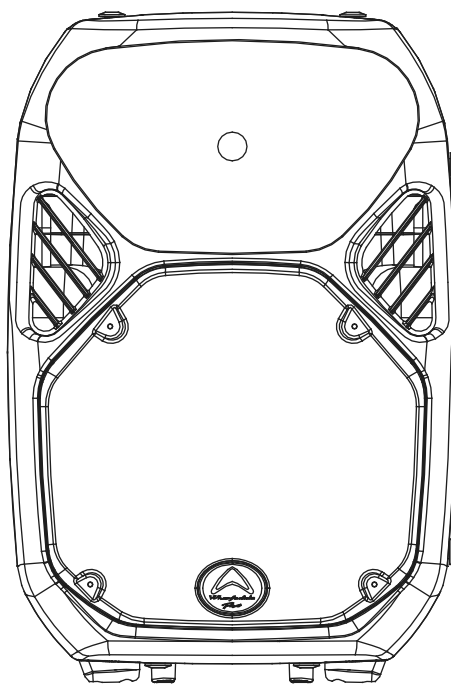




Wharfedale Professional

# Service Manual

## TITAN-AX12



**VERSION HISTORY**

Rev	Date	Update Content
V01	June. 12, 2017	The First Release

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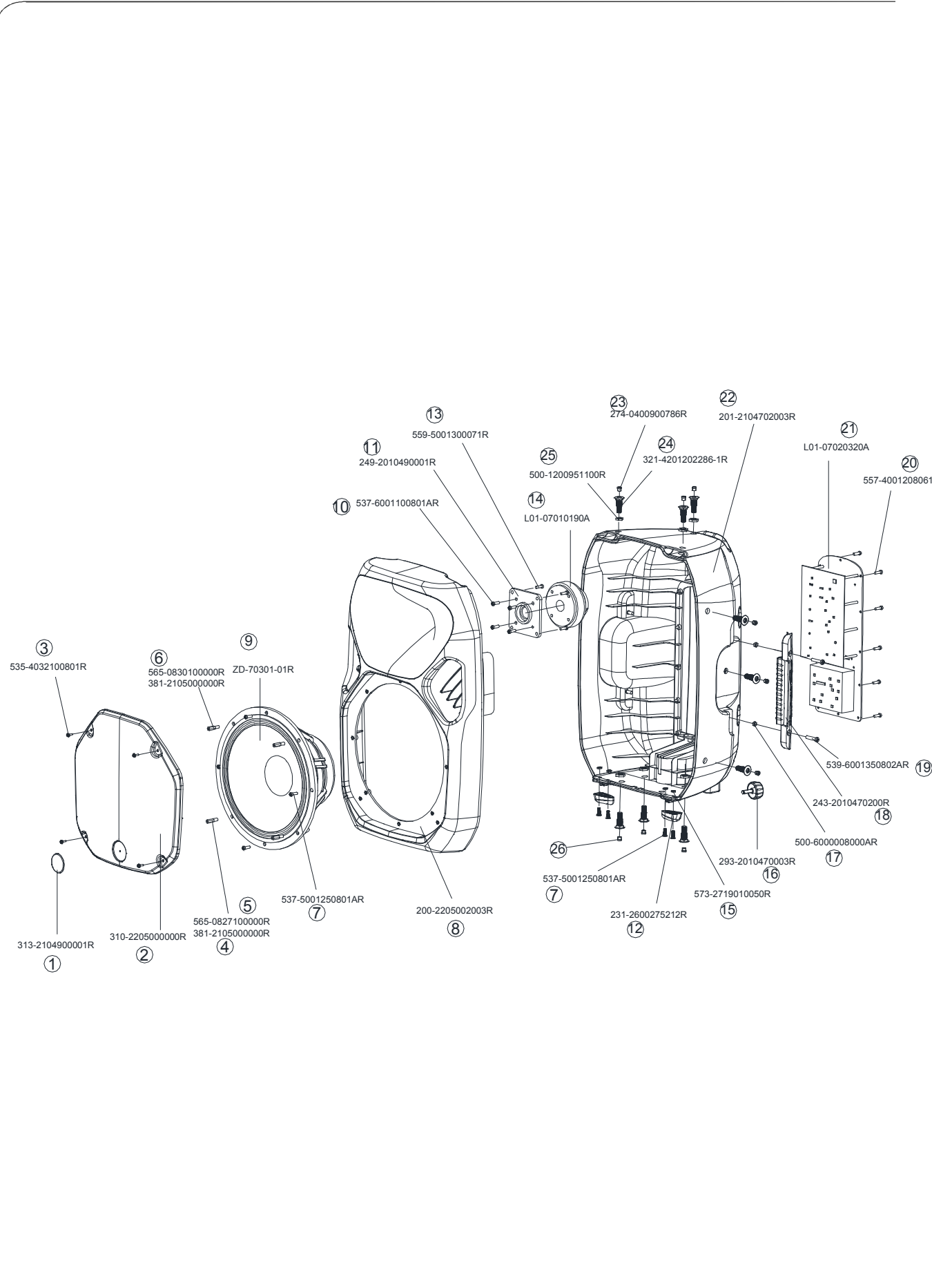
## SPECIFICATION

Model Name	Titan-AX12
System Type	Active 12" 2-way
Frequency Response (+/-3dB)	55Hz-18kHz
Frequency Range (- 10 dB)	50Hz-20kHz
Maximum SPL(peak)(@1m)	128dB
Sensitivity @ 1W / 1m)	98dB
<b>Low Frequency Transducer</b>	
Size (mm / inches)	305mm/12"
Voice-Coil Size (mm / inches)	65mm /2.5"
Rated Impedance	4Ω
LF Power re:AES2-2012	250w
<b>High Frequency Transducer</b>	
HF Driver Type:	Compression Driver
Coil Size (mm / inches)	44mm/1.75"
Exit Size (mm / inches)	25mm/1"
Diaphragm Material	Titanium
Rated Impedance	8Ω
HF Power re:AES2-2012	40W
Nominal Coverage (H x V)	Hybrid Symmetry Horn 100°x80°
Rated Impedance	8Ω
<b>Amplifiers</b>	
Low-Frequency Power Amplifier -Class D, RMS/Peak Watts	150W/4ohm
High- Frequency Power Amplifier RMS(Class D)	50W/8ohm
<b>DSP Controls---D-EQ</b>	
	1:FLAT 2:MONITOR 3:SPEECH 4:BASS 5:PUNCH 6:LIVE
<b>Amplifier Protection</b>	
Amplifier Protection	yes
Power On Protection	yes
Thermal Protection	yes
Low Line Voltage Shut Down	yes
<b>Driver Protection</b>	
DC Protection	yes
Short Protection	yes
Clip Limiter	yes
Limiter Indicator	red LED
Power Indicator	Green LED
<b>Inputs</b>	
Input A – type	Balance
Input Sensitivity	775mv
Maximum Input Level	4v
Input Connector	2*XLR&6.3R( Line/MIC)
Input Impedance	Balance:20K

