Product Name	Security Level
HY516C237D0615	Top secret
Product version	
V0.1	

HY516C237D0615

（Huayun-TLSR8275）Specification

Prepared by:	Kehwin	Date:	2020. 10.26
Reviewed by:		Date:	
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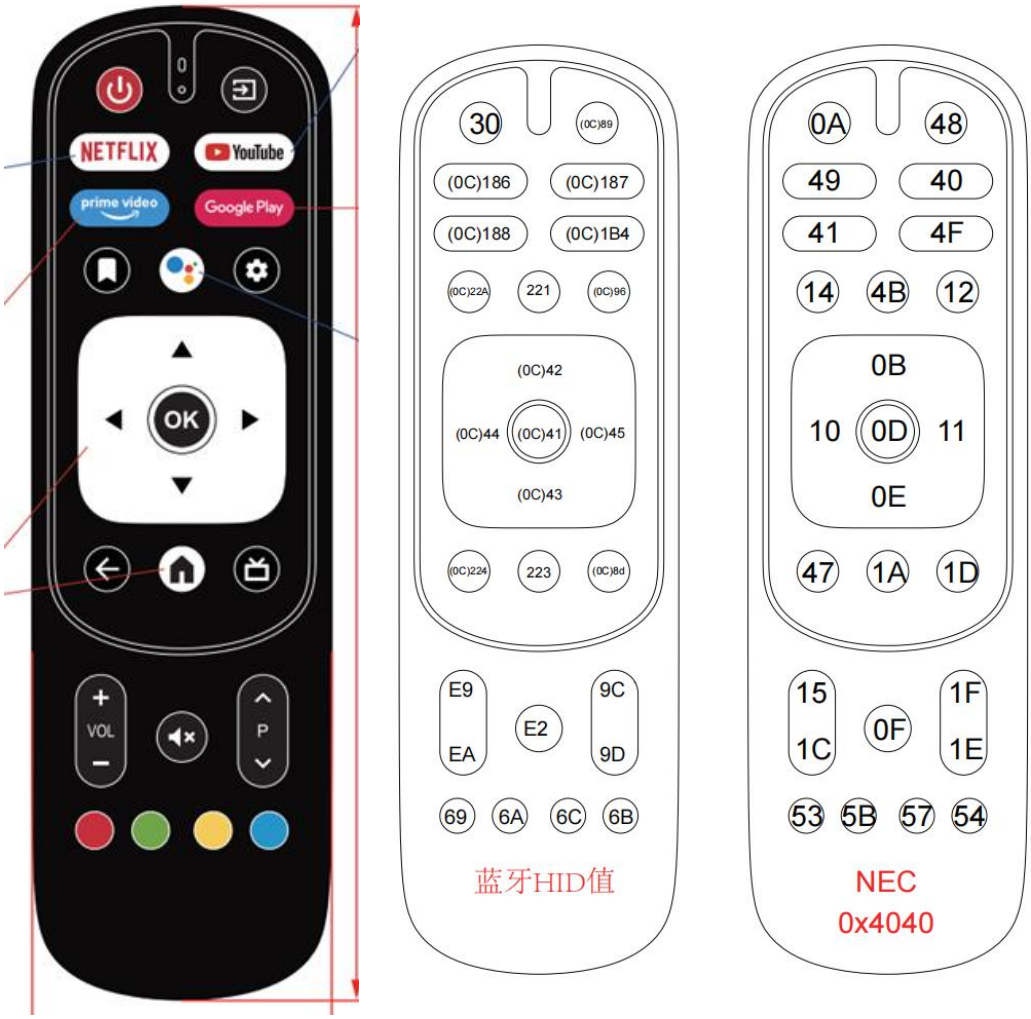
Approved by:		Date:	

Revision History

Date	Version	Description	Person in charge
20220623	V0.1	Initial Version	

Note：Infrared emitter need to use SY-R506IR5-14（5MM 940 emitter 29-002-090F 14mil），half angle 45°， full angle 90°

