

General Technical Description:

The Equipment Under Test (EUT) is the Internet Music System. The EUT contains two portions: The Tablet portion that using Android Operating System and the Main Unit portion. These two portions are as a whole product unit for sale that cannot be separated by end-user as declared by applicant.

The Tablet portion equipped with a 7-inch LCD display (with touch screen), USB, SD, HDMI interface and audio line output. The Tablet contains a WiFi module and a Bluetooth module. The WiFi module is complying with IEEE 802.11b/g/n(HT20)/n(HT40) standards that operating in 2.4GHz ISM frequency band (2400MHz – 2483.5MHz), while the Bluetooth module is operating in the frequency range from 2402MHz to 2480MHz (79 channels with 1MHz channel spacing). The Tablet is powered by a 5VDC output from the Main Unit. The Main Unit can accept 100-120VAC only. The Bluetooth module of the Tablet is using non-adaptive frequency hopping as declared by the applicant. The USB interface of the Tablet contains PC Connectivity function.

The Main Unit portion of the Internet Music System acts as the undetachable docking base of the Tablet with audio amplification. The Main Unit can accept audio input sources such as 3.5mm phone-jack line-in, FM radio, CD, audio line output from Tablet (Internet) and wireless Bluetooth devices. The Bluetooth module in the Main Unit is operating in the frequency range from 2402MHz to 2480MHz (79 channels with 1MHz channel spacing). The audio signal is amplified and fed to headphone and the separate passive stereo loudspeakers. The Main Unit can accept 100-120VAC only. The Bluetooth module of the Main Unit is using non-adaptive frequency hopping as declared by the applicant.

The Model: RCS13101E is the same as the Model: ACS3101E in hardware aspect. The difference in model number and brand name serves as marketing strategy.

Antenna Type : Internal, Integral

Main Unit Bluetooth WLIS04

For the Main Unit Bluetooth WLIS04:

Antenna Type: Internal, integral

Antenna Gain: 0dBi

Nominal rated field strength: 98.8dB μ V/m at 3m

Maximum allowed field strength of production tolerance: +/- 3dB

Tablet Bluetooth RDA5876

For the Tablet Bluetooth RDA5876:

Antenna Type: Internal, integral

Antenna Gain: 0dBi

Nominal rated field strength: 100.8dB μ V/m at 3m

Maximum allowed field strength of production tolerance: +/- 3dB

Tablet WiFi RTL8188ETV

The Tablet WiFi modules was tested in according with the following power output and in actual application the below limit shall not be exceeded.

Operating Mode	Nominal Radiated Field Strength	Production Tolerance
802.11b	85.6dB μ V/m at 3m	$\pm$ 3dB
802.11g	79.6dB μ V/m at 3m	$\pm$ 3dB
802.11n (HT20)	79.4dB μ V/m at 3m	$\pm$ 3dB
802.11n (HT40)	78.6dB μ V/m at 3m	$\pm$ 3dB

An internal, integral antenna has been used.

Antenna Gain: 0dBi

Channel Occupation of RTL8188ETV WiFi Module in 802.11b/g/n standard

Channel (b/g/n20) Frequency (MHz)

1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462

n20 = 802.11n HT20 (20MHz Bandwidth)

Channel (n40) Frequency (MHz)

1	N/A
2	N/A
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	N/A
11	N/A

n40 = 802.11n HT40 (40MHz Bandwidth)

802.11n HT40 (40MHz Bandwidth)

Channel Frequency Table of Bluetooth Module (WLIS04 and RDA5876)

