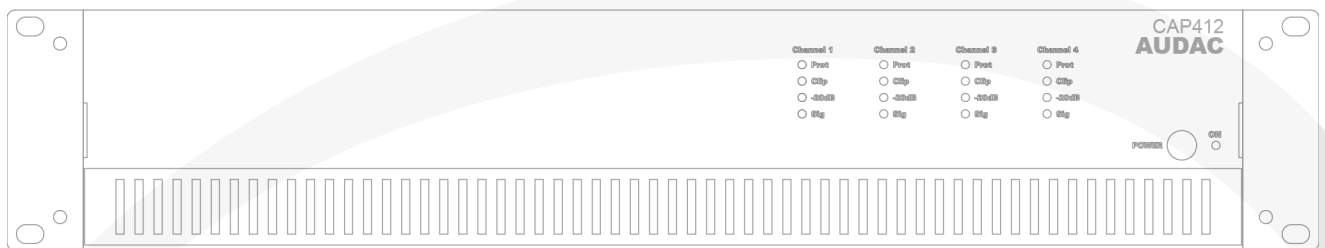


CAP412

Service Manual

V1.0



www.audac.eu

Service Manual

CAP412

Professional 100V multi-channel power amplifier. The CAP412 offers four channels and has an output power of 120 Watt. This way, A high efficiency and reliability of the device is achieved by using switching power supplies in combination with Class-D amplifier technology. A temperature controlled fan constantly keeps all parts within the right operation range while avoiding excessive buzz. A built-in multipurpose protection circuit protects against DC malfunction, short circuit, overheating, overload and limits the signal when necessary.

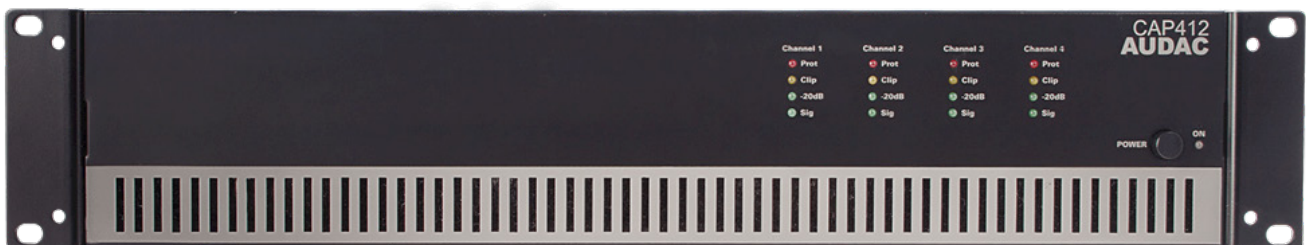
PVS reserves the right to change product specifications or this publication without notice.

The PVS Support & Training department maintains a continuous effort to improve the quality and usefulness of its publications. To do this effectively, we encourage user feedback.

Please comment on the completeness, accuracy, organization, usability, and readability of this manual by an e-mail to service.export@pvs.global



All items within the bill of material (BOM) list that has a corresponding Audac part number (AU) can be ordered within PVS dealership <https://my.pvs.global/> if any of these parts can not found within the dealer shop please contact the Support & Training department service.export@pvs.global