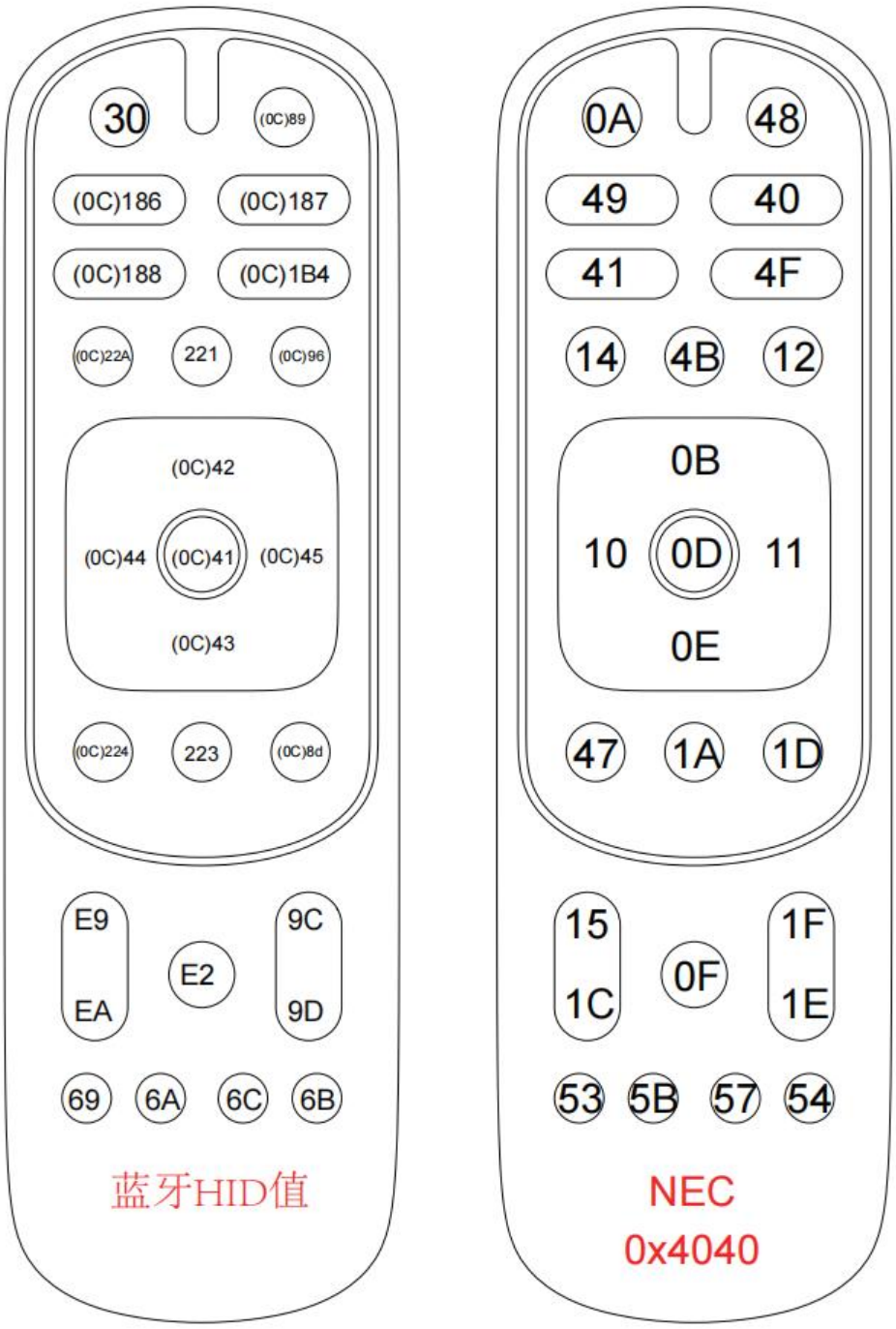
1 Overall shape



Customer code：220038
Equipment name: RC-28
PID：0xc080　VID：0x1d5a
Basic functions: key, voice, infrared, Bluetooth
Software version name：HY516C237D0615_TLSR8275_220038（Internal）
Remote control type：RemoteControl

2 Key function definition and key value

1. Bluetooth if there is a link, infrared if there is no link。
2. The connection process should also ensure infrared emission
3. All Bluetooth code values are 0x0C page



In infrared mode: "OK + return" sending code: 0x62

In Bluetooth mode: "OK + return" send code: (0x0c) 0xEC

（Note that the combination keys are handled according to the BT06D method and should

be as perfect as possible)