CH. NO.	FRE.	Hex Value		CH. NO.	FRE.	Hex Value		CH. NO.	FRE.	Hex Value		CH. NO.	FRE.	Hex Value
CH0	2402MHz	0		CH26	2428MHz	1A		CH52	2454MHz	34		CH78	2480MHz	4E
CH1	2403MHz	1		CH27	2429MHz	1B		CH53	2455MHz	35				
CH2	2404MHz	2		CH28	2430MHz	1C		CH54	2456MHz	36				
CH3	2405MHz	3		CH29	2431MHz	1D		CH55	2457MHz	37				
CH4	2406MHz	4		CH30	2432MHz	1E		CH56	2458MHz	38				
CH5	2407MHz	5		CH31	2433MHz	1F		CH57	2459MHz	39				
CH6	2408MHz	6		CH32	2434MHz	20		CH58	2460MHz	3A				
CH7	2409MHz	7		CH33	2435MHz	21		CH59	2461MHz	3B				
CH8	2410MHz	8		CH34	2436MHz	22		CH60	2462MHz	3C				
CH9	2411MHz	9		CH35	2437MHz	23		CH61	2463MHz	3D				
CH10	2412MHz	A		CH36	2438MHz	24		CH62	2464MHz	3E				
CH11	2413MHz	B		CH37	2439MHz	25		CH63	2465MHz	3F				
CH12	2414MHz	C		CH38	2440MHz	26		CH64	2466MHz	40				
CH13	2415MHz	D		CH39	2441MHz	27		CH65	2467MHz	41				
CH14	2416MHz	E		CH40	2442MHz	28		CH66	2468MHz	42				
CH15	2417MHz	F		CH41	2443MHz	29		CH67	2469MHz	43				
CH16	2418MHz	10		CH42	2444MHz	2A		CH68	2470MHz	44				
CH17	2419MHz	11		CH43	2445MHz	2B		CH69	2471MHz	45				
CH18	2420MHz	12		CH44	2446MHz	2C		CH70	2472MHz	46				
CH19	2421MHz	13		CH45	2447MHz	2D		CH71	2473MHz	47				
CH20	2422MHz	14		CH46	2448MHz	2E		CH72	2474MHz	48				
CH21	2423MHz	15		CH47	2449MHz	2F		CH73	2475MHz	49				
CH22	2424MHz	16		CH48	2450MHz	30		CH74	2476MHz	4A				
CH23	2425MHz	17		CH49	2451MHz	31		CH75	2477MHz	4B				
CH24	2426MHz	18		CH50	2452MHz	32		CH76	2478MHz	4C				
CH25	2427MHz	19		CH51	2453MHz	33		CH77	2479MHz	4D				

Detail Description of Critical Components

1. Tablet WiFi module (RTL8188ETV)

RTL8188ETV is a WLAN USB module which fully supports the features and functional compliance of IEEE 802.11b/g/n(HT20)/n(HT40) standards. This module operates in 2.4GHz frequency bands.

U18 (RTL8188ETV module)

- 1) U6 (RTL8188ETV) is a single-chip IEEE802.11b/g/n 1T1R WLAN controller with PCI (USB) interface.
- 2) XTAL (40MHz) crystal provides clock for U6 (RTL8188ETV).
- 3) U14 is 3.3V LDO for U6 (RTL8188ETV).

2. Tablet Bluetooth (RDA5876)

- 1) U75 (RDA5876A) is single chip Bluetooth radio (FM radio not use).
- 2) Y8 (26MHz) crystal provides clock for U75 (RDA5876A).

3. Main Unit Bluetooth module (WLIS04)

- 1) U1 (IS1681S) is 2.4GHz Bluetooth radio core.
- 2) X1 (16MHz crystal) provides system clock for U1
- 3) U2 (24C32) is EEPROM for parameter setup
- 4) L1, LC1, C2, C5 are antenna matching network

4. Main Unit

- 1) CD player consists of IC7 (SC9460), IC11 (SA9258), IC13 (SA9614), X3 (8.4672MHz crystal), CD loader and optical module.
- 2) FM tuner consists of digital FM radio IC101 (SI4702) and X101 (32.768kHz crystal).
- 3) Audio amplification portion consists of stereo class D power amplifier IC601 (TDA7492), headphone op-amp IC2 (4558) and analog audio Processor U601 (TM2314).
- 4) System control portion consists of MCU IC3 (NF2532) and Touch key Control IC1 (SJT6912).

5. Tablet

- 1) U11 (TPS659102) is power management unit for Tablet.
- 2) U26 (IA5056) is 3.7V Li-ion battery charging controller.
- 3) U1 (RK3168) is dual-core ARM Cortex-A9 processor.
- 4) U2, U3, U4, U8 are 4X 512MB DDR3 RAM. U6 is 4G NAND flash.
- 5) U15 (RK610) is audio codec and LCD/HDMI processor.
- 6) U45 (GSL1680) is touch panel processor.