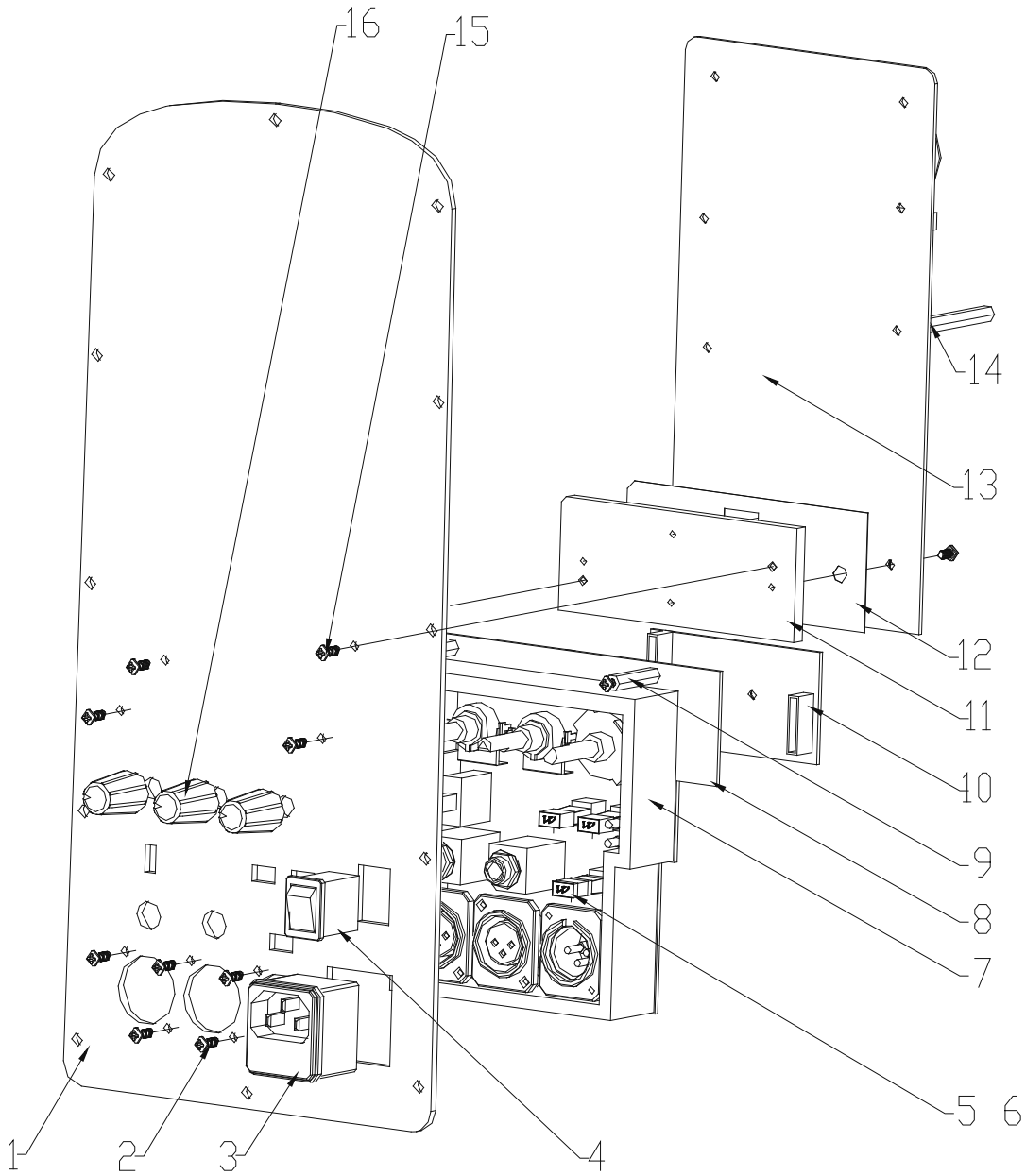
## SPECIFICATION

Line Output	Balance: 20K
Line Output Connector	XLR
Impedance Balanced	
Loop Gain	0dB
AC Power details	
Power Supply	SMPS
AC Power Options	
Power On Indicator	220-240V 50Hz
Rigging / Bracket / Mounting Options	10 M8 threaded inserts including 4 M8 threaded inserts on bottom in OmniMount  Pole-mount receptacle with lock screw  Optional wall-mount bracket
Handles	2 carry handles (one on each side)
Enclosure	
Enclosure Material and finish	Injection Moulded Polypropylene
Colour Options	Black paint
Grille Material & Finish	steel
<b>Dimensions - Unpacked (mm / inches):</b>	
Height	582.7mm/ 22.9in
Width Front	384.6mm/15.1in
Width Rear	384.6mm/15.1in
Depth	318.6mm/12.5in
<b>Dimensions - Packed (mm / inches):</b>	
Height	663mm/26.1in
Width Front	435mm/17.1in
Width Rear	435mm/17.1in
Depth	408mm/16.1in
Net Weight (kg / lbs)	12.4kg / 27.3lbs
Gross Weight (kg / lbs)	15.4kg/33.9lbs

# ASSEMBLY SKETCH



**ASSEMBLY SKETCH**





## ASSEMBLY PARTS LIST

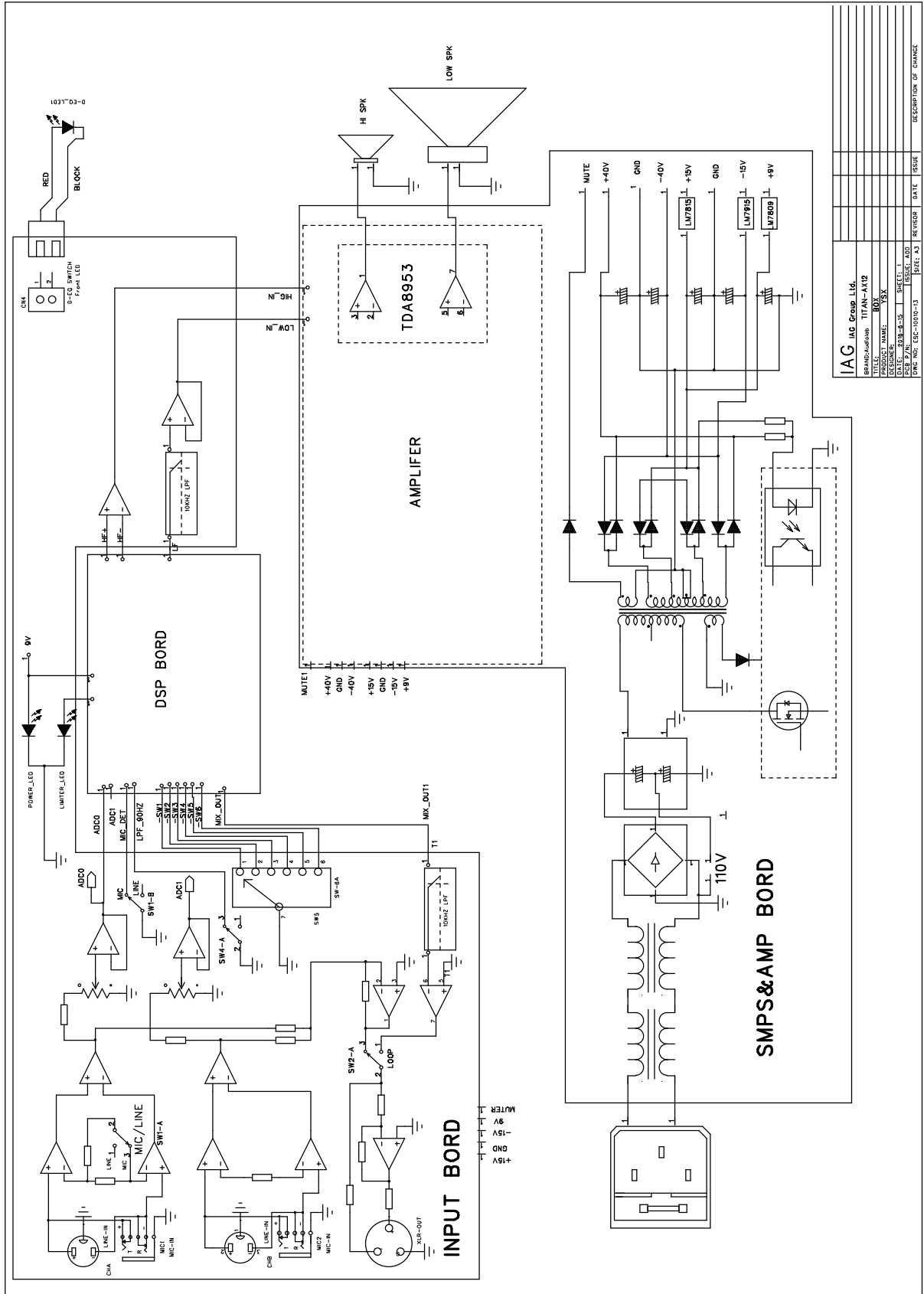
R/N	P/N	PART NAME	DESCRIPTION	QUA
1	313-2104900001R	LOGO PLATE		1
2	310-2205000000R	GRILL	TITAN AX12 BLACK	1
3	535-4032100801R	SCREW	M4X10 BLACK	4
4	381-2105000000R	PVC	φ 10X φ 4X0.8MM	4
5	565-0827100000R	SCREWS	M5*10*M4*15*27.8	2
6	565-0830100000R	SCREWS	M5*10*M4*15*30	2
7	537-5001250801AR	SCREWS	M5*25 BLACK	10
8	200-2205002003R	TITAN AX12 FRONT FRAME	TITAN AX12 BLACK	1
9	ZD-70301-01R	TITAN 12A WOOFER	D-703A	1
10	537-6001100801AR	SCREWS	M6*10 BLACK	4
11	249-2010490001R	CONNECTING BRACKET	96*96*6MM	1
12	231-2600275212R	PLASTIC FOOT	ABS+TPR.	2
13	559-5001300071R	SCREWS	M5*30 BLACK	4
14	L01-07010190A	TWEETER		1
15	573-2719010050R	SCREWS	M5 BLACK	4
16	293-2010470003R	PLASTIC KNOB	ABS BLACK	1
17	500-6000008000AR	LOCKING NUT	M6 BLACK	4
18	243-2010470200R	TITAN12 PLASTIC HANDLE	TITAN12 BLACK HANDLE	2
19	539-6001350802AR	SCREWS	MC(-)6*35 D BLACK	4
20	557-4001208061AR	SCREWS	4.0*20 BLACK	10
21	L01-07020320A	AMPLIFIER		1
22	201-2104702003R	TITAN12 MAIN FRAME	TITAN12 BLACK	0.7
23	274-0400900786R	PLASTIC COVER	M8*5*7.8* φ 4* φ 9 BLACK	10
24	321-4201202286-1R	TITAN15/12 SCREW NUT	M12XM8X42MM BLACK	10
25	500-1200951100R	M12 NUT	M12x9.5mm, BLACK	10
26	534-8001200803AR	SCREWS	M8*20 BLACK	4