3.Make a pair

Step	Operation
Paired broadcast transmission	Press the "back" and "volume -" keys at the same time. The red indicator light flashes once (250ms on and 250ms off) and then goes out. Three seconds later, the red indicator light flashes slowly (250ms on and 250ms off). The remote control enters the broadcast scanning mode (you can release the key after entering)
Make a pair	After the host retrieves and detects the device with the corresponding device name, click to pair; The red light of the remote controller flashes rapidly during the pairing process (300ms on and 300ms off)
Pairing result	1: The pairing is successful. The red light stays on for 3 seconds and then goes out 2: The pairing fails within 30s after timeout, and the red light goes out to exit the pairing broadcast
According to specific project specifications	1: It is also allowed to re-enter the pairing mode if there is a link 2: After pressing the pairing combination key to pair, you must release both pairing combination keys and press them again at the same time to enter pairing mode again
Remarks	1: If it is the pairing mode entered by the pairing combination key, infrared learning and some switching combination keys are prohibited

4 Voice

1	Google ATV voice 1.0: 1: It is developed and designed according to Google ATV Voice 1.0 protocol, without driving 2: Voice on timeout, automatic off time is 15 seconds Sleep: sleep current is less than 3uA, sleep after 1h when Bluetooth is connected

5 OTA

*Support OTA upgrade function, the remote control function is invalid during upgrade

*The firmware of the remote control can support the online upgrade function. The firmware can be downloaded to the remote control depending on the Bluetooth function of the

HOST terminal

*In the process of OTA upgrading, the red light blinks when breathing (if it is not easy to breathe, we will blink slowly for 300ms, turn on for 300ms and turn off for 300ms)

7.Low power process

Status	Mode
No link status	1: If there is pairing information, press the key to send the code for 5s, and then the broadcast will be sent back to sleep. If the connection is successful, the indicator will flash for 3 times (150ms on and 150ms off) 2: If there is pairing information, press the "power" key and the "pairing combination key" to not send back the connected broadcast. Here, it should be noted that if the pairing combination key is released by a single press, the connected broadcast will be sent back 3: There is no pairing information. Press the key to send infrared, and then go to sleep
Link status	1: Press the key to enter the standby mode directly after sending the code (keep connected); After 1h of no key operation, sleep and chain break can be woken up by pressing the key
Voice on	Refer to the voice part description
Power on	1: No pairing information, no operation for 3 seconds after power on 2: There is pairing information, no operation, and it will enter sleep after sending a 3-second callback broadcast. If the callback is connected, it will switch to the linked state

8. Basic Information

Input Voltage:	3.0V
Input current:	30mA
Frequency:	2.402MHZ~2480MHZ
Operating Temperature :	-25℃~70℃
Software Version:	V1.0.1
Peak antenna gain:	0db
Hardware Version:	H1.0.1

9.Power management

*Use 2pcs No.7 dry batteries for power supply

*Low power detection and prompt

1) Vbat<=2.4V, Remote control is in low power state

2) Vbat<2.0V, The remote control is in a serious power shortage state and stops working

* Support for Battery services

Voltage	Percentage
3.3V	100%
3.1V	97%
3.0V	95%
...	...
2.35V	15%

10：Stuck key function

Press the key for 30s, and the remote control will enter the sleep state. The IR/BT mode needs to be synchronized

Stuck key status, function recovery is required after all keys are released

11.Indicator Description

No link	*The key does not light up
Linked	*The key does not light up
Pairing	Refer to corresponding functions
Voice	Indicator light does not work
Low electricity	The key red light flashes slowly for 3 seconds (500ms on and 500ms off), and the key value is sent normally
Serious power shortage	The remote control stops working and does not prompt with the indicator light
Successful reconnection	The indicator flashes 3 times (150ms on and 150ms off)

12.Production related tests

General (required)	
Remote control single carrier	Press "  " for a long time, and the remote control will enter the single carrier mode. The transmission frequency is 2440MHz, the transmission time is 20 seconds, and the power is the single carrier with the maximum power of the chip. Release "Volume -" and exit the single carrier mode.
Remote control power consumption test	No operation for 3 seconds after power on
Complete machine test	Complete machine test through upper computer

FCC

FCC

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.

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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment