

# ONYX STUDIO



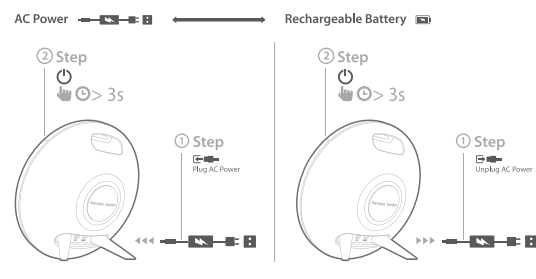
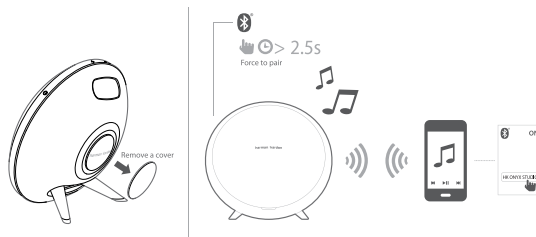
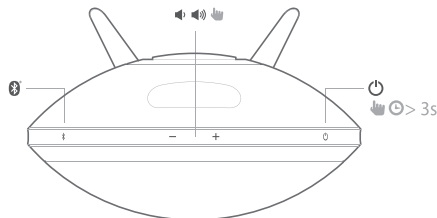
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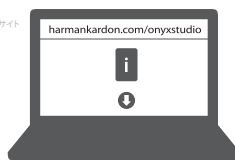


# ONYX STUDIO

## ONYX STUDIO



Full owners manual  
Proprietarilor completele manuale  
Proprietari manuale completo  
Manual de usuario  
Austufliche Anleitung  
Полное руководство  
詳細なオーナーマニュアルはこちらのサイト  
をご覧ください  
Poniíž pøehleznÙ manual



## ONYX STUDIO

### Quick Start Guide Guide de démarrage rapide

- EN**
- No. of channels: 4
  - Transducers: 2 x 3" woofers, 2 x 1" tweeters, 2 x passive radiators
  - Beamification: 4 x 15W
  - Maximum SPL: 95dB @ 1m
  - Power requirement: 100~240V AC, 50/60Hz
  - Power adaptor: 19V, 2.0A
  - Built-in battery: 3.7V, 2600mAh, Cylindrical Lithium Ion Rechargeable Battery
  - Power consumption: 38W maximum < 1W standby
  - Speaker Impedance: 4 ohm per speaker
  - Frequency response: 60Hz ~ 20kHz
  - Frequency range: 2402MHz ~ 2480MHz
  - Transmitter power: < 4dBm
  - Modulation: GFSK / FSK / 2FSK / 2DPSK
  - Bluetooth: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
  - Dimensions (Dia x H x W): 280mm x 161mm x 260mm

- FR**
- Nbre de canaux: 4
  - Transducteurs: 2 x haut-parleurs graves 7", 2 x haut-parleurs aigus 1", 2 x radiateurs passifs
  - Beamification: 4 x 15W
  - Pression sonore maximale: 95 dB @ 1 m
  - Alimentation électrique requise: 100V~ 240V CA, 50/60 Hz
  - Adaptateur d'alimentation: 19V, 2.0A
  - Batterie intégrée: 3,7V, 2600mAh lithium
  - Consommation électrique: 38W maximum et 1W standby
  - Impédance des haut-parleurs: 4 ohms par haut-parleur
  - Réponse en fréquences: 60 Hz à 20 kHz
  - Gamme de fréquences: 2402 MHz à 2480 MHz
  - Puissance du transmetteur: < 4 dBm
  - Modulation: GFSK / FSK / 2FSK / 2DPSK
  - Sans fil: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
  - Dimensions (Dia x P x H): 280mm x 161mm x 260mm

- ES**
- Nº de canales: 4
  - Transductores: 2 woofers de 7", 2 tweeters de 1", 2 radiadores pasivos
  - Beamificación: 4 x 15W
  - SPL máximo: 95 dB @ 1 m
  - Requisito de alimentación: 100V ~ 240V AC, 50/60Hz
  - Adaptador de alimentación: 19V, 2.0A
  - Batería integrada: litio 3.7V, 2600mAh
  - Consumo de energía: 38W máximo < 1W en espera
  - Impedancia del altavoz: 4 ohms por altavoz
  - Rango de frecuencias: 60 Hz - 20 kHz
  - Rango de frecuencias: 2402 MHz - 2480 MHz
  - Potencia del transmisor: < 4 dBm
  - Modulación: GFSK / FSK / 2FSK / 2DPSK
  - Bluetooth: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
  - Dimensiones (Alt x Ancho x Profundidad): 280mm x 161mm x 260mm

- PT**
- Nº de canais: 4
  - Transdutores: 2 x woofers de 7", 2 x tweeters de 1", 2 x radiadores passivos
  - Beamificação: 4 x 15W
  - Nível máximo de pressão sonora: 95 dB @ 1 m
  - Requisito de alimentação: 100~240V CA, 50/60 Hz
  - Transformador: 19V, 2.0A
  - Bateria incorporada: litio 3.7V, 2600mAh
  - Consumo de energia: 38W no máximo, < 1 W em espera
  - Impedância dos altavoz: 4 ohms por altavoz
  - Resposta em frequências: 60 Hz - 20 kHz
  - Gama de frequências: 2402 MHz - 2480 MHz
  - Potência do transmissor: < 4 dBm
  - Modulação: GFSK / FSK / 2FSK / 2DPSK
  - Sem fios: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
  - Dimensões (Díam x P x H): 280mm x 161mm x 260mm

### DE

- Anzahl von Kanälen: 4
- Signalumwandler: 2 x 3" Woofer, 2 x 1/4" Tweeter, 2 x passive Radiatoren, 2 x Passivmembranen
- Bekommt Leistung: 4 x 15 W
- Maximale SPL: 95 dB auf 1 m
- Stromversorgung: 100 ~ 240 V AC, 50/60 Hz
- Stromumwandlung: 19V, 2.0A
- Eingebaute Batterie: 3.7V, 2600mAh Lithium
- Stromverbrauch: 38W Maximum <1 W standby
- Lautsprecherimpedanz: 4 Ohm per Lautsprecher
- Frequenzbereich: 60 Hz ~ 20 kHz
- Frequenzbereich: 2402 MHz ~ 2480 MHz
- Sendeleistung: < 4 dBm
- Modultyp: GFSK / FSK / AQPSK / DPSK
- Drahtlos: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Dimensionen (Durchmesser x B x H): 280mm x 161mm x 260mm

### IT

- N. di canali: 4
- Trasduttori: 2 x woofer da 3" 2 tweeter da 1/4", 2 radiatori passivi
- Potenza: 4 x 15 W
- Max SPL: 95 dB a 1 m
- Requisito di corrente: 100 ~ 240 V CA, 50/60 Hz
- Adattatore di potenza: 19V, 2.0A
- Batteria integrata: 3.7V, 2600mAh Li-Ion
- Consumo di corrente: 38W massimo < 1W standby
- Impedenza dei diffusori: 4 ohm per diffusore
- Risposta di frequenza: 60 Hz ~ 20 kHz
- Intervallo di frequenza: 2402 MHz ~ 2480 MHz
- Potenza trasmessa: < 4 dBm
- Modulazione: GFSK / FSK / AQPSK / DPSK
- Wireless: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Dimensioni (diam. x largh. x alt.): 280mm x 161mm x 260mm

### NL

- Aantal kanalen: 4
- Transducers: 2 x 3" woofers, 2 x 1/4" tweeters, 2 x passive radiators
- Dubbele verspreiding: 4 x 15W
- Maximale SPL: 95dB @ 1m
- Weetst vermogen: 100 ~ 240V AC, 50/60Hz
- Adapter: 19V, 2.0A
- Ingebouwde batterij: 3.7V, 2600mAh Lithium
- Stroomverbruik: 38W maximaal <1 W standby
- Loadspeakerimpedantie: 4 Ohm per luidspreker
- Frequentiebereik: 60 Hz ~ 20 kHz
- Frequentiebereik: 2402 MHz ~ 2480 MHz
- Zendervermogen: < 4 dBm
- Modulaie: GFSK / FSK / AQPSK / DPSK
- Draadloos: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Afmetingen (Diameter x B x H): 280mm x 161mm x 260mm

### NO

- Antall kanaler: 4
- Transducere: 2 x 3" subwoofere, 2 x 1/4" diskantortweeter, 2 x passive radiatore
- Bekomstleistung: 4 x 15 W
- Maksimal SPL: 95 dB @ 1 m
- Strømkrav: 100 ~ 240 V AC, 50/60 Hz
- Strømadapter: 19V, 2.0A
- Innebygget batteri: 3.7V, 2600mAh Lithium
- Strømforbruk: 38W Maximum <1 W standby
- Hørløstimpedans: 4 Ohm per høyttaler
- Frekvensrespons: 60 Hz ~ 20 kHz
- Frekvensområde: 2402 MHz ~ 2480 MHz
- Sendeførløst: < 4 dBm
- Modultyp: GFSK / FSK / AQPSK / DPSK
- Trådløs: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Dimensjoner (D x B x H): 280mm x 161mm x 260mm

### FI

- Kanalien määrä: 4
- Muuntimet: 2 x 3" wooferia, 2 x 1/4" diskantitweeteriä, 2 x passiivisia säätösuuria
- Kaksisuuntainen: 4 x 15 W
- Maksimi SPL: 95dB @ 1m
- Tehovaatimus: 100 ~ 240 V AC, 50/60 Hz
- Virtalähde: 19V, 2.0A
- Sisällytetty akkukäyttö: 3.7V, 2600mAh Lithium
- Vastusluokka: 38W maximum <1 W standby
- Käyttösuojat: 4 ohm kullakin puolelta
- Taajuusalue: 60 Hz ~ 20 kHz
- Taajuusalue: 2402 MHz ~ 2480 MHz
- Lähettämättö: < 4 dBm
- Moduulit: GFSK / FSK / AQPSK / DPSK
- Langaton: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Mitat (D x B x H): 280mm x 161mm x 260mm

### RU

- Канальность: 4
- Преобразователи: 2 x 3-дюймовых wooferов, 2 x 1/4-дюймовых высокочастотных драйвера, 2 x пассивные излучателя
- Двойное усиление: 4 x 15 Вт
- Макс. уровень звукового давления: 95 дБ на 1 м
- Требования по энергопотреблению: 100 В ~ 240 В переменного тока, 50/60 Гц
- Адаптер питания: 19 В, 2.0 А
- Встроенная аккумулятор: 3.7 В, 2600 мАч, литиевый
- Потребляемая мощность: максимум 38 Вт, < 1 Вт в режиме ожидания
- Импеданс динамика: 4 Ом на динамик
- Частотная характеристика: 60 Гц - 20 кГц
- Диапазон частот: 2402 МГц - 2480 МГц
- Максимальная мощность изм.: < 4 дБм
- Модуль: GFSK / FSK / AQPSK / DPSK
- Структура файла модуля: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Беспроводной интерфейс: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Размеры (Диам. x Ш x В): 280 мм x 161 мм x 260 мм

### SV

- Antal kanaler: 4
- Omvandare: 2 x 3" woofer, 2 x 1/4" tweeter, 2 x passiva element
- Dubbelriktad: 4 x 15 W
- Max SPL: 95 dB @ 1 m
- Strömkrav: 100 ~ 240 V AC, 50/60 Hz
- Strömeffekt: 19V, 2.0A
- Inbyggd batteri: 3.7V, 2600mAh Lithium
- Strömeförbruk: 38W max <1 W standby
- Hörlöstitimpedans: 4 ohm/på hörlöret
- Frekvensomfång: 60 Hz ~ 20 kHz
- Frekvensområde: 2402 MHz ~ 2480 MHz
- Sändareffekt: < 4 dBm
- Modultyp: GFSK / FSK / AQPSK / DPSK
- Trådlös: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Dimensioner (Diam x B x H): 280mm x 161mm x 260mm

### DA

- Antal kanaler: 4
- Transducere: 2 x 3" subwoofere, 2 x 1/4" tweeter, 2 x passive radiatore
- Bekomstleistung: 4 x 15 W
- Maks. SPL: 95 dB ved 1 m
- Strømkrav: 100 ~ 240 V AC, 50/60 Hz
- Strømadapter: 19V, 2.0A
- Inbygget batteri: 3.7V, 2600mAh Lithium
- Strømforbrug: 38W maks. <1 W standby
- Hørløstimpedans: 4 ohm pr. højttaler
- Frekvensområde: 60 Hz ~ 20 kHz
- Frekvensområde: 2402 MHz ~ 2480 MHz
- Transmittereffekt: < 4 dBm
- Modultyp: GFSK / FSK / AQPSK / DPSK
- Trådløs: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Mål: D x B x H: 280mm x 161mm x 260mm

### JP

- チャンネル数: 4
- 両方向ステレオサウンド: フォーインチ x 2, ツーテーター x 1/4 インチ x 2, バックラジエーター x 2
- 双方向増強: 4 x 15 W
- 最大音圧レベル: 1メートル距離で 95dB
- 消費電力: 変換: 100 ~ 240V AC, 50/60 Hz
- 電源アダプター: 19V, 2.0A
- 内蔵バッテリー: 3.7V, 2600mAh リチウム
- 再生周波数帯域: 60 Hz ~ 20 kHz
- 再生周波数帯域: 2402 MHz ~ 2480 MHz
- トランスミッター出力: 最大 4dBm
- 変調: GFSK / FSK / AQPSK / DPSK
- 無線: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- サイズ (直径 x 高さ x 長さ): 280mm x 161mm x 260mm

### KO

- 채널 번호: 4
- 변형기: 2 x 3" 우퍼, 2 x 1/4" 트위터, 2 x 패시브 라디에이터
- 배향: 양방향: 4 x 15 W
- 최대 SPL: 95 dB @ 1 m
- 총 전력: 100 ~ 240 V AC, 50/60 Hz
- 전원 어댑터: 19V, 2.0A
- 내장 배터리: 3.7V, 2600mAh 리튬
- 전력 소비량: 38W 최대 <1 W 대기
- 스피커 임피던스: 스피커당 4ohm
- 주파수 범위: 60 Hz ~ 20 kHz
- 주파수 범위: 2402 MHz ~ 2480 MHz
- 송신기 출력: < 4dBm
- 변조: GFSK / FSK / AQPSK / DPSK
- 무선: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- 크기 (직경 x 높이 x 길이): 280mm x 161mm x 260mm

### CHS

- 声道数量: 4
- 扬声器: 2个3" 低音扬声器, 2个1/4" 高音扬声器, 2个无源辐射器
- 功放: 4 x 15W
- 最大SPL: 95 dB @ 1m
- 供电要求: 100 ~ 240 V AC, 50/60 Hz
- 电源适配器: 19 V, 2.0 A
- 内置电池: 3.7 V ~ 2600mAh 锂电池
- 功耗: 最大功耗 38W, 待机功率 < 1 W
- 频率范围: 每个声道 60 Hz ~ 20 kHz
- 频率范围: 60 Hz ~ 20 kHz
- 频率范围: 2402 MHz ~ 2480 MHz
- 发射器功率: < 4 dBm
- 模块: GFSK / FSK / AQPSK / DPSK
- 无线: 蓝牙 3.0 A2DP v1.3 AVRCP v1.5
- 尺寸 (直径 x 高 x 长): 280mm x 161mm x 260mm

### CHT

- 聲道數: 4
- 揚聲器: 2個3" 低音喇叭, 2個1/4" 高音喇叭, 2個被動散熱器
- 聲力: 4 x 15 W
- 最大聲壓級: 95dB @ 1m
- 電源要求: 100 ~ 240 V AC, 50/60 Hz
- 電源供應器: 19V, 2.0A
- 內建電池: 3.7V, 2600mAh 鋰電池
- 功耗: 最大 38 W, 待命時 < 1 W
- 頻帶: 每個喇叭: 60 Hz ~ 20 kHz
- 頻率範圍: 60 Hz ~ 20 kHz
- 頻率範圍: 2402 MHz ~ 2480 MHz
- 發射器功率: < 4 dBm
- 模組: GFSK / FSK / AQPSK / DPSK
- 無線: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- 尺寸 (直徑 x 高 x 長): 280mm x 161mm x 260mm

### IND

- Nomor saluran: 4
- Transducer: 2 x 3" woofer, 2 x 1/4" tweeter, 2 x radiator passif
- Bauring: 4 x 15W
- SPL Maksimum: 95dB@1m
- Kebutuhan daya: 100~240V AC, 50/60Hz
- Adapter daya: 19V, 2.0A
- Baterai bawaan: 3.7V, 2600mAh Lithium
- Konsumsi daya Maksimum: 38W < daya 1W
- Impedansi Speaker: 4 ohm per speaker
- Responsi frekuensi: 60 Hz ~ 20kHz
- Rentang frekuensi: 2402MHz ~ 248000Hz
- Daya pancaran: <4dBm
- Modulasi: GFSK / FSK / AQPSK / DPSK
- Nirkabel: Bluetooth 3.0 A2DP v1.3 AVRCP v1.5
- Dimensi (Da x L x T): 280mm x 161 mm x 260mm



Este equipamento opera em caráter secundário, isto é, não tem direito a produção independente e não deve interferir em sistemas operando em caráter primário.

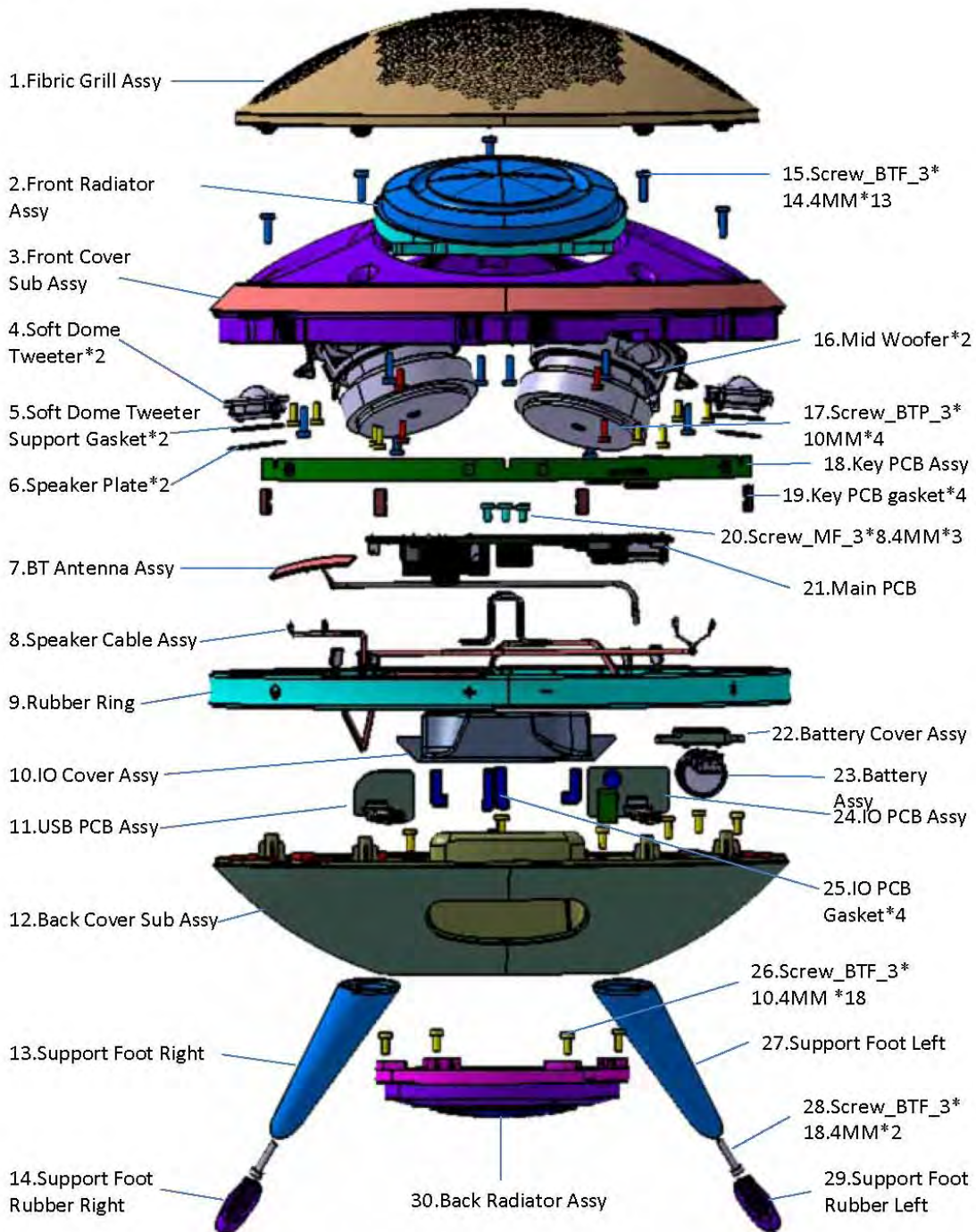
Este produto está homologado pela ANATEL, de acordo com os procedimentos necessários para a homologação de equipamentos de telecomunicações.

Para maiores informações, consulte o site da ANATEL em [www.anatel.gov.br](http://www.anatel.gov.br)



# Onyx P3 Explode View

V1.0



Component	Description	Drawing No
MEOY261009A	Fabric Grill Assy	1
MEOY261011A	Front Radiator Assy	2
MEOY261001A	Front Cover Sub Assy	3
S0S23001000	Soft Dome Tweeter	4
MEOY233003A	Soft Dome Tweeter Support Gaske	5
MEOY252002A	Speaker Plate	6
S0A03180000	BT Antenna Assy	7
MEOY240004A	Speaker Cable Assy	8
MEOY273002A	Rubber Ring(Laser)	9
MEOY261007A	IO Cover Assy	10
31OY2A1000A	USB PCB Assy	11
MEOY261004A	Back Cover Sub Assy	12
MEOY201005A	Support Foot Right	13
MEOY273004A	Support Foot Rubber Right	14
W0000301411	Screw_BTF_3*14.4MM	15
S0S00096000	Mid Woofer	16
W0003301011	Screw_BTP_3*10MM	17
31OY2K1000A	Key PCB Assy	18
MEOY233024A	Key PCB Gasket	19
W6000308410	Screw_MF_3*8.4MM	20
31OY2M1000A	Main PCB	21
MEOY261006A	Battery Cover Assy	22
BPOY2LG001B	Battery Assy	23
31OY2A2000A	IO PCB Assy	24
MEOY233020A	IO PCB Gasket	25
W0000301011	Screw_BTF_3*10.4MM	26
MEOY201004A	Support Foot Left	27
W0000301811	Screw_BTF_3*18.4MM	28
MEOY273003A	Support Foot Rubber Left	29
MEOY261012A	Back Radiator Assy	30

## Harman Kardon Onyx Studio Disassembly manual



<b>General</b>	Output: 15Wx4 @Adaptor mode
<b>Speaker</b>	Passive Radiator: $\Phi$ 120.5 mm Woofer: $\Phi$ 78mm; Tweeter: $\Phi$ 31.6mm
<b>Audio</b>	Frequency response: 20Hz – 20KHz +/-1dB (EQ setting disabled); Impedance: 4 $\Omega$ Ohms Woofer SPL: 83 dB 1W / 1m Tweeter SPL: 88 dB 1W / 1m
<b>Connectivity</b>	Bluetooth 3.0 + EDR
<b>I/O Input</b>	DC Jack (battery charging, power supply) MicroUSB (for firmware upgrade only)
<b>Power</b>	DC 19V/2A
<b>Other Features</b>	Tactile Power buttons, volume up/down buttons and BT pairing button; Front/Rear passive radiators; Battery 2500mAh (min.)

# Harman Kardon Onyx Studio Disassembly manual

## 1. SERVICE DEVICES 維修工具

	
<b>ESD-wristband</b> 防靜電手環	<b>ESD-gloves</b> 防靜電手套
	
<b>T10 Screwdriver</b> T10 螺絲起子	<b>Plastic Plate</b> 塑膠棒



# Harman Kardon Onyx Studio Disassembly manual

## 2. DISASSEMBLY INSTRUCTION 拆說明



1.把设备正面平放在工作台上  
Put the device on the table as shown in the figure.



2.用手取出 rubber support Left&Right.  
Remove the rubber support Left and support Right.



3.用螺丝刀取出右脚螺丝  
Loosen the right screw\_BB\_3\*18.2 by screwdriver.



4.用螺丝刀取出左脚螺丝  
Loosen the left screw\_BB\_3\*18.2 by screwdriver.



## Harman Kardon Onyx Studio Disassembly manual



5.取下右支架

Remove the right foot support.



6.取下左支架

Remove the left foot support.



7.用手或者工具从缺口位置掰开

Insert the tool into the gap as shown in the figure and open it.



8.取下前網紗盖

Remove the front cover.

## Harman Kardon Onyx Studio Disassembly manual



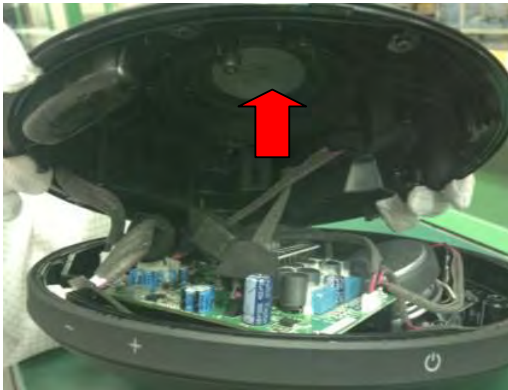
9.用螺丝刀取出前盖螺丝\*5

Loosen the 5 screws (BB\_3\*14.2mm) by screwdriver.



10.从后面掰开后盖组件

Open the housing from the back cover.



11.打开上下壳

Open the housing.