## ASSEMBLY PARTS LIST

R/N	P/N	Name	Name, specification	QUA	单位
1	300-1009010001R	TITAN-AX12 Europe panel-A00	Amplifier panel ,A3 black painting ,appearance printing PANTON 427C	1	PCS
			Amplifier panel ,A3 black painting ,appearance printing PANTON 427C		
2	527-3012100811AR	Pan self-tapping screw ,3*10	Pan self-tapping screw ,3*10	6	PCS
3	044-2600000000R	Sockets	Power RF-2004	1	PCS
4	042-1003005000R	Power switch	RL3-421-G-2 BK/BK-P8	1	PCS
5	212-1252000001R	9*5 button	9*5 button	3	PCS
6	212-1252000003R	Button connector	Button connector	3	PCS
7	261-2102114027R	Sealed foam	Sealed foam 102*114.3*26.5mm, Adhesive 3M9448	1	PCS
8	088-1100103681R	PCBA-input panel +DSP panel combination	WHARFEDALE PRO IMPACT-AX12 IPT A00 ALL	1	PCS
9	307-1030000241R	Hexagon copper cylinder	M3*24 hexagon appearance	2	PCS
10	088-1100143681R	PCBA-DSP panel DIP combination	DIP WHARFEDALE PRO IMPACT-AX12 DSP A00 ALL	1	PCS
11	306-1805010000R	Amplifier radiator	K12A radiator (100*40*5MM), environmental	1	PCS
12	274-1020420259R	PC insulator	Transparent PC, 102*42*0.25mm, Adhesive 3212, environmental	1	PCS
13	088-1730010401R	Titan 12D power amplifier panel PCBA(has plugged )Europe	Titan 12D power amplifier panel PCBA(has plugged )	1	PCS
	088-1730014500R	Titan 12D power amplifier panel PCBA(has plugged )USA	Titan 12D power amplifier panel PCBA(has plugged )	1	PCS
14	307-1500300323R	Hexagon iron cylinder		1	PCS
15	537-3000081001R	Pan machine screw	MP(+ )3*8 electrophoresis black D Harden	4	PCS
16	293-2010470001R	Knob	Knob	3	PCS

# SCHEMATIC DIAGRAM

## BOX



IAG Inc Group Ltd.	
BRAND/Model: TITAN-AX12	
TITLE: BOX	
DESIGNER: IAG	
DATE: 2013-10-10	SHEET: 1/1
TYPE NO: ESC-1000-13	REV: A3
REVISOR	DATE
ISSUE	DESCRIPTION OF CHANGE

