54	KEYCODE_MEDIA_RECORD	RECORD	K21	K25 K26 K27
K23 2 KEYCODE_2 0x02 0x07	0x001E 0x0002	0x07	0x01	KEYCODE_1	1	K22	K28 K29 K30
K31 K32	0x001F 0x0003	0x07	0x02	KEYCODE_2	2	K23	
K24 3 KEYCODE_3 0x03 0x07	0x0020 0x0004	0x07	0x03	KEYCODE_3	3	K24	K31 K32
WOW! K25 4 KEYCODE_4 0x04 0x07	0x0021 0x0005	0x07	0x04	KEYCODE_4	4	K25	WOW!
K26 5 KEYCODE_5 0x05 0x07	0x0022 0x0006	0x07	0x05	KEYCODE_5	5	K26	
K27 6 KEYCODE_6 0x06 0x07	0x0023 0x0007	0x07	0x06	KEYCODE_6	6	K27	
K28 7 KEYCODE_7 0x07 0x07	0x0024 0x0008	0x07	0x07	KEYCODE_7	7	K28	
K29 8 KEYCODE_8 0x08 0x07	0x0025 0x0009	0x07	0x08	KEYCODE_8	8	K29	
K30 9 KEYCODE_9 0x09 0x07	0x0026 0x000A	0x07	0x09	KEYCODE_9	9	K30	
K31 0 KEYCODE_0 0x0A 0x07	0x0027 0x000B	0x07	0x0A	KEYCODE_0	0	K31	
K32 LAST KEYCODE_LAST_CHANNEL 0x83 0x0C	0x0083 0x0195	0x0C	0x83	KEYCODE_LAST_CHANNEL	LAST	K32	

Table 1: Code list

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3.14 - Battery level

- a) RCU sends the information for battery level using Bluetooth battery service.
- b) Level of LVD is $2.25V \pm 0.2V$.
- c) If the battery voltage as reached the LVD value, RCU cannot enter the pairing mode.
- d) If the battery voltage is under 2.0V, RCU does not operate.
- e) When the battery voltage is 2.1V or more, the RCU operates again.

3.15 - Bug Report

- a) Press the [BACK] + [OK] key for the stb bug report function.
- b) In IR mode, the value of 0x96 is output.
- c) In RF mode, [Back] press event and [OK] press event is output.

4 - FCC Conformity

Assessment of compliance of the product to the requirements relating to Electromagnetic Compatibility is based on the following standards:

-. FCC Part 15 subpart C 15.247

Statement

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.

Caution

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Note: The manufacturer is not responsible for any Radio or TV interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. End users must follow the specific operating instructions for satisfying RF exposure compliance.

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