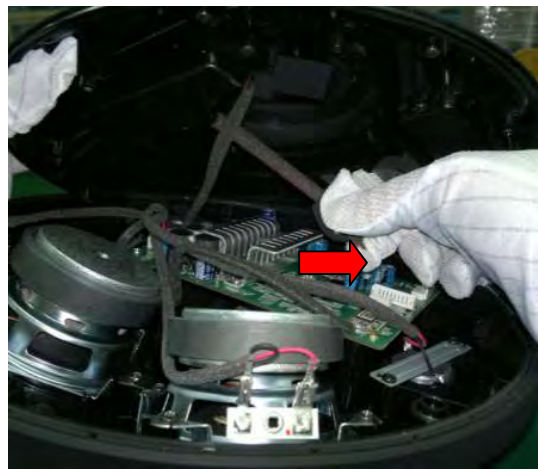
12.拔下 DC-Connector

Release the DC-Connector.

## Harman Kardon Onyx Studio Disassembly manual



13. 拔下 battery Connector  
Release the battery connector.



14. 拔下 USB Connector  
Release the USB connector.



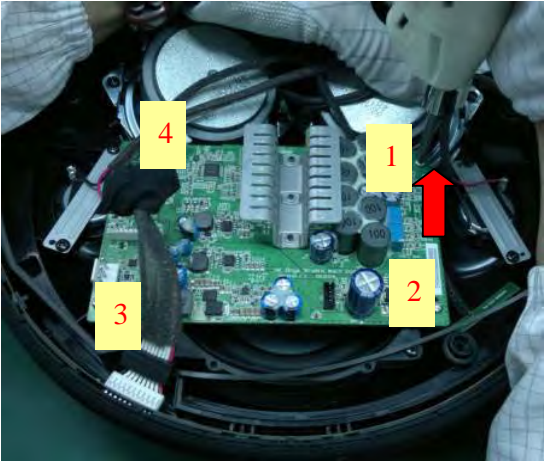

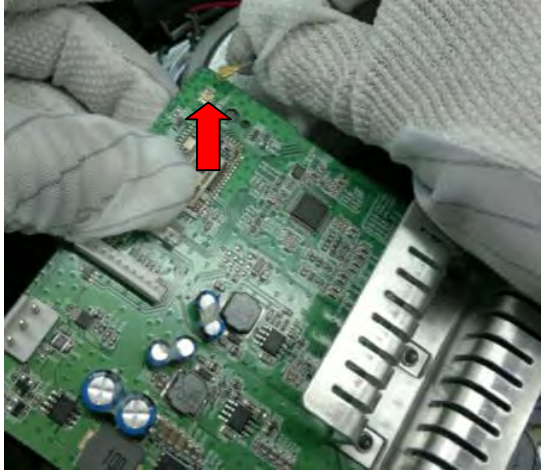
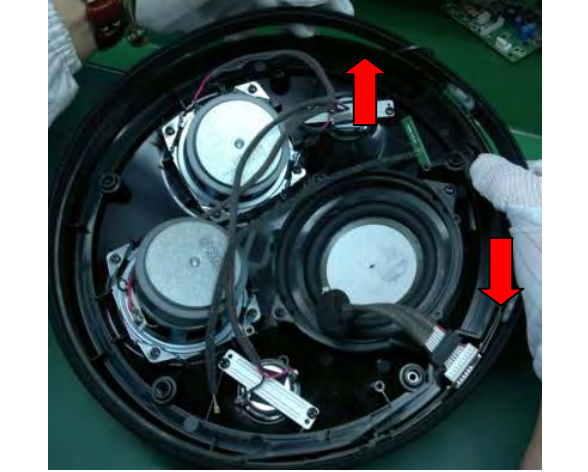
15. 拔下 key PCB Connector  
Release the key PCB connector.



16. 拔下 Speaker Connector  
Release the speaker connector.



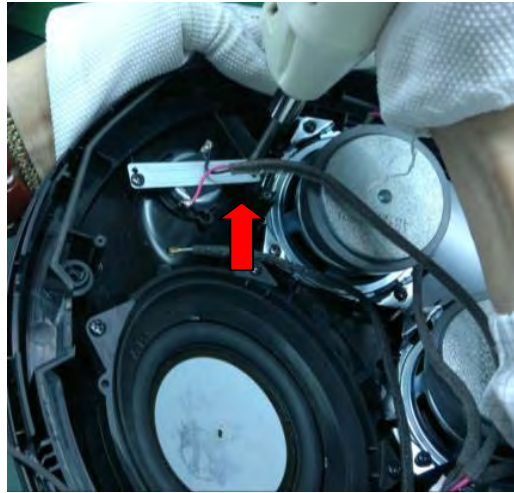
# Harman Kardon Onyx Studio Disassembly manual

	
<p>17.用螺丝刀取下主板螺丝*4 Loosen the 4 screws (BB_3*8.2mm) by screwdriver.</p>	<p>18.取出主板 Remove PCBA.</p>
	
<p>19.拨出 Antenna Connector Release the Antenna Connector.</p>	<p>20.取下 Rubber Ring Release the rubber ring.</p>

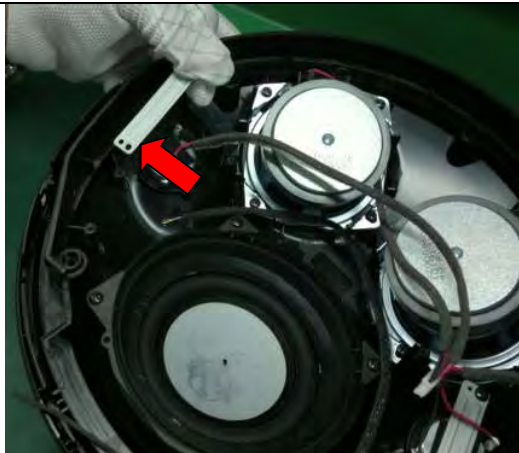
# Harman Kardon Onyx Studio Disassembly manual



21.取下 Key PCB  
Release the key PCB.



22.用螺丝刀拆掉 Soft Dome Tweeter 螺  
丝\*4  
Loosen the 4 screws (BB\_3\*10.2mm) of  
Soft Dome Tweeter by screwdriver.



23.取下 Speaker Plate\*2  
Release 2 Speaker Plates.

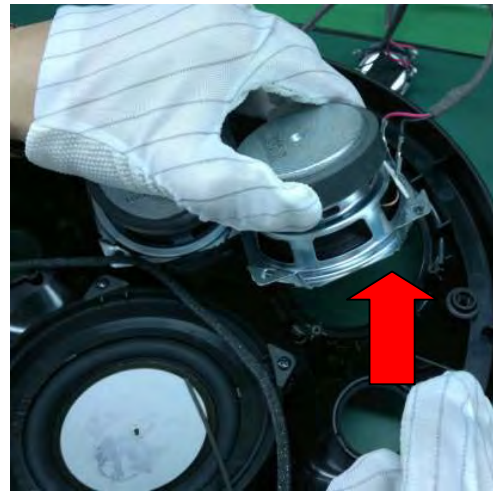


24.取出 Soft Dome Tweeter\*2  
Release 2 Soft Dome Tweeters.

## Harman Kardon Onyx Studio Disassembly manual



25.用螺丝刀拆掉 Mid Woofer 螺丝\*8  
Loosen the each 4 screws  
(BB\_3\*14.2mm) of 2 Mid Woofer by  
screwdriver.



26.取出 Mid Woofer\*2  
Release 2 Mid Woofers.



27.拆下 BT Antenna  
Remove BT Antenna.



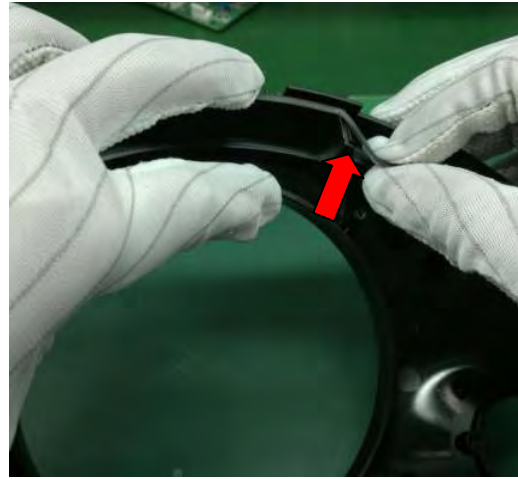
28.用螺丝刀拆掉 Front Radiator Assy 螺  
丝\*4  
Loosen the 4 screws (BB\_3\*14.2mm) of  
Front Radiator Assy by screwdriver.



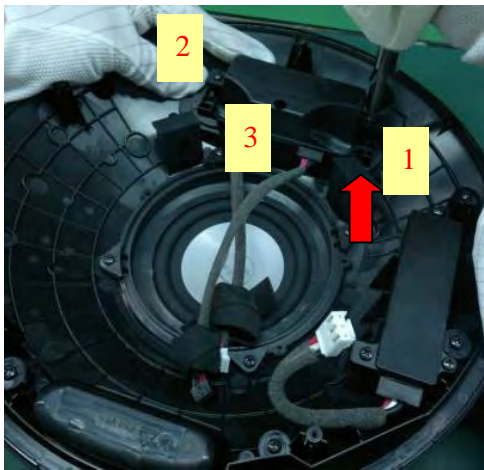
# Harman Kardon Onyx Studio Disassembly manual



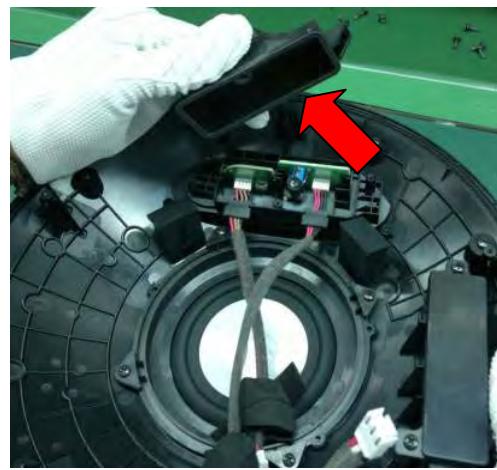
29.取出 Front Radiator Assy  
Remove Front Radiator Assy.



30.整理 Sponge Main Sealing 到凹槽内  
Put the Sponge Main Sealing into the gap as shown in the figure.



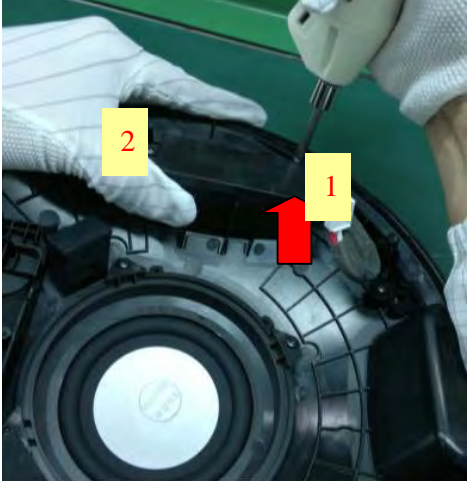



31.用螺丝刀拆掉 IO Cover Assy 螺丝\*3  
Loosen the 3 screws (BB\_3\*10.2mm) of IO Cover Assy by screwdriver.


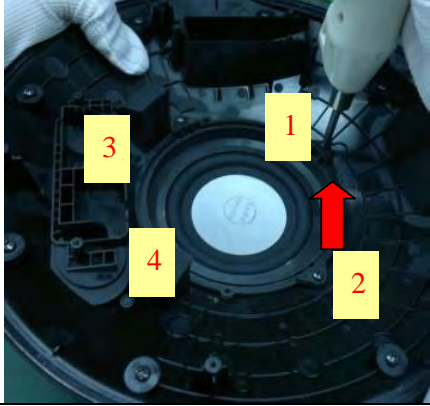




32.取下 IO Cover Assy  
Remove IO Cover Assy.

# Harman Kardon Onyx Studio Disassembly manual

	
<p>33.取出 DC Jack PCB Remove DC Jack PCB.</p>	<p>34.取出 USB PCB Remove USB PCB.</p>
	
<p>35.用螺丝刀拆掉 Battery Cover 螺丝*2 Loosen the 2 screws (BB_3*10.2mm) of Battery Cover by screwdriver.</p>	<p>36.取下 Battery Cover Remove Battery Cover.</p>

## Harman Kardon Onyx Studio Disassembly manual

	
<p>37.取出 Battery Remove the Battery.</p>	<p>38.用螺丝刀拆掉 Back Radiator Assy 螺丝*4 Loosen the 4 screws (BB_3*10.2mm) of Back Radiator Assy by screwdriver.</p>
	
<p>39.取出 Back Radiator Assy Remove Back Radiator Assy.</p>	<p>40. 用螺丝刀拆掉 Rear Cover 螺丝*8 Loosen the 8 screws (BB_3*10.4mm) of Rear Cover by screwdriver.</p>

## Harman Kardon Onyx Studio Disassembly manual



41. 取下 Rear Cover

Remove the Rear Cover.



## Harman Kardon Onyx Studio Assembly procedure



<b>General</b>	Output: 15Wx4 @Adaptor mode
<b>Speaker</b>	Passive Radiator: $\Phi$ 120.5 mm Woofer: $\Phi$ 78mm; Tweeter: $\Phi$ 31.6mm
<b>Audio</b>	Frequency response: 20Hz – 20KHz +/-1dB (EQ setting disabled); Impedance: 4 $\Omega$ Ohms Woofer SPL: 83 dB 1W / 1m Tweeter SPL: 88 dB 1W / 1m
<b>Connectivity</b>	Bluetooth 3.0 + EDR
<b>I/O Input</b>	DC Jack (battery charging, power supply) MicroUSB (for firmware upgrade only)
<b>Power</b>	DC 19V/2A
<b>Other Features</b>	Tactile Power buttons, volume up/down buttons and BT pairing button; Front/Rear passive radiators; Battery 2500mAh (min.)

# Harman Kardon Onyx Studio Assembly procedure

## 1. SERVICE DEVICES 維修工具

		
<b>ESD-wristband</b> 防靜電手環	<b>ESD-gloves</b> 防靜電手套	
		
<b>T10 Screwdriver</b> T10 螺絲起子	<b>Tweezers</b> 鑷子	<b>Plastic Plate</b> 塑膠棒



# Harman Kardon Onyx Studio Assembly procedure

## 2. ASSEMBLY INSTRUCTION 裝說明

 <p>藍牙天線貼付于兩螺柱中間位置</p>	 <p>密封圈折疊</p> <p>密封圈脫出</p>
<p>1. 取藍牙小板 BT Antenna, 使用鑷子, 撕除藍牙小板離型紙, 把藍牙小板貼入前殼對應位置(注意: 藍牙天線需壓緊)</p> <p>Tears off linear of adhesive from BT Antenna Assy and stick on the front cover by pressing as shown in the figure.</p> <p><b>Note: Please use the pressing fixture for this assembly.</b></p>	<p><b>注意: 密封圈勿折疊, 密封圈勿脫出</b></p> <p><b>Attention: Do not bent the rubber ring and let it out of the gap.</b></p>
	
<p>2.1 把 Front Radiator 裝在前殼對應位置(Front Radiator 安裝位置有防呆設計)</p>	<p>2.2 使用螺絲起子, 依次鎖付 4PCs 螺絲 (3*10.2MM)</p>

## Harman Kardon Onyx Studio Assembly procedure

**注意：Front Radiator 不可壓到藍牙天線**

Assemble the Front Radiator to the front cover.

**Note: Do not press the BT Antenna Assy shown as in the figure.**

Tightens 4 screws by using the T10 screwdriver.



3. 放置 Woofer 在前殼對應位置

**注意：Mid Woofer“接頭”朝面框外側位置**

Place the Woofer fix on the front cover.

**Note: Let the connector of Mid Woofer outward shown as in the figure.**

3.1 使用螺絲起子，依次鎖付 Mid Woofer 4PCs 螺絲(3\*14.2MM)

Tightens 4 screws by using the T10 screwdriver.



3.2 **注意：Mid woofer 正面鼓膜不可觸碰、撞傷**

**Note: Do not damage and touch the Mid woofer**

4. 放置 Mid Woofer 在前殼對應位置

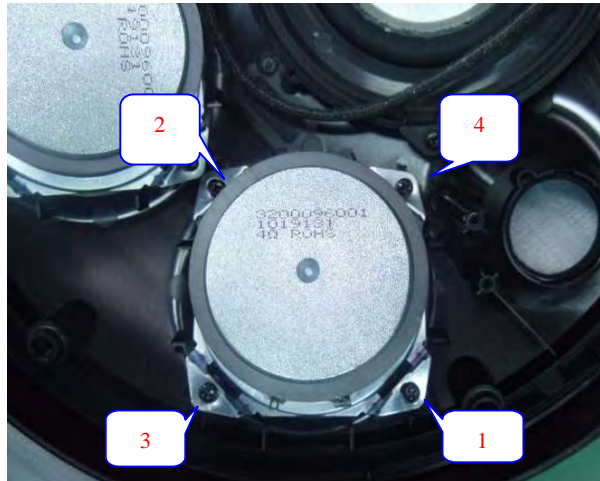
**注意：Mid Woofer“接頭”朝面框外側位置**

Place the Woofer fix on the front cover.

**Note: Let the connector of Mid Woofer outward shown as the figure**



## Harman Kardon Onyx Studio Assembly procedure



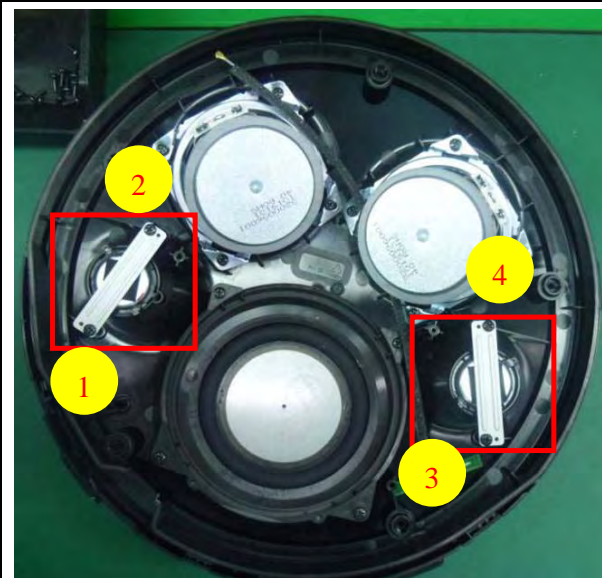
4.1 使用螺絲起子，依次鎖付 Mid Woofer 4PCs 螺絲(3\*14.2MM)  
Tightens 4 screws by using the T10 screwdriver.



4.2 注意: Mid woofer 正面鼓膜不可觸碰、撞傷  
**Note: Do not damage and touch the Mid woofer**

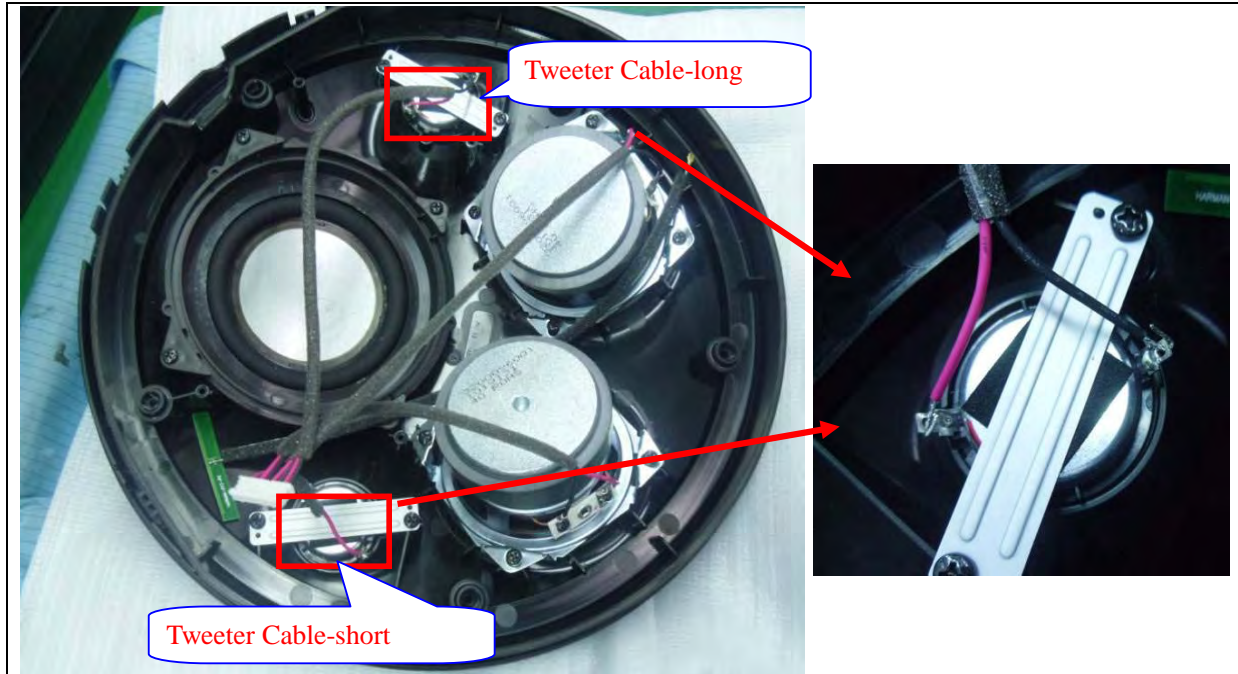


5. 撕除 Gasket 離型紙，貼付在 Soft Dome Tweeter 背面磁鐵上，居中貼付；  
注意：Soft Dome Tweeter“耳朵”對準缺口處  
Tears off linear of adhesive from gasket and stick on the back of Soft Dome Tweeter.



6. 取 Speaker Plate 裝在 Soft Dome Tweeter 上，使用螺絲起子，依次鎖付 4PCs 螺絲 (3\*10.2MM)  
注意：Speaker Plate 小孔為定位孔，大孔為螺絲孔  
Assemble Speaker Plate on the Soft Dome Tweeter and tightens 4 screws by using the T10 screwdriver.

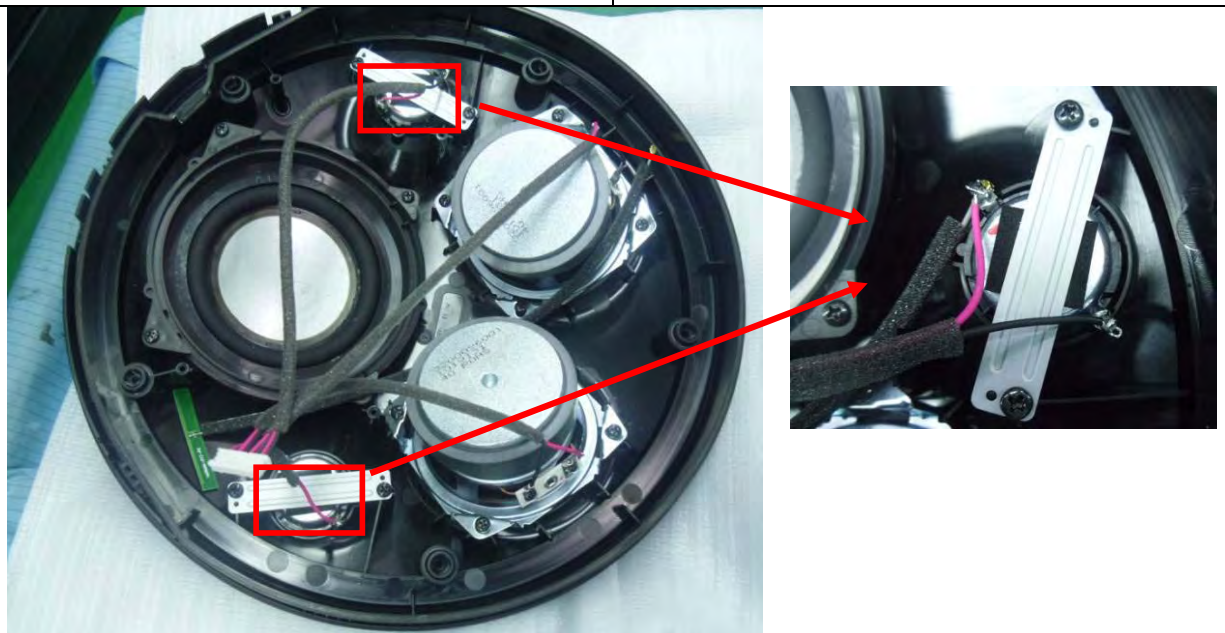
## Harman Kardon Onyx Studio Assembly procedure



7. 把 Tweeter Cable-long 和 Tweeter Cable-short 連接到對應的 Tweeter 上  
Connect the Tweeter Cable-long and Tweeter Cable-short to the Tweeter shown in the figure.

**注意：** Tweeter Cable-long 和 Tweeter Cable-short 不可接錯，不可接反；紅色 Tweeter Cable 對應 Tweeter 紅色打點標示端，黑色 Tweeter Cable 對應另一端

**Note:** Be carefully the direction of Tweeter Cable-long and Tweeter Cable-short.



8. 取電烙鐵及無鉛錫絲焊接固定 Tweeter Cable-long；完成后，焊接固定 Tweeter Cable-short

**注意：** 烙鐵接觸接口時間不能超過 5s，防止接口脫落

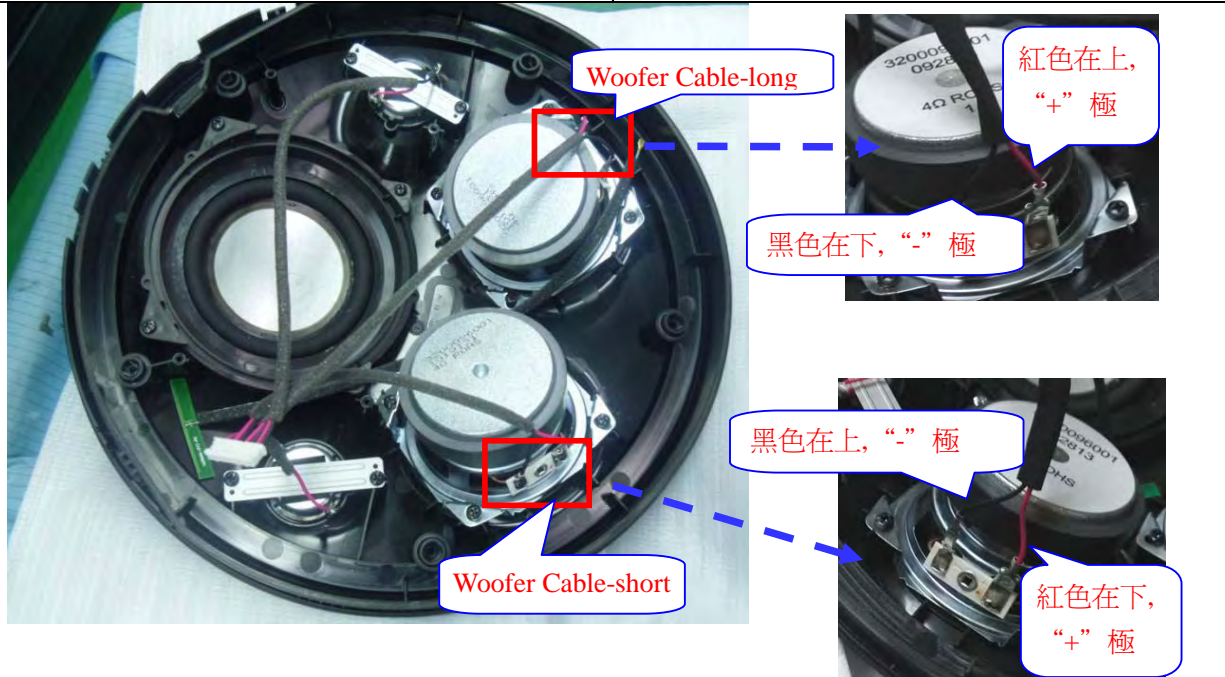
**注意：** 焊接處需圓滑飽滿，連接牢固



## Harman Kardon Onyx Studio Assembly procedure

Soldering and fixing Tweeter Cable-long and Tweeter Cable-short by sequence.

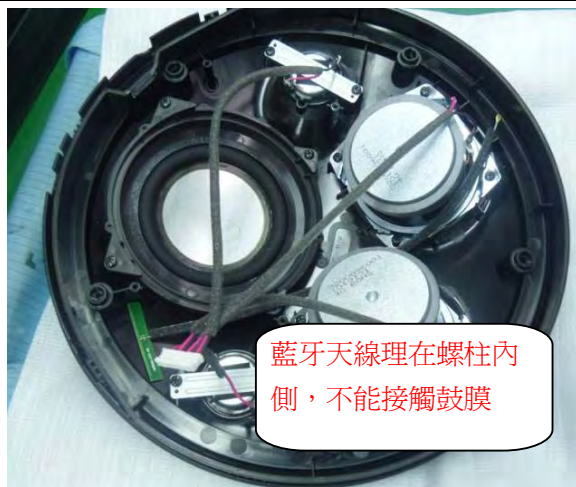
**Note: Do not over 5s for the soldering, and make sure the soldering quality and tightness.**



9. 取 Speaker Cable 按正負極連接到 Mid Woofer 對應位置  
Connect the Speaker Cable to the Mid Woofer.

注意：紅“+”黑“-”，紅色 Cable 線對應 Mid Woofer “+”極，黑色 Cable 線對應 Mid Woofer “-”極；Woofer Cable-long 和 Woofer Cable-short 不可接反

**Note: Red “+” Cable with Mid Woofer “+” Black “-” with Mid Woofer “-”, please make sure the direction of Woofer Cable-long and Woofer Cable-short.**



藍牙天線理在螺柱內側，不能接觸鼓膜



排線走螺柱內側

排線走螺柱內側

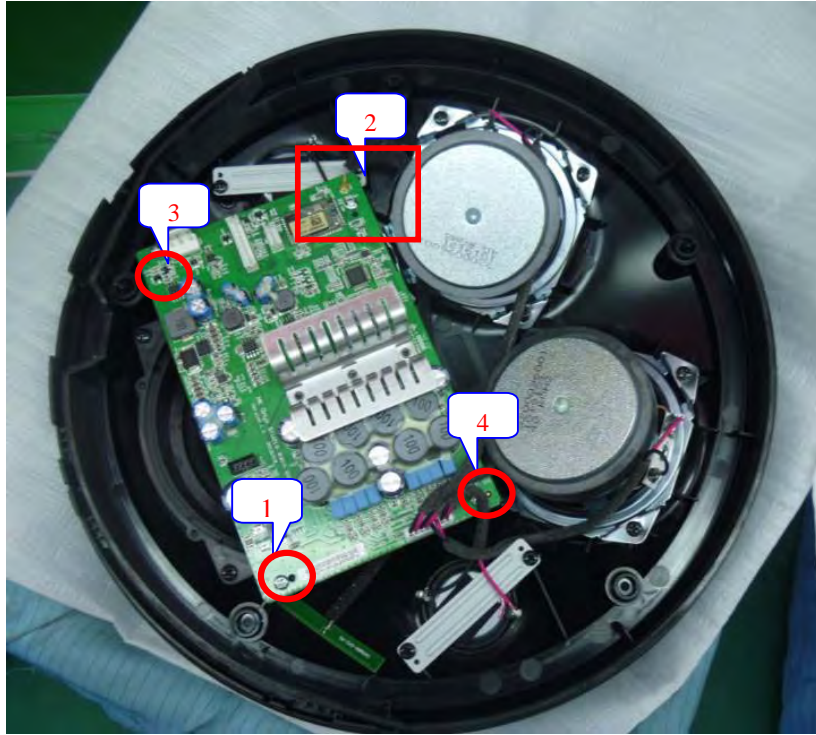
10. 將主板對準面框螺柱，注意藍牙天線走主板下側經過，不能接觸鼓膜

注意：主板定位孔需對到位

**Note: Position the MB hole shown as the figure.**

## Harman Kardon Onyx Studio Assembly procedure

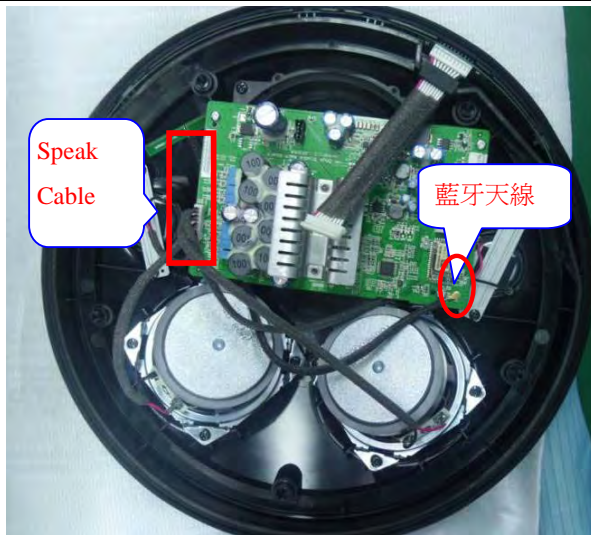
Assemble the MB to the post and let the BT A Antenna under the MB, and do not touch Mid woofer.



11. 使用螺絲起子，依次鎖付 4PCs 螺絲 (3\*8.2MM) 固定主板  
Tightens 4 screws by using the T10 screwdriver.

注意：主板定位孔需對到位

Note: Position the MB hole shown as the figure.



12. 將 Speak Cable 連接到主板指定接口；將天線連接到主板對應位置，注意扣合到位  
Assemble the Speak Cable and BT Antenna to



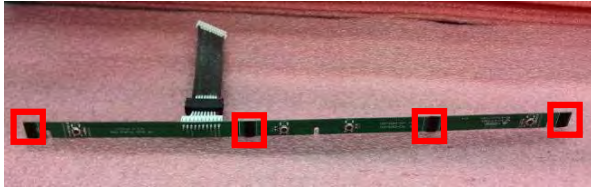
12.1 將喇叭排線理到喇叭側下邊經過，不能在螺絲上方經過

Arrange the Speak Cable under the Speaker and

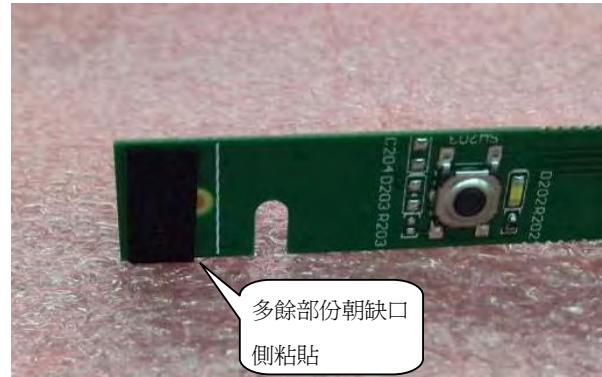


## Harman Kardon Onyx Studio Assembly procedure

the MB shown in the figure.



it shouldn't pass by the upper screw.



13. 取 4PCs 泡棉粘貼到按鍵板指定位置  
Assemble 4 sponges to the switches shown in the figure.

**注意：**泡棉粘貼在白線中間位置，兩側靠末端粘貼，長於部份朝缺口側粘貼

**Note:** If the length is longer, please stick near the gap.

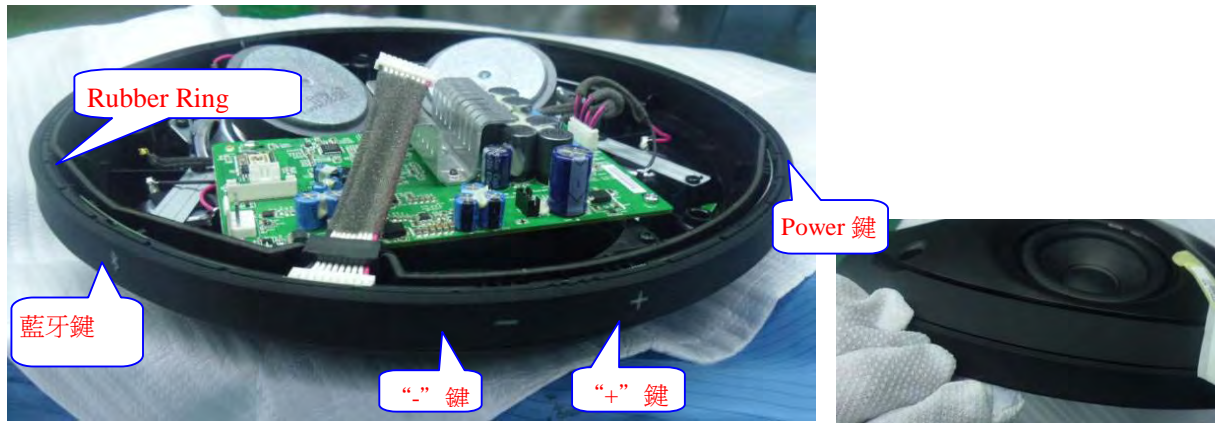


14. 將按鍵板從排線接口位置開始組裝，再依次左右兩側卡入面框  
Assemble the Cable first and then assemble the both sides of the keys.

**注意：**按鍵板需注意組裝方法，防止折斷按鍵板

**Note:** Do not bend the key PCB.

## Harman Kardon Onyx Studio Assembly procedure

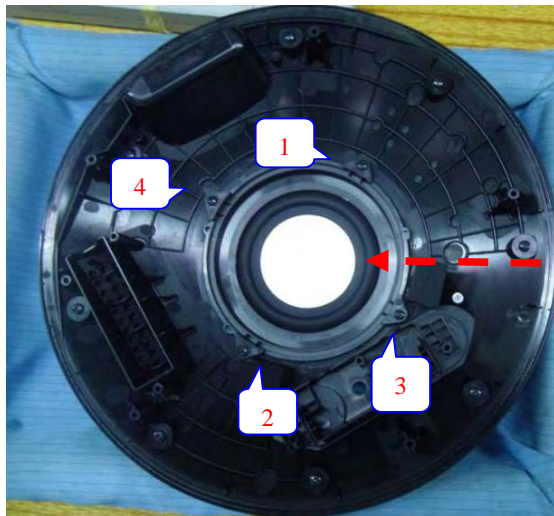


15. 取 Rubber Ring 對準按鍵處依次往面框側組裝

Assemble the rubber ring and align the keys by sequence.

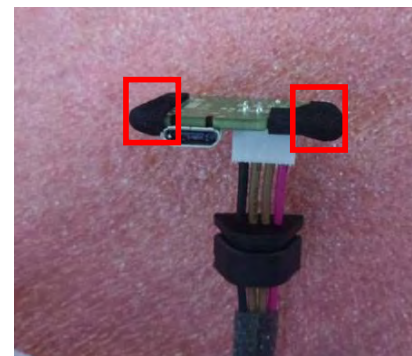
**注意：** Rubber Ring 需注意組裝方法，需卡到位

**Note:** Take care the assembly method and its position.



16. 把 Back Radiator 組裝到後殼對應位置 (Front Radiator 安裝位置有防呆設計)；取螺絲起子，依次鎖付 4PCs 螺絲(3\*10.2MM)

Assemble the Back Radiator to the back of back cover shown in the figure. Tightens 4 screws by using the T10 screwdriver.

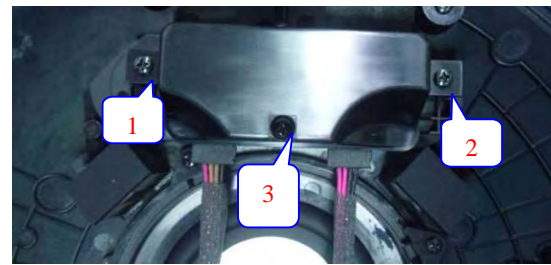
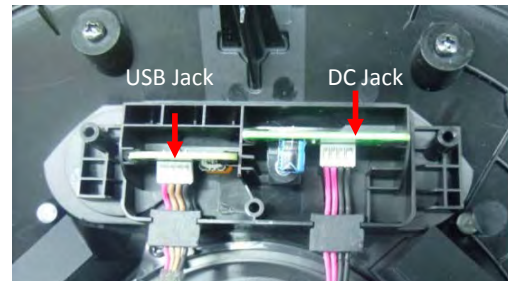




## Harman Kardon Onyx Studio Assembly procedure

17. 取 USB PCB 1PC，貼付 Gasket 2PCs  
Assemble 2 gaskets on USB PCB shown in the figure.

17-1 取 DC Jack 1PC，貼付 Gasket 2PCs  
Assemble 2 gaskets on DC jack shown in the figure.



18. 把 DC Jack 和 USB PCB 安裝至後殼對應位置，把 DC Jack 線和 USB PCB 線卡入卡槽，如圖

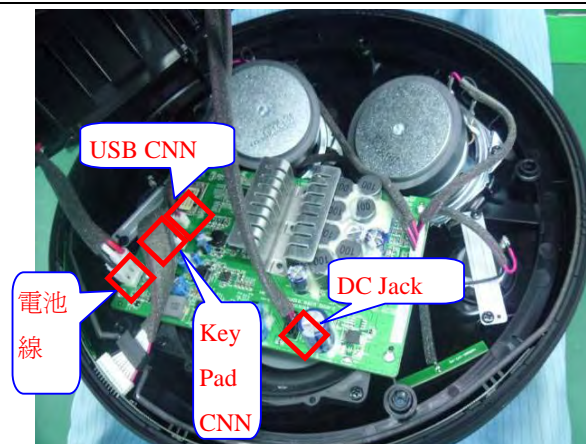
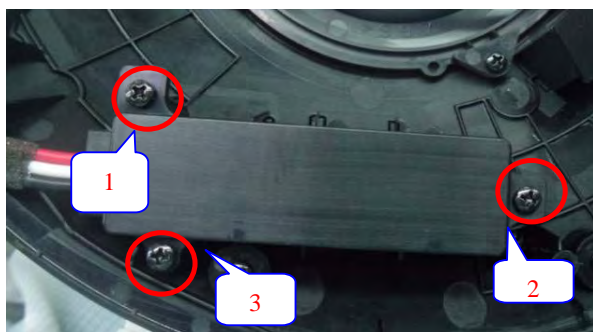
**注意：** DC Jack 線和 USB PCB 線需卡到底，排線橡膠需卡入卡槽

Assemble DC Jack and USB PCB on the back cover and put the cables into the gap shown in the figure.

**Note:** Make sure the cables completely inside the gap.

18-1 取 I/O Cover 裝在後殼對應位置，如圖  
使用螺絲起子，依次鎖付 3PCs 螺絲  
(3\*10.2MM)

Place the I/O cover on the back cover shown in the figure, and tightens 3 screws by using the T10 screwdriver.



19. 取電池蓋蓋板裝入機台指定位置對準螺

20. 將後蓋 DC Jack 和 USB PCB 排線接口端折

## Harman Kardon Onyx Studio Assembly procedure

絲孔；使用螺絲起子，依次鎖付 3PCs 螺絲 (3\*10.2MM)

Place the battery cover shown as in the figure, and tightens 3 screws by using the T10 screwdriver.

疊一下；分別把 USB/DC 接口排線,電池排線 /Key Pad 線插在主板對應位置

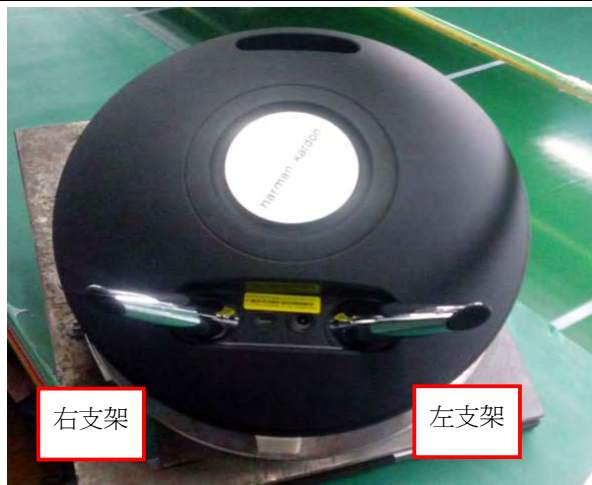
Arrange the cables of DC Jack and USB PCB on the back cover, and then connect USB/DC/battery/Key pad cables shown in the figure.



21. 確認排線插入到位后，將後蓋從治具中拿出，蓋到前蓋上，要求後蓋的把手對準前蓋開關接口后，盒蓋卡緊

Take the back cover and assemble to the front cover, make sure the cover has been completely closed.

22. 取螺絲起子，鎖付螺絲 5PCs(3\*14.2MM)  
Tightens 5 screws by using the T10 screwdriver.



23. 取 Screw\_BB\_3\*18.2 分別將左、右支架鎖緊

24. 將前殼保護殼支架組裝到位  
**注意：**要保護殼支架對準音響上的缺口

## Harman Kardon Onyx Studio

### Assembly procedure

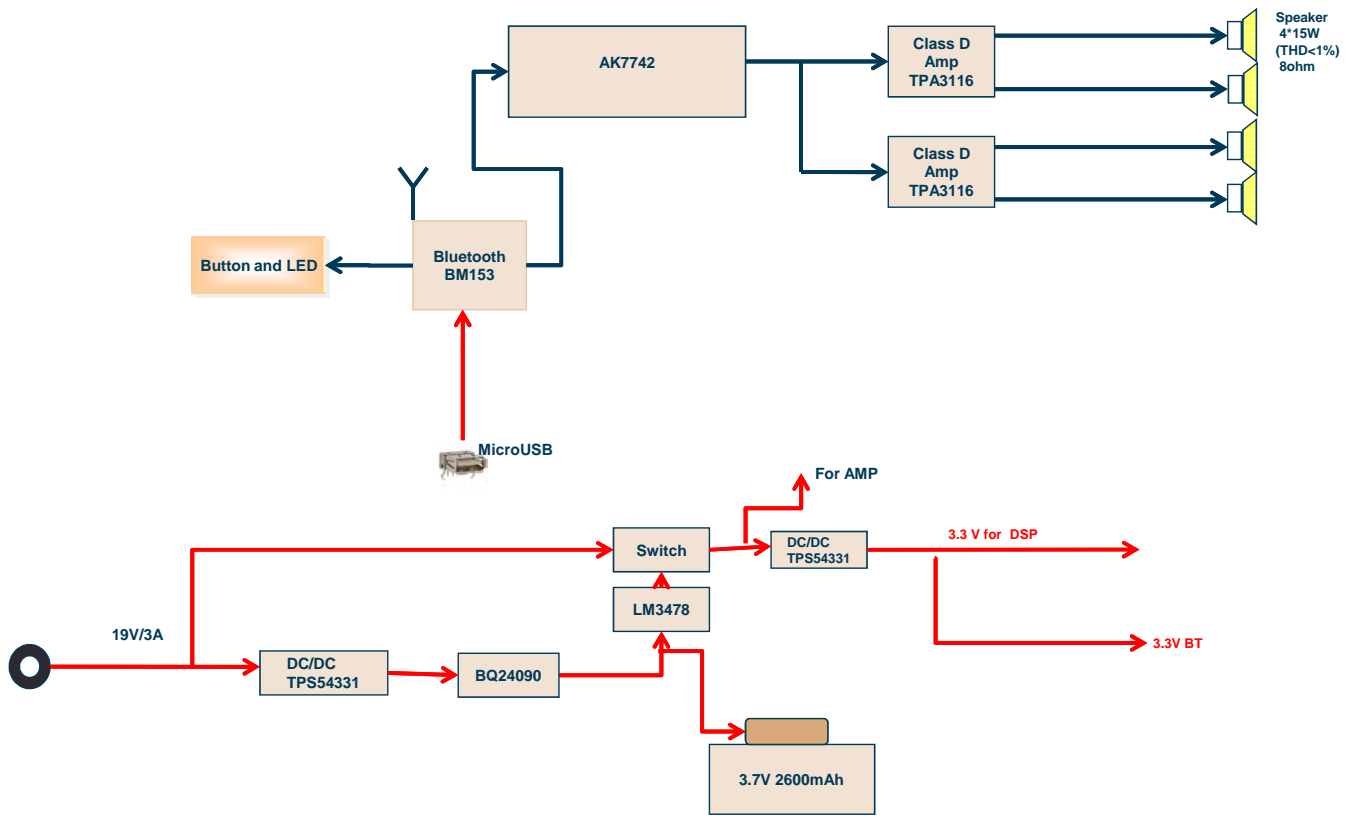
Assemble 2 Support Foot Rubber and tightens 2 screws by using the T10 screwdriver shown in the figure.

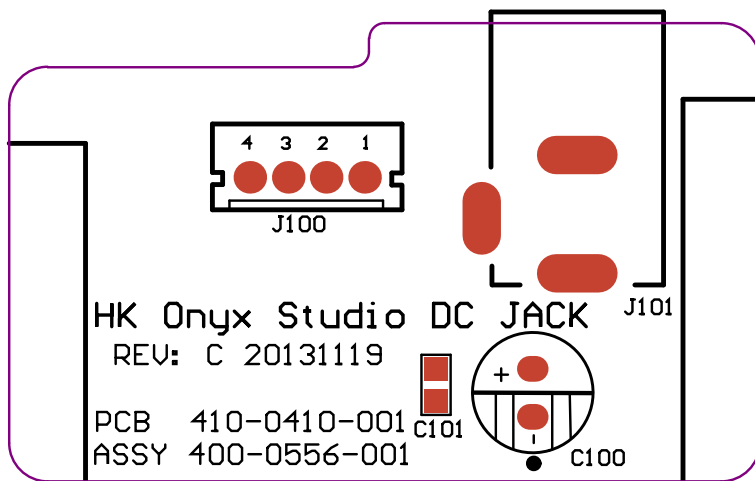
Assemble the Fabric Grill Assy to the right position.

**Note: Make sure the hooks have been completely assembled.**

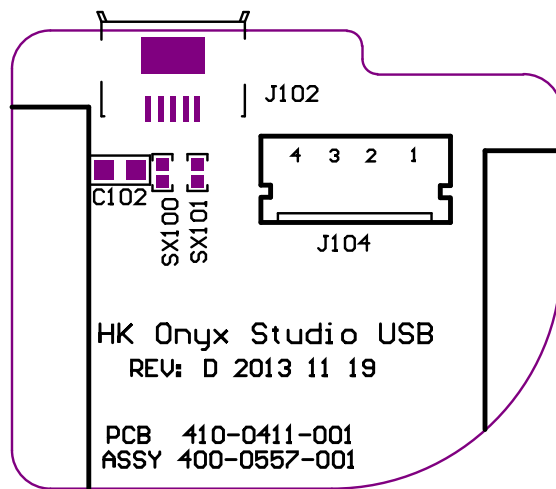


## Block Diagram





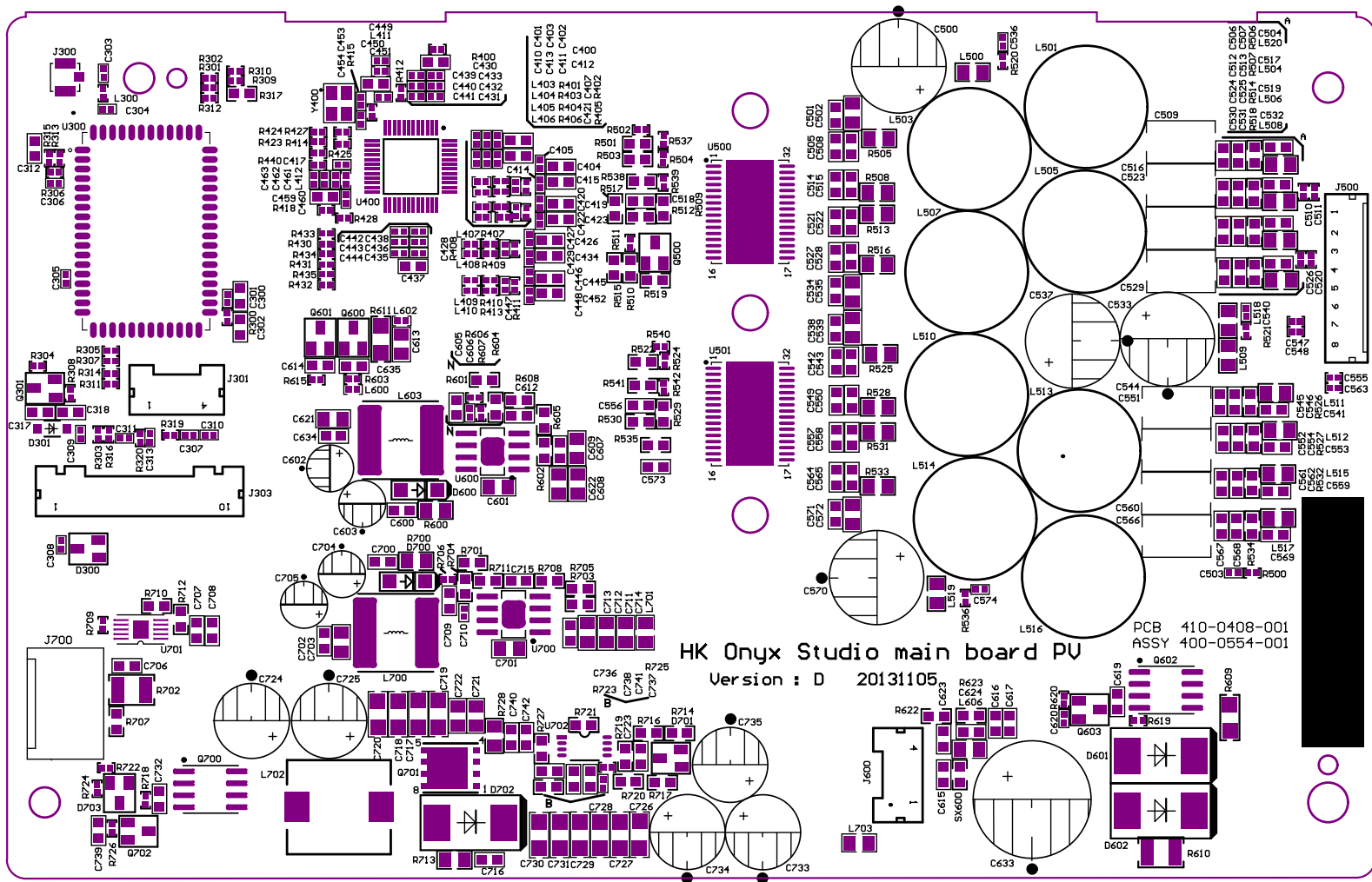
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PART NUMBER: 410-0410-001	REV: C
LAYER: SILKSCREEN TOP	
EE:	ME:



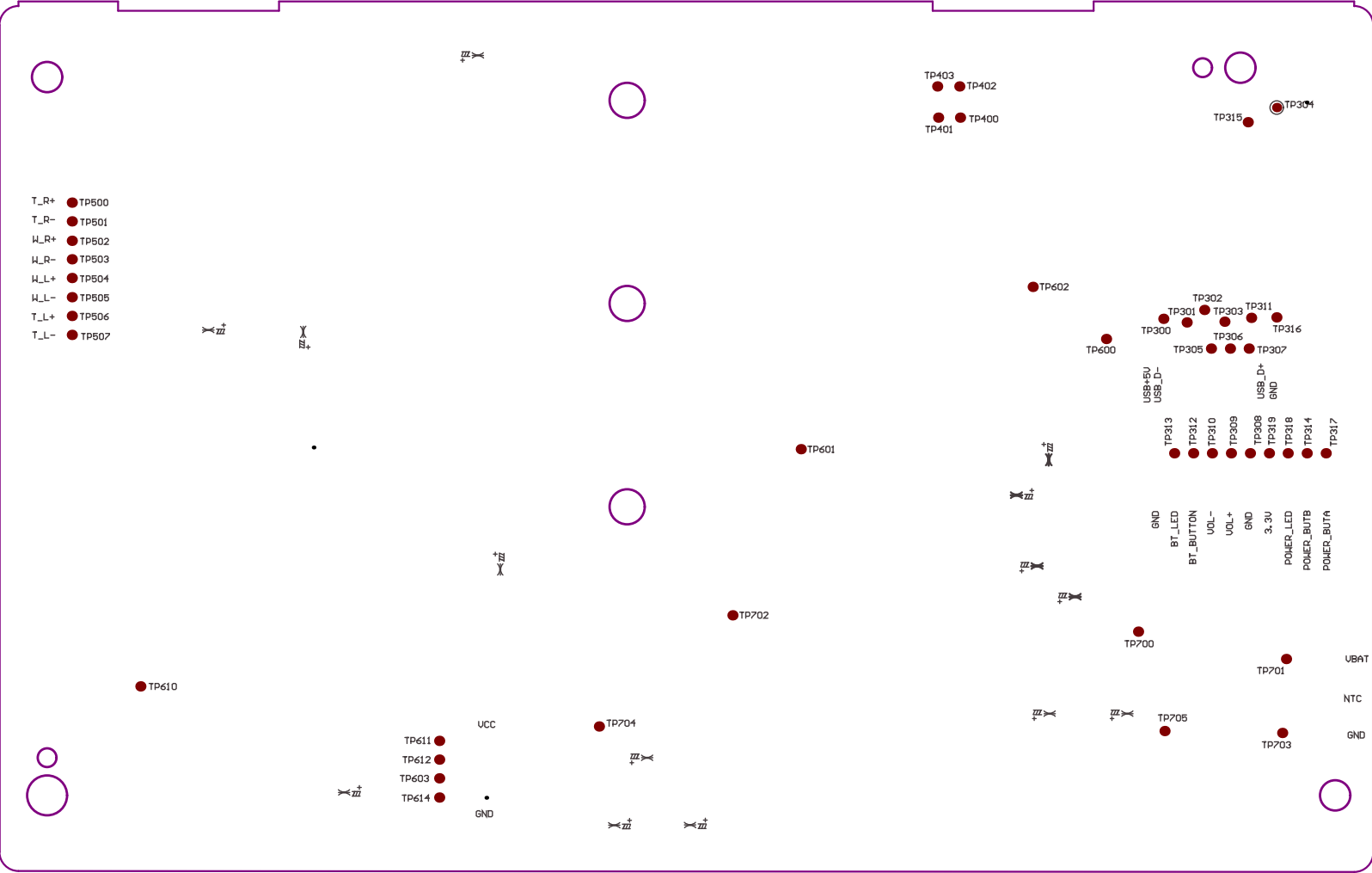
COMPANY: HARMAN LIFESTYLE	DATE: 19-11-2013
PART NUMBER: 400-0557-001	REV: D
LAYER: SILKSCREEN TOP	
EE:	ME:



410-0411-001



COMPANY: HARMAN LIFESTYLE	DATE: 05-11-2013
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EE:	ME:

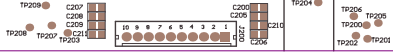


EE: ME:  
 LAYER: SILKSCREEN BOTTOM  
 PART NUMBER: 410-0408-001 REV: D  
 COMPANY: HARMAN LIFESTYLE  
 DATE: 02-11-2013



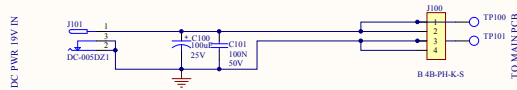


COMPANY: HARMAN LIFESTYLE DATE: 18-10-2013  
PART NUMBER: 410-0403-001 REV: B  
LAYER:  
ME:



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REVISION HISTORY			
REV	ECO	CHECKED	DATE

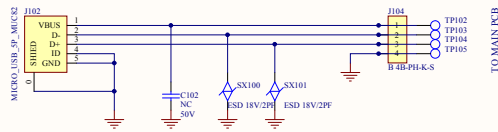


**Change list from REV A to REV B:**  
Change C100 package

HARMAN INTERNATIONAL		<small>Cannot open file M-02 Department 19 HKG_Engineering\PCB\Temp hac\hac\template / &amp;MimeContent\hac</small>		<b>Harman Consumer Group</b> Shenzhen, Guangdong, China	
NAME	DATE	TITLE			
CREATED		HK Onyx Studio DC Jack Board			
CHECKED		SIZE	DRAWING NO.	REV.	
SCALE:		CAD FILE:		SHEET 1	OF 1

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REVISION HISTORY			
REV	ECO	CHECKED	DATE

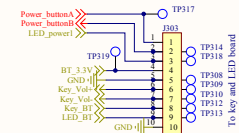
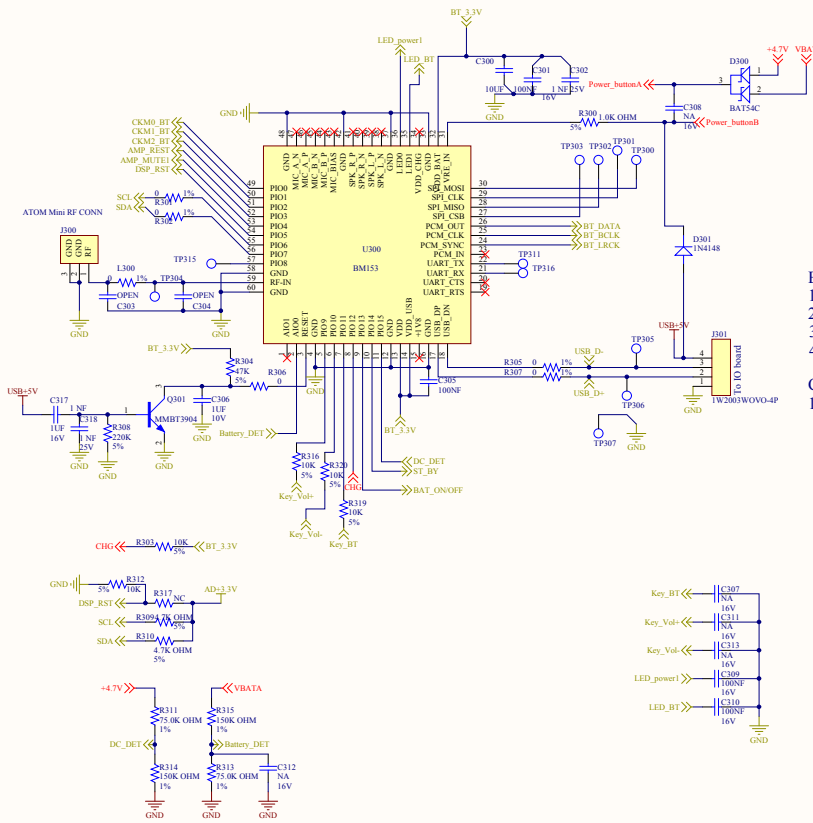


**Change list from REV A to REV B:**  
Change J102 package

HARMAN INTERNATIONAL		Cannot open file M:02 Department 19 HKX_Engineering_PCB_T.comp Iac-Sch-Template J:\Documents\2012-2013		Harman Consumer Group Shenzhen, Guangdong, China	
NAME	DATE	TITLE			
CREATED		HK Onyx Studio USB Board			
CHECKED		SIZE	DRAWING NO.	REV.	
SCALE:	CAD FILE:				
SHEET 1 OF 1					

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REVISION HISTORY			
REV	ECO	CHECKED	DATE
B-1	1.Add D301 2.Remove C308		



- B version change to C vesion change list
- 1.Remove C308/C307/C311/C313
  - 2.Add D301
  - 3.Add C312, but open
  - 4.Change connect R312 to GND;Add R317 open(Set DSP default mode is RST)
- C version change to D vesion change list
- 1.Change package for J301 and J303

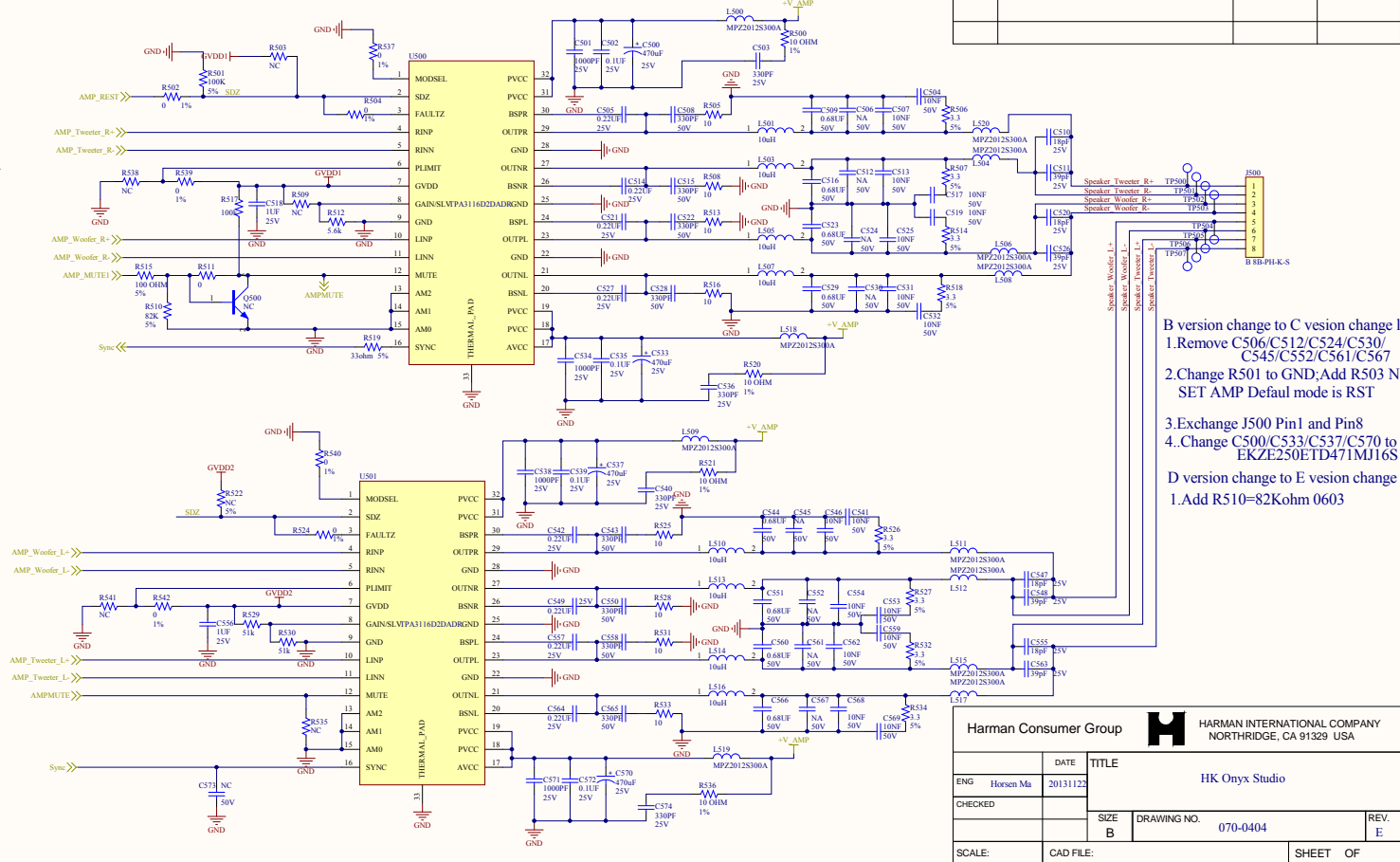
HARMAN INTERNATIONAL		Cannot open file M-02 Department 19 HKG_Engineering@PCBTemp Use S&S template (/Users/omax/Downloads/)		Harman Consumer Group Shenzhen, Guangdong, China	
NAME	DATE	TITLE			
CREATED	Horsen Ma	2013/11/22	HK Onyx Studio		
CHECKED		SIZE	DRAWING NO.		REV.
		B	070-0404		E
SCALE:	CAD FILE:			SHEET	OF






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REVISION HISTORY			
REV	ECO	CHECKED	DATE



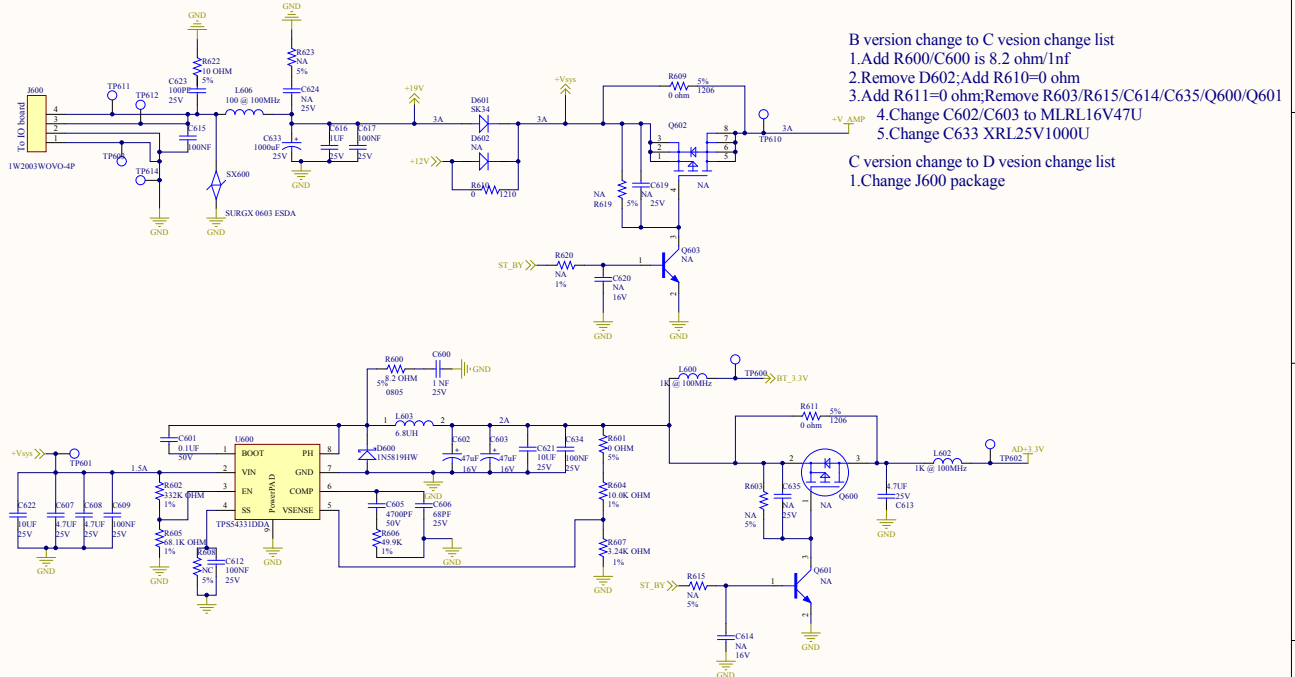
- B version change to C version change list
- 1. Remove C506/C512/C524/C530/C545/C552/C561/C567
- 2. Change R501 to GND; Add R503 NC SET AMP Default mode is RST
- 3. Exchange J500 Pin1 and Pin8
- 4. Change C500/C533/C537/C570 to EKZE250ETD471MJ16S
- D version change to E version change list
- 1. Add R510=82Kohm 0603

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NORTHBRIDGE, CA 91329 USA

ENG	Horsen Ma	DATE	20131122	TITLE	HK Onyx Studio	
CHECKED				SIZE	DRAWING NO. 070-0404	
					REV	E
SCALE:	CAD FILE:			SHEET	OF	

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REVISION HISTORY			
REV	ECO	CHECKED	DATE



- B version change to C vesion change list
- 1.Add R600/C600 is 8.2 ohm/1nf
  - 2.Remove D602;Add R610=0 ohm
  - 3.Add R611=0 ohm;Remove R603/R615/C614/C635/Q600/Q601
  - 4.Change C602/C603 to MLRL16V47U
  - 5.Change C633 XRL25V1000U
- C version change to D vesion change list
- 1.Change J600 package

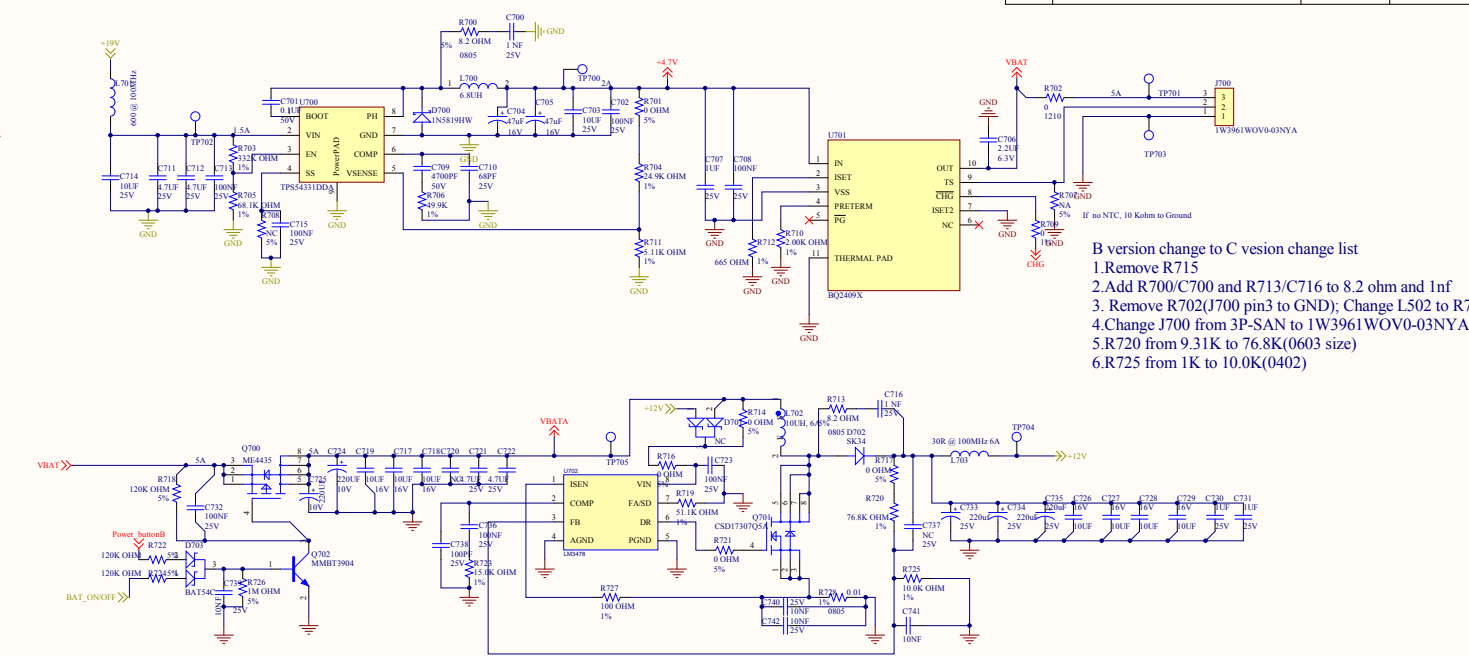
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NAME	DATE	TITLE			
CREATED	Horsen Ma	20131122	HK Onyx Studio		
CHECKED			SIZE	DRAWING NO.	REV.
			B	700XXXXXX	E
SCALE:		CAD FILE:		SHEET	OF

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REVISION HISTORY			
REV	ECO	CHECKED	DATE

B version change to C version change list  
 1.Remove R715  
 2.Add R700/C700 and R713/C716 to 8.2 ohm and 1nf  
 3. Remove R702(J700 pin3 to GND); Change L502 to R702  
 4.Change J700 from 3P-SAN to 1W3961W0V0-03NYA  
 5.R720 from 9.31K to 76.8K(0603 size)  
 6.R725 from 1K to 10.0K(0402)

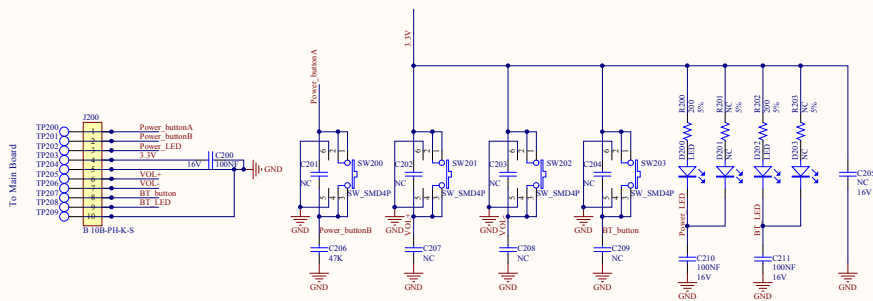
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CREATED	Horsen Ma	DATE	2013112	TITLE HK Onyx Studio	
CHECKED	MC Lee	SIZE	B	DRAWING NO.	700XXXXXX 070-0401
SCALE:		CAD FILE:		SHEET	OF





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REVISION HISTORY			
REV	ECO	CHECKED	DATE



**Change list from REV A to REV B:**  
 Remove C201, C202, C203, C204, C205, C206, C207, C208, C209

HARMAN INTERNATIONAL		Cannot open file M-02 Department 19 HKG_Engineering@PCBTemp Use S&S template (8/16/2016 10:44:48 AM)		Harman Consumer Group Shenzhen, Guangdong, China	
CREATED	NAME	DATE	TITLE HK Onyx Studio Key Board		
CHECKED			SIZE B	DRAWING NO.	REV. C
SCALE:	CAD FILE:			SHEET 1 OF 1	