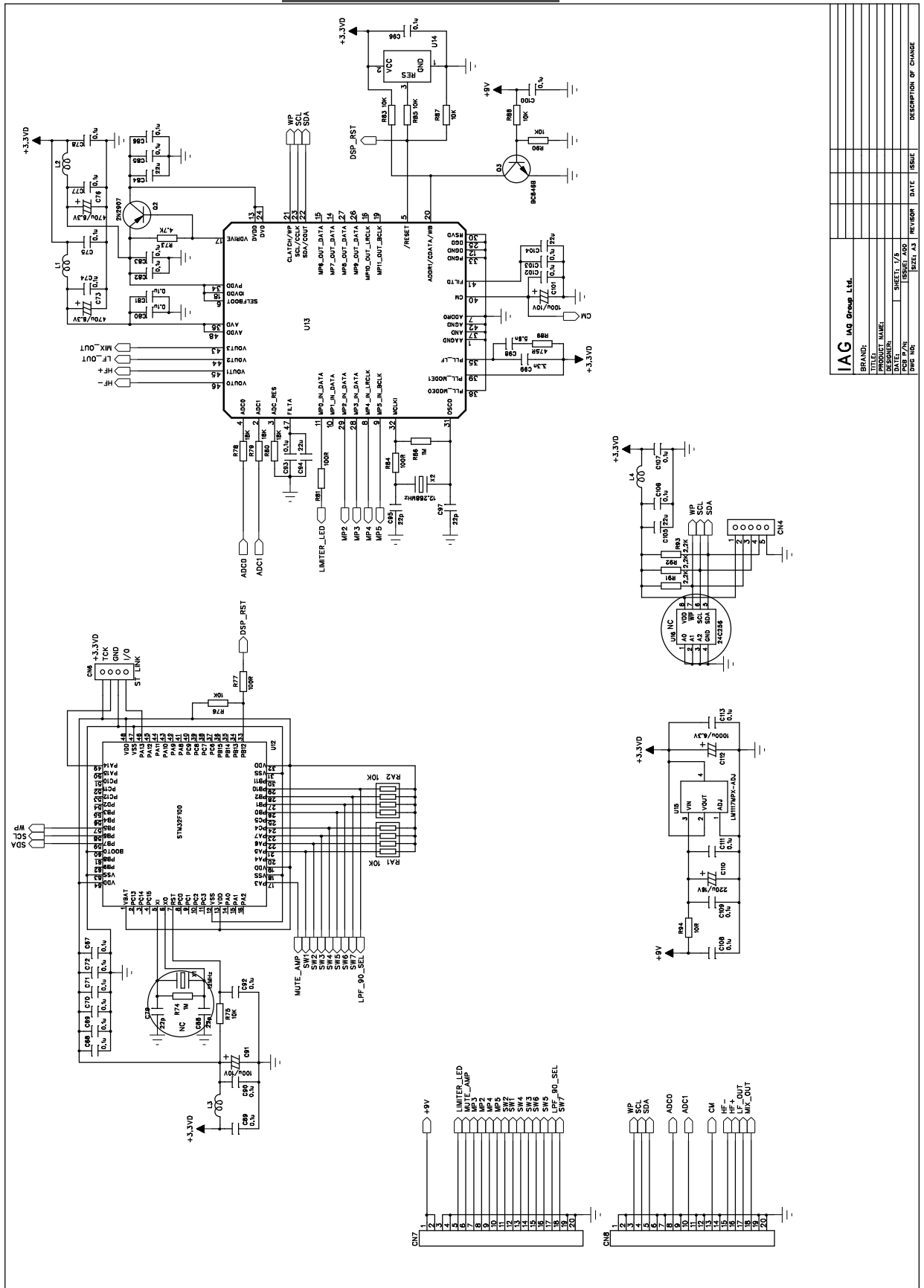






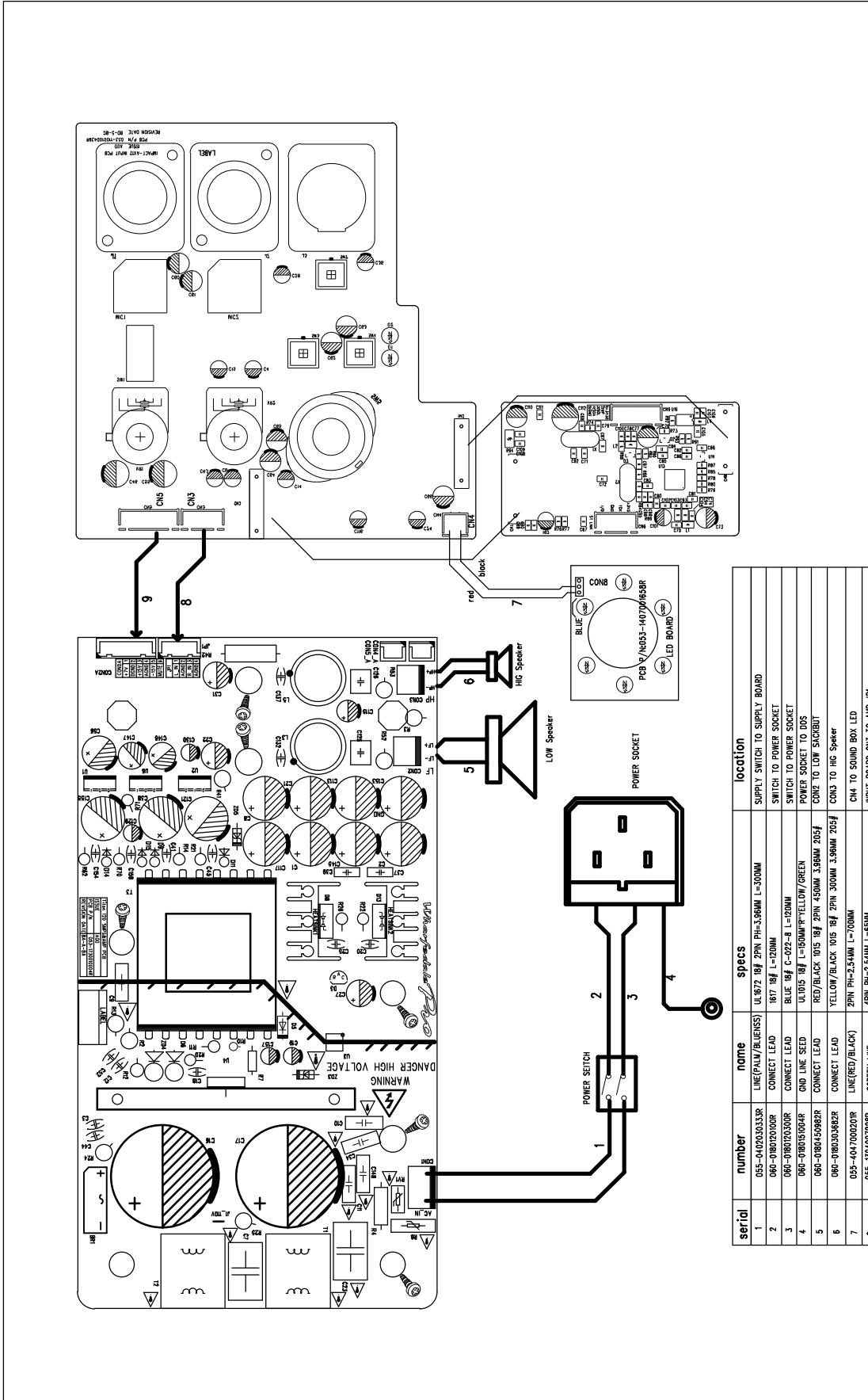
# SCHEMATIC DIAGRAM

## DSP



IAG IAG Group Ltd.			
BRAND:	PROJECT NAME:	DATE:	DESCRIPTION OF CHANGE:
DESIGNER:	REVISION:	ISSUE:	
CHECKER:	DATE:	ISSUE:	
DWG NO:	REV. A3	REVISION:	

# WIRING DIAGRAM



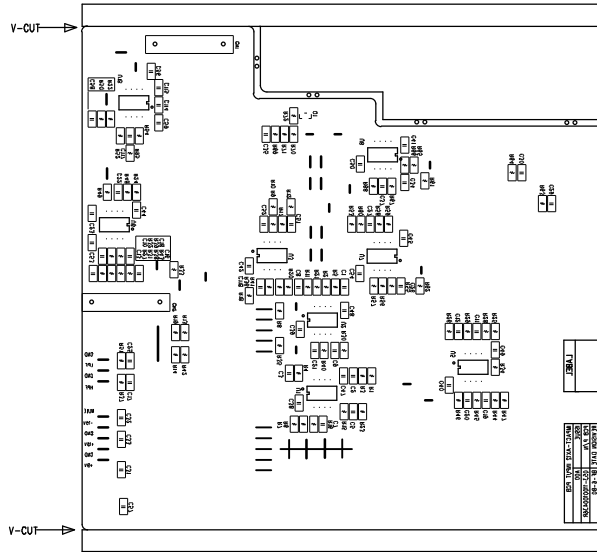
<b>IAG IAG Group Ltd.</b>			
BRAND:	WIP	DESIGNER:	YXY
TITLE:	PCB BOARD	DATE:	2016-7-6
PRODUCT NAME:	TITAN-AX12	ISSUE:	A00
PCB P/N:		REVISOR:	
DWG NO:	EPC-100001-30	DATE:	
ISSUE:		DESCRIPTION OF CHANGE:	





# SILKSCREEN OF TOP/BOTTOM

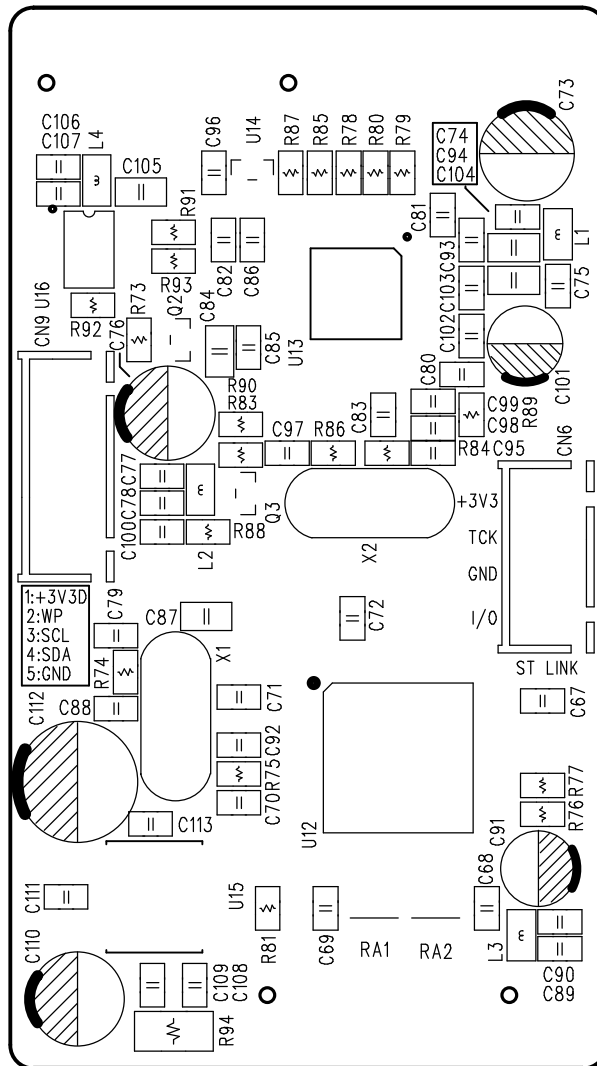
LAYER STACKUP	
BOTTOM ROUTING	
BOTTOM SILKSCREEN	
MATERIAL	FR-4/2.0
COPPER WEIGHT	2 OZ
LAYERS	2 LAYERS
MINIMUM WIDTH	0.5 mm
MINIMUM GAP	0.5 mm
PLATING	THICKENED
VIA	UNPLATED
SILKSCREEN	GREEN
RESIST	TOP GREEN
	BOT GREEN