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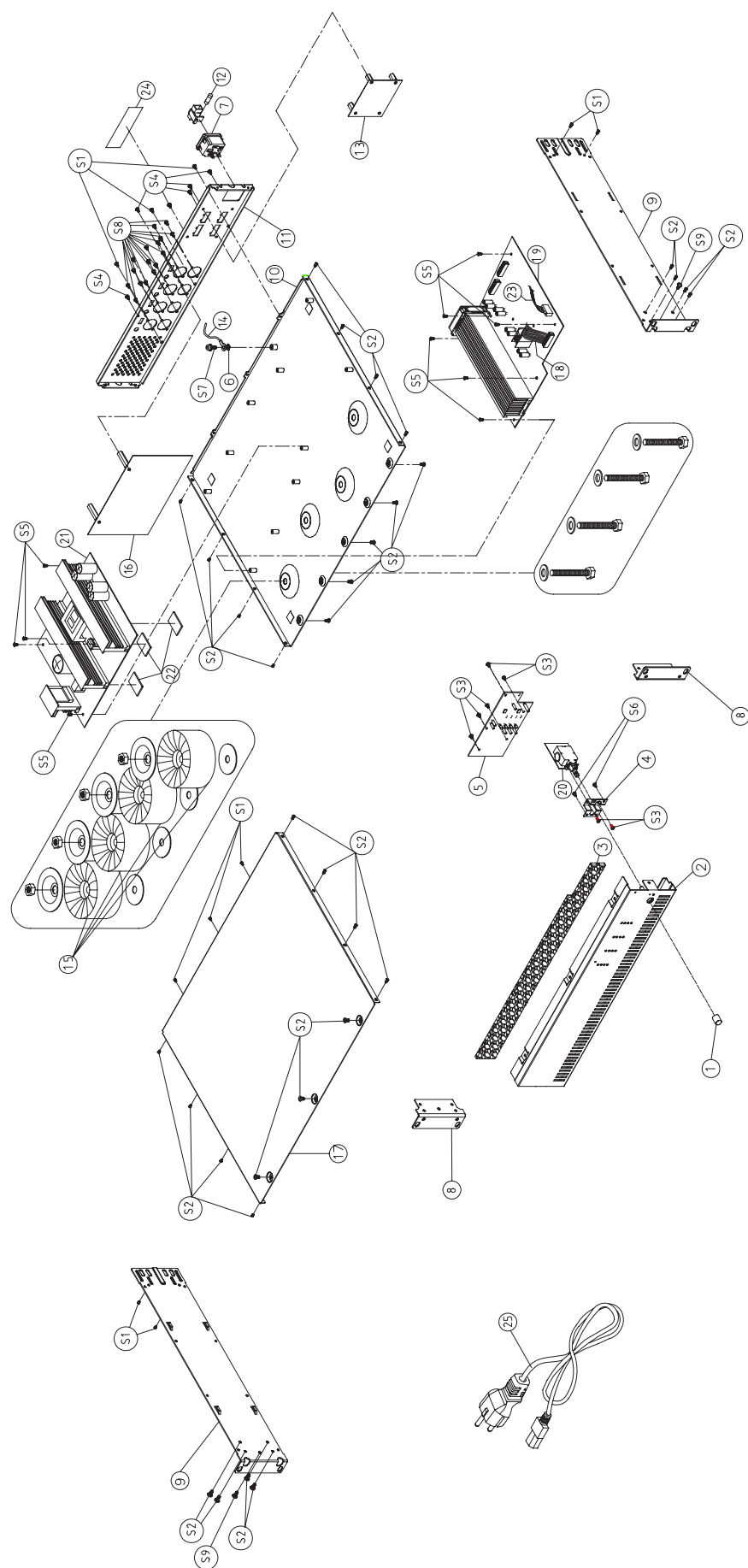
Revision History

Date	Rev From	Rev To	Description
14/01/19	–	V1.0	Frist release

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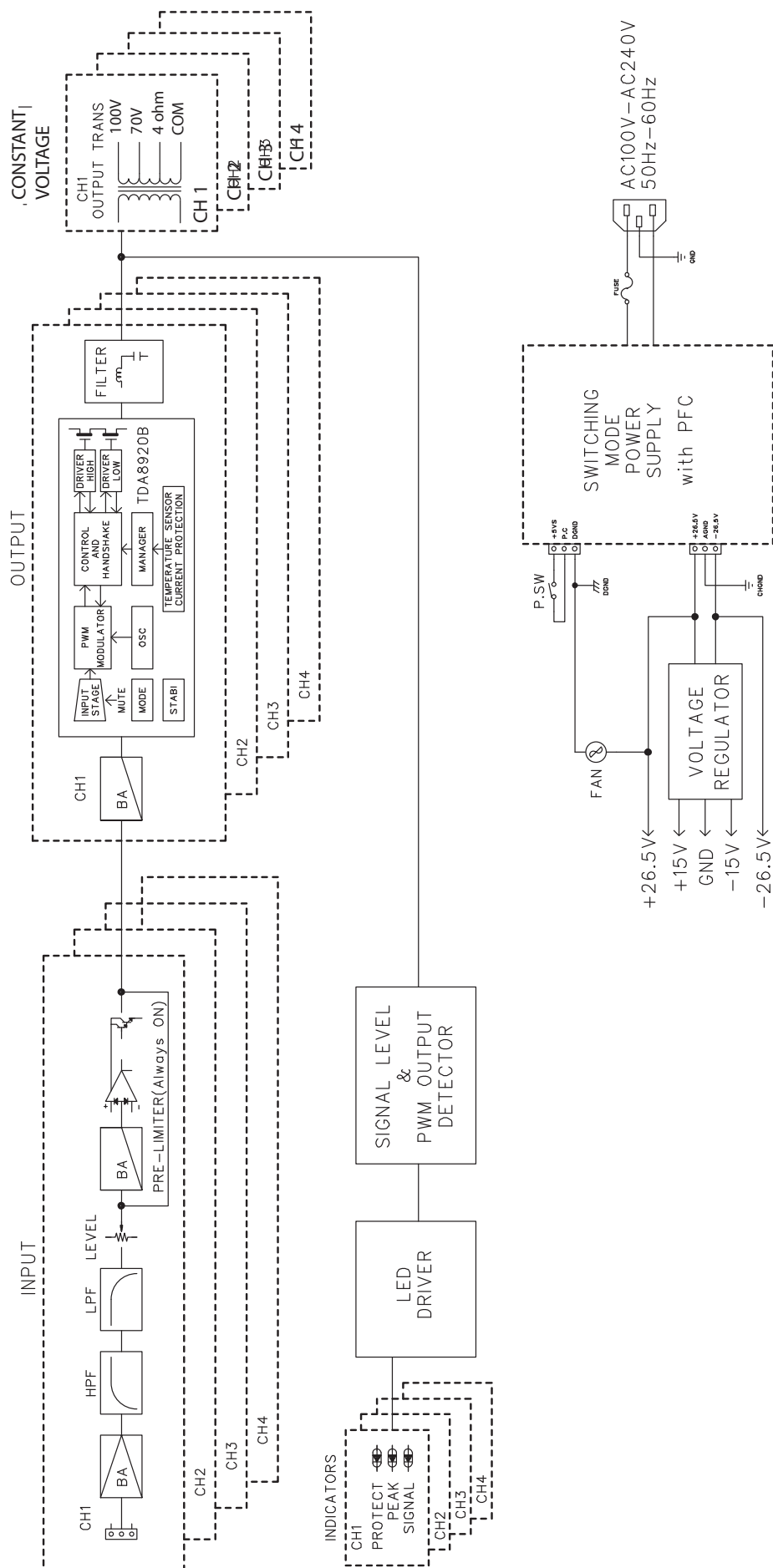
Exploded View



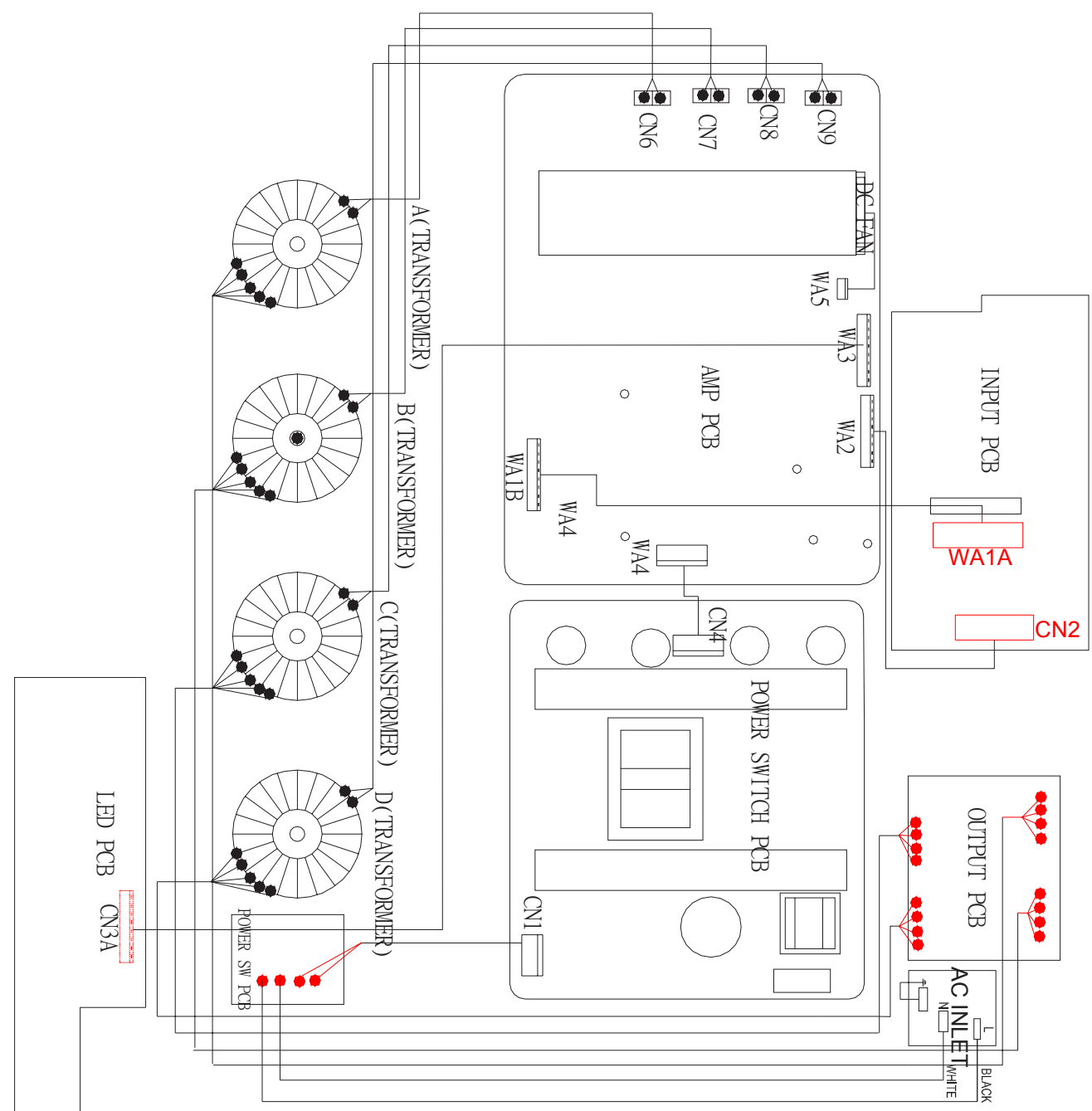
Exploded View Part List

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
1	PLA POWER BUTTON KNOB– BLACK	AU061626004	1
2, 3	FRONT PANEL ASS'Y + FILTER		1
4	SWITCH BRACKET		1
5	PCBA FRONT LED CAP412	AU514121004	1
6	PULLEY WASHER		1
7	AC INLET(TU–301–SF)		1
8, 9	SIDE FRAME KIT (RACK EAR, 5XM4 AND 2X SCREWS)		2
10	MAIN CHASSIS ASS'Y		1
11	BACK COVER		1
12	FUSE(5,2*20 250V T6,3AH)		1
13	PCBA OUTPUT CAP412 V2.0	AU514121006	1
14	1P CONNECTOR WIRE(UL1015#14 200mm)		1
15	TRU CAP412 100V OUTPUT TRANSFORMER	AU464121001	4
16	PCBA INPUT CAP412	AU514121003	1
17	TOP COVER		1
18	16 PINS FLATCABLE	AU794120016	1
19	PCBA POWER AMPLIFIER CAP412	AU514121001	1
20	SW SWITCH POWER	AU442204000	1
21	PCBA POWER SUPPLY CAP412	AU514121002	1
22	EVA		3
23	4P CONNECTOR WIRE(P=3,96,L=120mm,UL1015#18)		1
24	BAR CODE		1
25	AC CORD(L=1900mm, 18AWG LP–34A H05VV–FLS VDE)		1
S1	SCREW(BTB,3*5,ZB)		10
S2	SCREW(TTS4*6 B–HEAD BLACK)		32
S3	SCREW(M3*6)		7
S4	SCREW(M3*6 B–HEAD BLACK TEETH)		6
S5	SCREW(M 3*8,L=10MM,C–1018)		10
S6	SCREW(C–1018,B,M3,L=4mm,BISO)		2
S7	SCREW(M4*10)		1
S8	SCREW(3*8mm TTB)		16
S9	SCREW(STB,4*8,TTS)		2

Block Diagram



POINT – POINT DIAGRAM



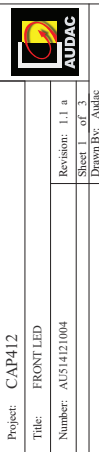
Technical specifications

RMS Power			4 x 120 W
Frequency Response	± 3 dB		50 Hz - 22 kHz
Signal / Noise			> 100 dB
THD+N	@ 1 kHz	1/2 Rated Power	< 0.3%
Crosstalk	@ 1 kHz		< 80 dB
Technology			Class-D
Power	Supply		Switch mode
	Source		100 ~ 240 V AC / 50 ~ 60Hz
Inputs	Sensitivit	1W/1m	-0.5 dB ~ 10.5 dB
	Impedance		10 kΩ balanced
	Connector		XLR female with Male Linkthrough
Outputs	Voltage	Impedance	100V / 83 Ω
			70V / 42 Ω
			4 Ω
	Connector		4-pin Euro Terminal Block (Pitch - 5.08 mm)
Common mode rejection ratio			70 dB
Protection			DC Short circuit
			Over heating
			Over load
			Signal limiting
Cooling			Temperature controlled FAN
Operating temperature			0° ~ 40° @ 95% Humidity
Dimensions	W x H x D		482 x 88 x 420 mm
Weight			14.8 kg
Mounting			19"
Unit height			2 HE
Construction			Steel
Colours			Black
Accessories	Included		4 x 4-pin Euro Terminal Block outputs connector
	Optional		CPE100 Rack mount handles

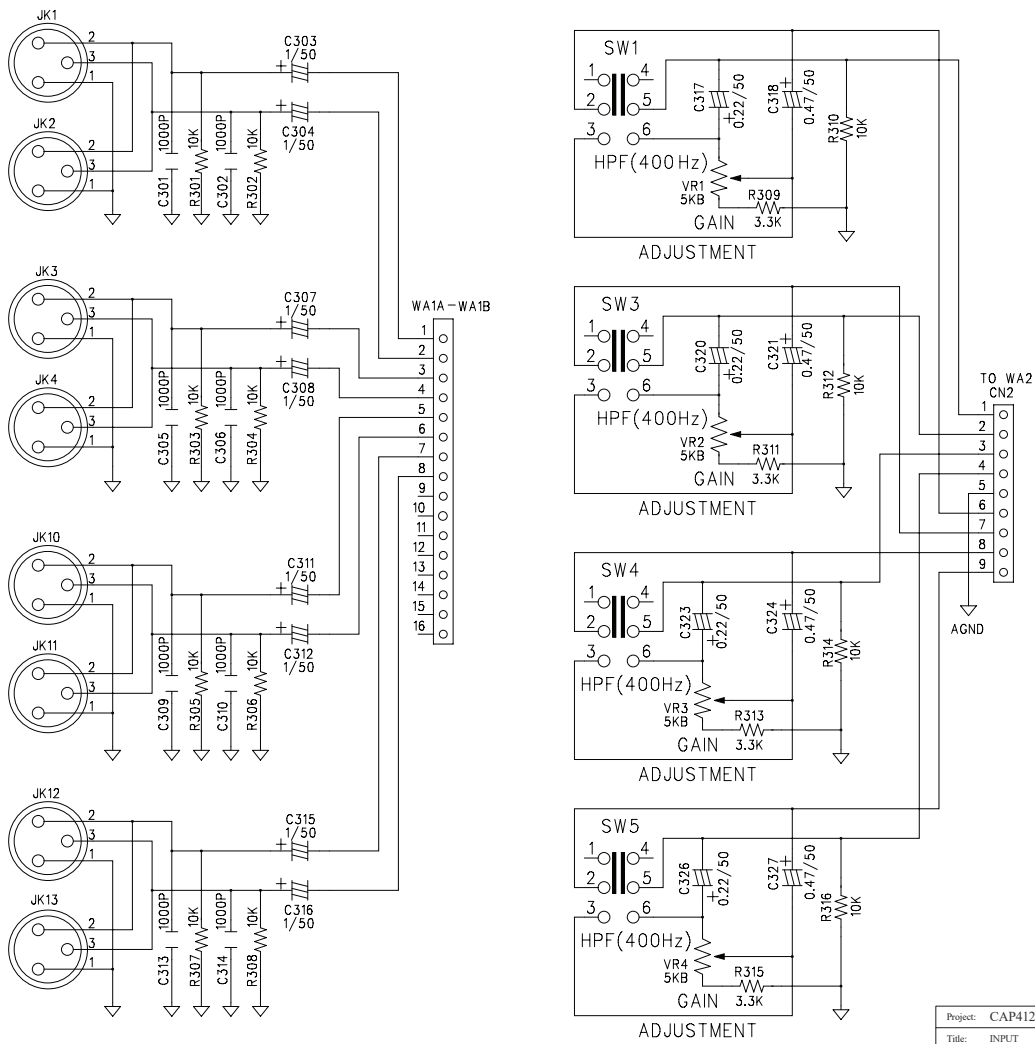
AU514121001 POWER AMPLIFIER CAP412



		
Project: CAP412	Revision: 1.1 a	
Title: POWER AMPLIFIER	Sheet 1 of 3	
Number: AU514121001	Drawn By: Audac	

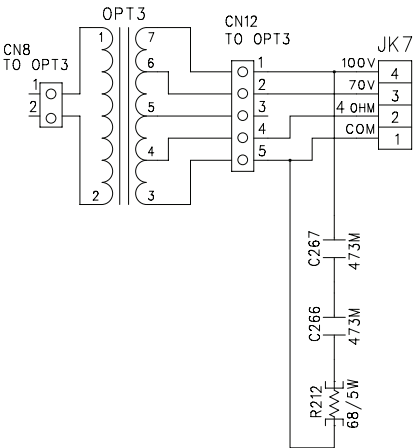
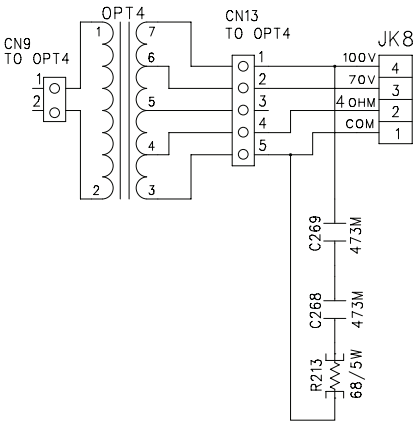
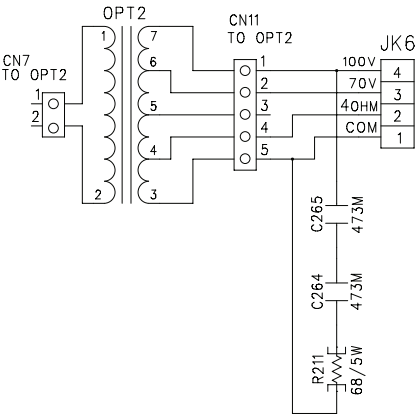
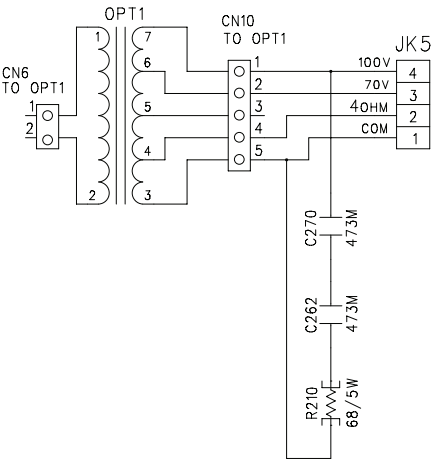


AU514121003 PCBA INPUT CAP412



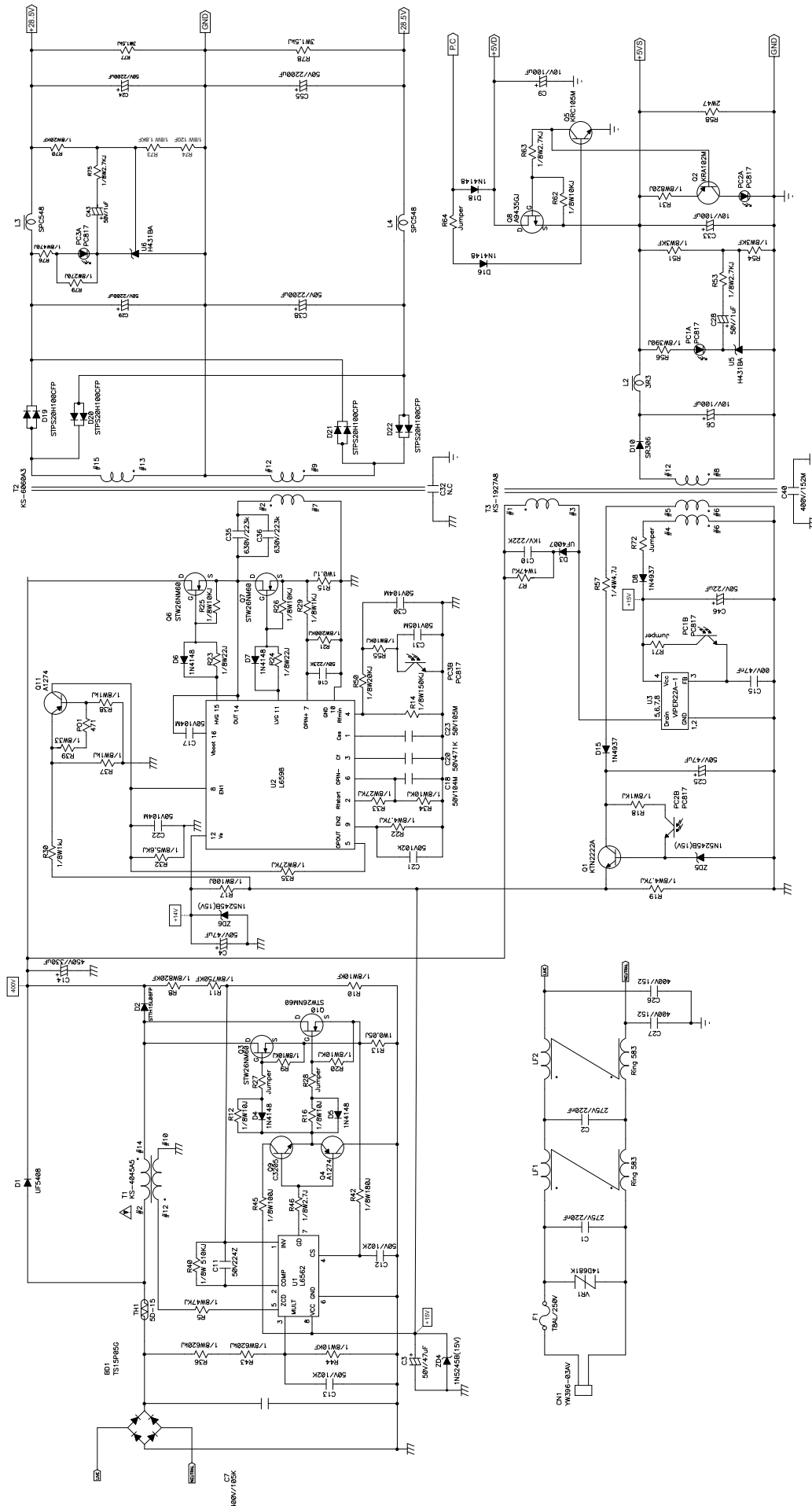
Project: CAP412		
Title: INPUT		
Number: AU514121003	Revision: 1.1 a	
	Sheet 1 of 3	
	Drawn By: Audac	

AU514121006 PCBA OUTPUT CAP412 V2.0



Project:	CAP412	
Title:	OUTPUT V2.0	
Number:	AU514121006	
	Revision: 1.1 a	
	Sheet 1 of 3	
	Drawn By: Audac	

AU514241003 PCBA POWER SUPPLY CAP412



Project: CAP412	
Title: POWER SUPPLY	
Revision: 1.1 a	Sheet 1 of 3
Number: AU514241002	Drawn By: Audac