**IAG** IAG Group Ltd.

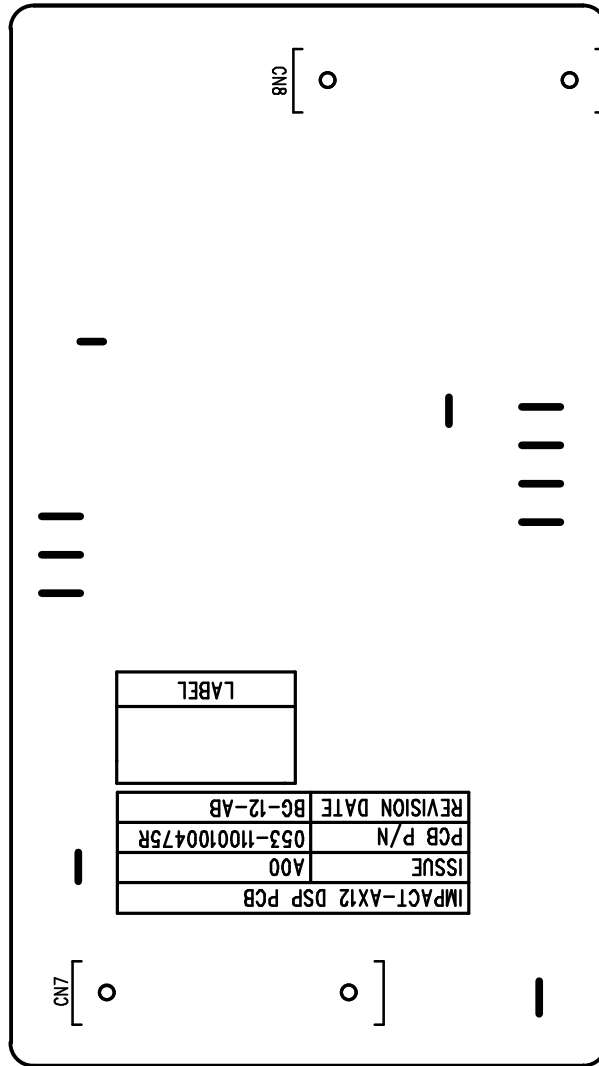
BRAND:	INPUT PCB BOARD
TITLE:	PRODUCT NAME:IMPACT-AX12 INPUT
DESIGNER:	07A
DATE:	07.06.13
ISSUE:	ISSUE: A00
PCB P/N:	02-107004-30R
DWG. NO.:	EPC-10009-13
REVISOR:	DATE
ISSUE:	DESCRIPTION OF CHANGE

# SILKSCREEN OF TOP/BOTTOM



<b>IAG</b> IAG Group Ltd.	
BRAND: <i>Wiberg</i>	TITLE: PCB BOARD
PRODUCT NAME: TITAN-AX12	DESIGNER: YSX
DATE: 2016-7-6	ISSUE: A00
PCB P/N:	REVISOR:
DWG NO: EPC-00901-30	DATE:
	ISSUE:
	DESCRIPTION OF CHANGE:

# SILKSCREEN OF TOP/BOTTOM



<b>IAG</b> IAG Group Ltd.		REVISOR	DATE	ISSUE	DESCRIPTION OF CHANGE
BRAND:	DAEWOO				
TITLE:	PCB BOARD				
PRODUCT NAME:	TITAN-AX12				
DESIGNER:	YSK				
DATE:	2016-7-6				
PCB P/N:					
DWG NO.:	EPC-00001-30				





## MAINTENANCE ALIGNMENT PROCEDURE

S/N	Test description		Test status	Specification requirement	Test result
1	Rated power	woofer Rated power	250Hz input, horn output THD=1%	150W/4 ohms	160W
		Tweeter Rated power	10KHz input, horn output THD=1%	50W/8 ohms	60W
2	Frequency response	Frequency response( woofer)	20Hz-2KHz @1W output, impedance 4ohms	.+1.0/-3.0dB	20Hz--2.3KHz
		Frequency response( Tweeter)	1.8KHz-20KHz @1W output, impedance 8ohms	.+1.0/-3.0dB	1.6KHz-20KHz
3	Input sensitivity	Input sensitivity ( woofer)	CH/A 250Hz input, switch MIC horn output THD=1%	30MV	
		Input sensitivity ( woofer)	CH/A 250Hz input, switch Line horn output THD=1%	0.5V	
		Input sensitivity ( Tweeter)	CH/B 10KHz input, horn output THD=1%	0.5V	
4	BALANCED(OUTPUT)		CH/B 90Hz/ 0.5V input, LOOP press	0.5V	
			CH/B 90Hz/ 0.5V input, LOOP press HPF press D-EQ	1V	
			CH/B 90Hz/ 0.5V input, LOOP press HPF press D-EQ	0.3V	
5	THD @20Hz-2.0KHz	woofer output	CH/B Line TRS in, D-EQ 1# SPK output 40W	Less than 0.4%	<0.3
	THD @2.3KHz-20KHz	Tweeter output	CH/B Line TRS in, D-EQ 1# SPK output 10W	Less than 0.4%	<0.3
6	S/N, 20-22KHz band pass filter		Line TRS/RCA in, output 1W, volume gain 0dB	Greater than 75dB	62
7	S/N, 20-22KHz band pass filter		Line TRS/RCA in, output THD=1%	Greater than 82dB	82
8	L/R Polarity		Line TRS 1kHz input	no reverse	na
9	Mic Max. Voltage Gain		Mic input -50dBV, volume Max	greater then 90dB	75
10	Line Max. Voltage Gain		Line input -20dBV, volume Max	greater then 45dB	45.7
11	DC Offset		No signal input	Less than 50mV	7.2
12	Noise level		all VR Max. measure at Speaker output	less than -50dBU	-60
13	FFT		No signal input, Gain or Volume set to Max.	less than -70dBV	-60
14	Noise listening		VR Max. Hum & White noise	No abnormal	ok
15	autoexcitation/screechy test		adjust volume	No abnormal	ok
16	AMP Mode and Bypass switch .has Pop noise or not		Operate AMP Mode and Bypass	No abnormal	ok
17	on/off pop noise		with 264V mains line, 1/3 power	No abnormal	ok

## ASSEMBLY PARTS LIST

# Titan-AX12 ELECTRONIC PARTS LIST

R/N	R/N	P/N	PART NAME	DESCRIPTION	QIA	LOCATION	RE
1	1	088-1730010401R	Titan ax12 Supply+AMP PCBA DIP ASSEMBLY)	Titan ax12 Supply+AMP PCBA DIP ASSEMBLY)	1.00		
2	2	001-0220107050R	Resistance	2.2Ω/1W J	1.00	R3	
3	2	001-0393108050R	Resistance	39K 2W 5%	2.00	R24-25	
4	2	001-1000308050R	Resistance	10Ω 2W J	2.00	R41-42	
5	2	001-1001306050R	Resistance	100Ω 1/2W 5%	6.00	R14 R21-22 R26 R62 R69	
6	2	001-1005107050R	Resistance	1M 1W 5%	1.00	R4	
7	2	001-2006205010R	Resistance	2M0 1/4W 1%	2.00	R7.10	
8	2	001-2200107050R	Resistance	22Ω/1W J	2.00	R52.R53	
9	2	001-2200706050R	Resistance	22Ω、1/2W 5%	1.00	R11	
10	2	001-3902105050R	Resistance	3.9K 1/4W J	1.00	R70	
11	2	001-4700307050R	Resistance	47Ω 1W J	1.00	R12	
12	2	001-5100206010R	Resistance	51Ω 1/2W 1%	1.00	R20	
13	2	001-8203208050R	Resistance	82K 2W	2.00	R2.13	
14	2	004-1113010400R	Voltage sens Resistance	TVR-07471-D 400V	1.00	RV1	
15	2	004-4448010000R	Temp sens Resistance	NTC 5R Φ 13MM (5D-13)	1.00	R8	
16	2	006-1004061194R	capacitance	10uF 100V 105° C	1.00	C53	
17	2	006-1004151163R	capacitance	10uF/50V 5*11 PH=2MM SK 105°C	2.00	C15 C67	
18	2	006-1011081153R	capacitance	SM 100uF 35V 10%	3.00	C22 C86-87	
19	2	006-1017081263R	capacitance	100uF/50V 20% PH=5 Φ 8*11.5 ESR YXF RuBycon	2.00	C18.23	
20	2	006-1024133063R	capacitance	1000U/50V 105C ±20% 13*30MM	9.00	C1-2 C6 C17 C51 C54 C85 C93 C95	
21	2	006-4700051251R	capacitance	47uF 35V 105°C φ 5.1*11.5	2.00	C69 C97	
22	2	006-4714081133AR	capacitance	470U/16V ±20% φ 8*11.5MM Lelon REA 85°C	1.00	C44	
23	2	006-4714122063R	capacitance	470U/50V 105C 12.5*20MM ±20%	2.00	C29 C58	
24	2	006-4714253503R	capacitance	470U/200V 25*35MM ±20% 105C	2.00	C12.13	
25	2	008-1001100004R	capacitance	100PF/1000V	1.00	C14	
26	2	008-1006040006R	capacitance	102M Y1 400V PH=10MM +/-20%	1.00	C7	
27	2	008-1021040005R	capacitance	102PF 400V M D:7.5 T:4.5 PH=10mm	4.00	C8-9.26.88	
28	2	008-1021300016R	capacitance	102/1000V ?0%	4.00	C3.10.34.41	
29	2	008-2201050015R	capacitance	220PF/500V	6.00	C16 C20 C32 C35 C94 C98	
30	2	008-3304025005R	capacitance	MKP334/275VAC 20%	2.00	C5.C19	
31	2	014-1040311028R	capacitance	MKS2 100nF 100V 10%	2.00	C28 C30	
32	2	014-1530200002R	capacitance	AMZ 15N-63V-5%	2.00	C71.77	
33	2	016-4740810001R	capacitance	0.47uF 63V 10% PH=5mm WIMA MKS2C034701C00KSSD	2.00	C62-63	
34	2	017-0120000018R	IC	TL431BCLPR TI TO-92	1.00	D1	
35	2	017-0190000000R	IC	NJM7815FA TO-220F(JRC)	1.00	U6	
36	2	017-1275000000R	IC	TOP261YN PI TO-220-7C	1.00	U4	
37	2	017-1830000000R	IC	KIA7915 TO-220 KEC	1.00	U2	
38	2	018-9807809111R	Transistor	L7809CV TO-220 ST	1.00	U1	
39	2	022-3040041396R	Transformer	EC40 out ±39V ±15V	1.00	T3	
40	2	026-2205000200R	Inductor	22U ±20% 17*20MM	2.00	L1.L2	
41	2	026-8595003210R	Inductor	8.5UH 20% L=21MM	2.00	T1 T2	
42	2	034-1001501110R	Rectifier bridge	KBL410	1.00	BR1	
43	2	035-0010029053R	magneticbead	inner D1.6 Ext D ∅ 4	12.00	BR1.D3.6.7.9.12.13.14	
44	2	056-0102224400R	Extension Socker	JS3962-2P-WAFER	2.00	CON2 CON3	
45	2	056-0103003300R	Extension Socker	2PIN 3.96PH(KAM-15-5)	1.00	CON1	
46	2	056-4102220000R	Extension Socker	JS-1001-02	1.00	CON4_A	
47	2	056-4104221100R	Extension Socker	DJ2802-4P	1.00	JP1	
48	2	056-4106220000R	Extension Socker	DJ2810-06	1.00	CON2A	



## ASSEMBLY PARTS LIST

49	2	067-1100208015R	Diode	HER308 DO-201	1.00	D4	
50	2	067-2200107000R	high speed Diode	HER107 JAL	3.00	D3 D13 D14	
51	2	067-2200207000R	Diode	HER204	2.00	D7.D9	
52	2	067-2201620000R	Diode	F16C20C mospec TO-220	2.00	D6 D12	
53	2	067-3304740000R	Diode	1N4740A (1W10V) FAIRCHILD	1.00	ZD3	
54	2	067-6600200015R	Diode	1.5KE200A DO-201	1.00	ZD4	
55	2	082-0100000000R	optocoupler	PC-17K1 KODENSHI	1.00	U3	
56	2	263-0500090062R	EVA	500*9mm,T=6mm,	0.02	C12 TO C13	
57	2	306-1102000002R	HEAT SINK	C102.10M	2.00	D6.D12	
58	2	306-1730010000R	TITAN12D HEAT SINK	50*70*6mm	1.00	LOCK U4	
59	2	500-3050240800AR	NUT	M3	1.00	LOCK U4	
60	2	591-0003008400R	Screw	M3*8mm nickel	2.00		
61	2	591-0003008500R	Screw	M3*8 black	2.00		
62	2	591-0003014500R	Screw	M3*14 black	1.00		
63	2	088-1730010400R	Titan 12D Supply+AMP PCBA SMT ASSEMBL	Titan 12D Supply+AMP PCBA SMT ASSEMBLY)	1.00		
64	3	002-0000032100R	Resistance	0R 1% 1/8W 0805	1.00	R16	
65	3	002-1000033050R	Resistance	1206 10R 1/8W 5%	3.00	R6 R50.R51	
66	3	002-1001022010R	Resistance	0805 100Ω 1/10W F	2.00	R45.R47	
67	3	002-1002032010R	Resistance	1K 1/8W 1% 0805	2.00	R28.35	
68	3	002-1003032010R	Resistance	10KΩ 1/8W 1% 0805	1.00	R55	
69	3	002-1005033050R	Resistance	SMD 1206 1M0 1/8W 5%	4.00	R23 R27 R56-57	
70	3	002-1503032010R	Resistance	15K 1/8W 1% 0805	1.00	R49	
71	3	002-1654022010R	Resistance	0805 165K 1/10W 1% ROHS	1.00	R5	
72	3	002-1801032010R	Resistance	180Ω 1/8W 1% 0805	1.00	R34	
73	3	002-1804032010R	Resistance	180K 1/8W 1% 0805	1.00	R29	
74	3	002-2003032010R	Resistance	20KΩ 1/8W 1% 0805	3.00	R39.R40.R46	
75	3	002-2202032010R	Resistance	SMD 2.2K 1/8W 1% 0805	1.00	R63	
76	3	002-2203032011R	Resistance	220K 1/8W 0805 1%	1.00	R17	
77	3	002-2492032010R	Resistance	0805 2.49K 1/8W 1%	1.00	R36	
78	3	002-3002032010R	Resistance	0805 3K 1/8W ±1%	1.00	R1	
79	3	002-3003032010R	Resistance	30KΩ 1/8W 1% 0805	3.00	R32.43.44	
80	3	002-3603032010R	Resistance	36KΩ 1/8W 1% 0805	1.00	R68	
81	3	002-4702032010R	Resistance	4.7K 1/8W 1% 0805	3.00	R9 R15 R48	
82	3	002-4704032010R	Resistance	470K 1/8W 1% 0805	1.00	R67	
83	3	002-4992022010R	Resistance	0805 4.99K 1/10W F	1.00	R54	
84	3	002-5602032010R	Resistance	5.6KΩ 1/8W 1% 0805	4.00	R37-38 R60-61	
85	3	002-6809033010R	Resistance	6R8 1206 1% 50V 1/8W	1.00	R19	
86	3	002-7502032010R	Resistance	7.5KΩ 1/8W 1% 0805	1.00	R33	
87	3	007-1001002060R	Resistance	100NF/50V 0805M	13.00	C4 C21 C11 C24-25 C31 C33 C42-43 C89 C92 C96 C99	
88	3	007-1002052060QR	capacitance	SMD 1nF 50V 5% 0805	4.00	C36 C40 C74-75	
89	3	007-1004052060R	capacitance	100nF 50V 5% 0805	2.00	C83 C84	
90	3	007-1004053090R	capacitance	SMD 100NF 100V 5% 1206 X7R	13.00	C37 C45 C50 C52 C56 C59-61 C65-66 C70 C90 C91	
91	3	007-1005062090R	capacitance	SMD 1UF/25V 0805 10%	4.00	C46 C48-49 C76	
92	3	007-2201052090R	capacitance	CAP COG 220PF/100V 0805 5% ROHS	6.00	C47 C78-79 C80-81 C82	
93	3	007-2204063060R	capacitance	SMD 220nF 50V 10% 1206	2.00	C55 C73	
94	3	007-4704062070R	capacitance	470NF/50V 0805 20%	1.00	C57	
95	3	007-6800052060R	capacitance	68pF/50V 5% X7R 0805	1.00	C27	
96	3	017-0410000019R	ic	TDA8954TH :NXP HSOP24	1.00	U5	

# ELECTRONIC PARTS LIST

97	3	018-2905551227R	Transistor	2N5551S SOT-23 KEC	1.00	Q13
98	3	053-173001A004R	Titan 12D Supply+AMP PCB	A01 198*116mm 1.6T FR-4 2L 2OZ 1	1.00	
99	3	067-2204148110R	diode	ST LL4148 SMD1206	3.00	D2 D5 D11
100	3	067-3300056110R	diode	5.6V 1/2W 1206	1.00	D8
101	1	088-1009010881R	PCBA-LED DIP assomblly	DIP WHARFEDALE PRO Titan-AX12 LED A00 ALL	1.00	CN4
102	2	001-1002105050R	Resistance	1K 1/4W J	6.00	R113 115 117 119 121 123
103	2	019-0506123001R	LED	φ5 BLUE/RED Common cathode	6.00	LED1-6
104	2	053-1407001658R	LED PCB	ONE SIDE Green 6.4*6.4CM	1.00	
105	1	088-1100903681-1R	PCBA-INPUD+DSP Assomliy	WHARFEDALE PRO Titan-AX12 IPT A00 ALL		
106	2	307-1030000241R	NUT	M3*24	2.00	
107	2	307-1300800141R	NUT	M3*8, L=14.5mm	1.00	
108	2	500-3050240300AR	NUT	M3 NI	1.00	
109	2	537-3001060301-1R	Sccrew	M3*6/ nicke	2.00	
110	2	591-0003008400R	Sccrew	M3*8mm nickel	1.00	
111	2	088-1100123681R	PCBA-input DIP Assomblly			
112	3	006-1004051163R	capacitance	SM10 μF 50V 20%	9.00	C4 C6 C14-15 C24 C28 C36 C43 C116
113	3	006-1014061153AR	capacitance	100UF/25V 6.3*11 20%105°C3.0MM	9.00	C46 C55 C60-66
114	3	019-0311122001R	LED	204HD/E-A RED Φ3	1.00	D1
115	3	019-0322122001R	LED	LED 204GD/E-A Green Φ3	1.00	D2
116	3	020-1032120325R	Volume	RD16K12D0094-10K15Ax2	2.00	VR1-2
117	3	040-1400000000R	shwitch	JPS2281EA	1.00	SW2-4
118	3	044-6670000000R	XLR jack	3PIN 5MM LA1099-T	3.00	J3
119	3	048-1700000000R	CONNECTOR	NYS139 K3Y1	2.00	J1-2
120	3	049-2102224111R	Extension Socker	PHONE JY6351-02-250	2.00	MIC1-2
121	3	055-0206010133R	fiat cable 6pin	PH=2.54mm24AWG L=100mm	1.00	CN5
122	3	055-1304007228R	fiat cable 4pin	L=65MM PH=2.5MM 28#	1.00	CN3
123	3	056-4202220000R	Extension Socker	2P PH=2.54MM	1.00	CN4
124	3	057-1000422201R	Extension Socker	2*10PIN SMD PH=2.00mm	2.00	CN1-2
125	3	089-0500000012R	shwitch	SS-22F20-G12	1.00	SW1
126	3	097-0701200000R	shwitch	SR2512-0206-26F1A-C9-5	1.00	SW5
127	3	221-1472410000R	LED POST	M5*22.5mm, WHITE	2.00	D1 D2
128	3	826-0301501410R	Insulation sheet	RED,SIZE:D15.8*14.6*1.0mm,	3.00	J1 J2,J3
129	3	088-1100113681R	PCBA-INPUD SMT Assomblly	SMT WHARFEDALE PRO DVP(titan)-AX12 IPT A00 ALL	1.00	
130	4	002-0000032010R	Resistance	0Ω 1/8W 1%	3.00	R9 R36 R69
131	4	002-1001022010R	Resistance	0805 100Ω 1/10W F	7.00	R13 R33 R42 R50 R52-53 R59
132	4	002-1002022010R	Resistance	0805 1K 1/10W F	6.00	R1 R8 R23 R25 R35 R47
133	4	002-1003022010R	Resistance	0805 10K 1/10W F	19.00	R4 R16-17 R20 R22 R29 R37 R45 R51 R56-58
134	4	002-2201032010R	Resistance	220Ω 1/8W 1% 0805	1.00	R6
135	4	002-2203022050R	Resistance	22KΩ 5% 1/10W 0805	4.00	R3 R15 R28 R44
136	4	002-2203032011R	Resistance	220K 1/8W 0805 1%	3.00	R7 R34 R24
137	4	002-3302032010R	Resistance	3.3K 1/8W 1% 0805	3.00	R31 R38 R95
138	4	002-4701032010R	Resistance	470Ω 1/8W 1% 0805	2.00	R32 R39
139	4	002-4702032010R	Resistance	4.7K 1/8W 1% 0805	18.00	R2 R5 R10-12 R18 R21 R26 R30 R40-41 R46
140	4	002-5102032010R	Resistance	5.1KΩ 1/8W 1% 0805	2.00	R27 R43
141	4	002-5602032010R	Resistance	5.6KΩ 1/8W 1% 0805	2.00	R70-71
142	4	002-8202032010R	Resistance	8.2K 1/8W 1% 0805	1.00	R54
143	4	007-1001052060R	capacitance	100PF50V 5% NPO 0805	21.00	C1-3 C5 C7-9 C11-12 C17 C19-21 C25-27
144	4	007-1002052050R	capacitance	10nF/50V 5% X7R 0805	3.00	C57-59
145	4	007-1004052060R	capacitance	100nF 50V 5% 0805	21.00	C31-33 C35 C38-42 C44-45 C47-51 C53-54
146	4	007-1500062060R	capacitance	150PF/50V 7% 0805	2.00	C37 C22
147	4	007-4701052090R	capacitance	CAP 470PF/100V COG 0805 5% ROHS	2.00	C23 C34
148	4	007-6801052060QR	capacitance	680P 5% 50V	4.00	C10 C13 C16 C18
149	4	017-9090000000R	IC	AZ4580 MTR-E1 AAC(BCD)	8.00	U1-3,U5-8, U18
150	4	018-1400846227R	Transistor	BC846B SOT-23 NXP	1.00	Q1
151	4	053-1100100436R	PCB-input board	128.3*122.7*1.6MM FR4 2L 1OZ green IPT A00	1.00	
152	2	088-1100143681R	PCBA-DSP DIP assomblly	PCBA-DSP DIP assomblly	1.00	

# ELECTRONIC PARTS LIST

153	3	006-1014051123-1R	capacitance	100UF 10V 85°C, KW NICHICON 20% Φ5*11MM	2.00	C91 C101
154	3	006-1024081213R	capacitance	1000uF,6.3V,105DegC,8mmDia,12mmH,3.5mmPitch,Le on ,20%	1.00	C112
155	3	006-2214061233R	capacitance	220UF/16V (φ6*12)	1.00	C110
156	3	006-4717030201R	capacitance	470uF 6.3V ±20% φ6.3*11 PH2.5 105°C Su'scon SK	2.00	C73 C76
157	3	056-2110551134R	Extension Socker	2*10Pin PH=2.0mm H=4.5mm SMT2207CS-20G-SM-45-	PCB2.00	CN7-8
158	3	056-4104003300R	Extension Socker	4PIN PH=2.54mm	1.00	CN6
159	3	056-4105221100R	Extension Socker	DJ2802-05	1.00	CN9
160	3	059-1228801110R	Oscillator	12.288MHz ± 22PPM,3PIN	1.00	X2
161	3	088-1100913681R	PCBA-DSP SMT assmblly	SMT WHARFEDALE PRO Titan-AX12 DSP A00 ALL	1.00	
162	4	002-1000011010R	Resistance	10K 1% 0603 50V	7.00	R75-76 R83 R85 R87-88 R90
163	4	002-1000011050R	Resistance	100R 0603 5% 50V	4.00	R77 R81 R82 R84
164	4	002-1000033050R	Resistance	1206 10R 1/8W 5%	1.00	R94
165	4	002-1005021010R	Resistance	RES 1M OHM 1/10W 1% 0603	1.00	R86
166	4	002-1803071010R	Resistance	18K 0603 1% 1/16W	3.00	R78-80
167	4	002-2202021010R	Resistance	RES 2.2K OHM 1/10W 1% 0603	3.00	R91-93
168	4	002-4702021010R	Resistance	RES 4.7K OHM 1/10W 1% 0603	1.00	R73
169	4	002-4750031010R	Resistance	475R 0603 50V 1%	1.00	R89
170	4	003-1003084005R	Resistance	10KΩ 4IN1206	2.00	RA1-2
171	4	007-0106051040R	capacitance	CAP CER 0.1UF 25V +/-5% 0603 X7R	30.00	C67-72 C74-75 C77-78 C80-83 C85-86 C89-90 C92-93 C96 C102-103 C106-109 C111 C113 C100
172	4	007-2200031061R	capacitance	0603 22P/50V 5% NPO	2.00	C95 C97
173	4	007-2206052010R	capacitance	0805 22U/6.3V X5R 20%	4.00	C84 C94 C104-105
174	4	007-3302051050R	capacitance	GRM188R71H332KA01D(MURATA)	1.00	C99
175	4	007-4702051060R	capacitance	0603 4.7nF 5% 50V	1.00	C98
176	4	017-1068000000R	IC	LD1117DT33TR ST	1.00	U15
177	4	017-1406000000R	IC	ADAU1701,48_Lead LQPF ANALOG DEVICES	1.00	U13
178	4	017-1408000000R	IC	MAX809STRG IC SOT ON Semiconductor	1.00	U14
179	4	017-1472000000R	IC	STM32F100R8T6B: LQFP64ST	1.00	U12
180	4	018-1400846227R	Transistor	BC846B SOT-23 NXP	1.00	Q3
181	4	018-4302907227AR	Transistor	MMBT2907ALT1G SOT-23 ON	1.00	Q2
182	4	035-1003062051R	magnetic bead	1000ohm/100MHz 0805 BLM21BD102SN1D	4.00	L1-4
183	4	053-1100900475R	PCB-DSP WHARFEDALE	150.4*157.5*1.6MM FR4 2L 1OZ DSP A00 8joint	1.00	
184	1	042-1003005000R	POWER SWITCH	RL3-421-G-2 BK/BK-P8	1.0	
185	1	031-2200507121HR	FUSE	T2A/250V 213 5*20MM LITTELFUSE	1.0	
186	1	044-2600000000R	POWER SOCK	RF-2004	1.0	
187	1	055-0403000333R	Wire	UL1672 18# 2PIN PH=3.96MM L=300MM	1.0	
188	1	060-0180120100R	Wire	brown 1617#18 L=120MM	1.0	
189	1	060-0180120300R	Wire	blue 18# C-022-8 L=120MM	1.0	
190	1	060-0180151004R	Ground Wire	UL1015-18# 150 R	1.0	
191	1	263-0185051856R	heat silica gel	TP150/H25-T05系列 18 5X18 5X0.5mm t. 1.5Wmk	1.0	U5
192	1	300-1730680000R	panel	Titan12D A3	1.0	
193	1	306-1730680001R	heat sink	100*40*5MM TITAN 12D	1.0	
194	1	307-1030000241R	nut	M3*24	2.0	
195	1	421-1649010000R	ground paster	Φ7.3*0.1mm,	1.0	
196	1	500-3050240300AR	nut	M3 NI	1.0	
197	1	517-3000000300AR	spring pad	M3 Zn	5.0	
198	1	527-3012100811AR	screw	SP(+)*3*10 DC H black	7.0	
199	1	537-3000081001R	screw	M3*8/ black	3.0	
200	1	537-3001060301-1R	screw	M3*6/ni	2.0	
201	1	537-3001080601AR	screw	M3*8 black	7.0	
202	1	591-0003008400R	screw	M3*8mm ni	2.0	

## COUNTRY BOM DEVIATION

ITEM	UNIT CODE	P/N	PART NAME	DESCRIPTION	QTY	UNIT	COUNTRY
1	WP-100901-01A	L01-07020320A	AMP	Amplifier Active FG	1	PCS	CH
		062-5330000101R	Power cord	PHP-304&PHS301R RVV3G0.75mm2	1		
		031-2200507121HR	FUSE	T2A 250V 5*20MM UL LITTLE FUSE	1		
		088-1730010401R	Power Supply	Power Supply pcb assembly	1		
2	WP-100901-02A	L01-07020321A	AMP	Amplifier Active US	1	PCS	USA
		062-1330000101R	Power cord	18/3C PHP-301&PHS-301&SJTAWG	1		
		031-2200512121R	FUSE	T4A 250V 5*20MM UL LITTLE FUSE	1		
		088-1730014500R	Power Supply	Power Supply pcb assembly	1		
3	WP-100901-03A	L01-07020320A	AMP	Amplifier Active FG	1	PCS	UK
		062-3330000101R	Power cord	Black,H03VV-F3G 0.75mm ,L=1.8M	1		
		031-2200507121HR	FUSE	T2A 250V 5*20MM UL LITTLE FUSE	1		
		088-1730010401R	Power Supply	Power Supply pcb assembly	1		
4	WP-100901-05A	L01-07020320A	AMP	Amplifier Active FG	1	PCS	Australia
		062-6330000101R	Power cord	Black,VDEH05VV-F3*0.75MM2 L=1.8M	1		
		031-2200507121HR	FUSE	T2A 250V 5*20MM UL LITTLE FUSE	1		
		088-1730010401R	Power Supply	Power Supply pcb assembly	1		
5	WP-100901-07A	L01-07020320A	AMP	Amplifier Active FG	1	PCS	FG
		062-2330000101R	Power cord	Black,H05VV-F3G0.75mm2,L=1.8M	1		
		031-2200507121HR	FUSE	T2A 250V 5*20MM UL LITTLE FUSE	1		
		088-1730010401R	Power Supply	Power Supply pcb assembly	1		
6	WP-100901-14A	L01-07020320A	AMP	Amplifier Active FG	1	PCS	SA
		062-8330000100R	Power cord	H03VV-F3G 1.0MM2 L=1.8M	1		
		031-2200507121HR	FUSE	T2A 250V 5*20MM UL LITTLE FUSE	1		
		088-1730010401R	Power Supply	Power Supply pcb assembly	1		



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