AU514121001 POWER AMPLIFIER CAP412

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
WA3	12P CONNECTOR (2,5mm CKM2501WV-12P)		1
WA2	9P SOCKET (CKM2501WV-9P 180°WHITE)		1
CN6	2P CONNECTOR WIRE (HX63080-2P, P=6,3mm, L=285mm)		1
CN7	2P CONNECTOR WIRE (HX63080-2P, P=6,3mm, L=300mm)		1
CN8	2P CONNECTOR WIRE (HX63080-2P, P=6,3mm, L=330mm)		1
CN9	2P CONNECTOR WIRE (HX63080-2P, P=6,3mm, L=400mm)		1
WA1B	16P FFC CONNECTOR (1,25-2-16P)		1
WA4	4P BASE (P=3,96mm, CKM3962WV-4P-3,96mm)		1
WA5	2P BASE (CKM2503WV-2P, 180° WHITE)		1
R157	CARBON FILM RESISTOR (5,6K Ω , 1/6W, J, T-26)		1
R111, R112, R125, R126, R139, R140, R153, R154	CARBON FILM RESISTOR (22 Ω , 1W, J, T-73)		8
R109, R110, R113, R114, R123, R124, R127, R128, R137, R138, R141, R142, R151, R152, R155, R156	CARBON FILM RESISTOR (10 Ω , 1/2W, J, T-52)		16
R159	METAL OXIDE RESISTOR (180 Ω , 1W, J, AXIAL TAPING, 74mm)		1
C98, C99, C139, C140, C180, C181, C219, C220	ELEC. CAPACITOR (3300 μ F/16V, M, 105, BULK 13x26) (Cd,Pb,Hg,Cr)		8
C82, C83, C123, C124, C164, C165, C205, C206	POLYESTER CAPACITOR (0,1 μ F/63V, J, TAPING, MEM)		8
C87, C127, C128, C168, C169, C209, C210, C86	POLYESTER CAPACITOR (0,1 μ F/100V, J, TAPING)		8
C107, C108, C148, C149, C189, C190, C228, C229	ELEC. CAPACITOR (470 μ F/35V, M, 105, TAPING 10x17)		8
C109, C150, C191, C230	ELEC. CAPACITOR (470 μ F/63V, M, 105, BULK, 13x25mm)		4
C84, C85, C125, C126, C166, C167, C207, C208	BOX CAPACITOR (0,22 μ F/63V, J, TAPING)		4
ZD1	ZENER DIODE (MTZJ5,6-C T-77 TAPING)		1
D1, D2	RECTIFYING DIODE (RECTIFIER LTIN4006)		2
D15, D16, D17, D18, D19, D20, D21, D22	DIODE (SR540)		8
L17, L18	BEAD CORE (A70512003, T-26mm)		2
L3, L4, L7, L8, L11, L12, L15, L16	INDUCTOR (22 μ H)		8
	HEAT SINK (AL)		1
	AIR GUIDE (PC 0,25T)		1
	SCREW (M3x5L, CTP, C-1018)		2
	SCREW (M3x8)		10
	INSULATION SHEET (0,3t)		2
	COOLING SHEET (13*20mm)		4
R105, R106, R119, R120, R133, R134, R147, R148, R108, R122, R136, R150	CHIP RESISTOR (5,6K Ω , 1/8W, 0805, J, TP 150V)		12
R22, R47, R72, R97	CHIP RESISTOR (390K Ω , 1/8W, J, TP, 0805, 150V)		4
R23, R48, R73, R98	CHIP RESISTOR(270 Ω , 1/8W, 0805, J, TP, 150V)		4

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
R11, R36, R61, R86	CHIP RESISTOR (3,9K Ω , 1/8W, 0805, 150V)		4
R16, R18, R41, R43, R66, R68, R91, R93	CHIP RESISTOR (100 Ω , 1/8W, 0805, 150V)		8
R107, R121, R135, R149	CHIP RESISTOR (1K Ω , 1/8W, 0805, 150V)		4
R158, R102, R116, R130, R144, R17, R20, R42, R45, R67, R70, R92, R95	CHIP RESISTOR (10K Ω , 1/8W, 0805, 150V)		13
R14, R39, R64, R89	CHIP RESISTOR (100K Ω , 1/8W, 0805, 150V)		4
R15, R40, R65, R90	CHIP RESISTOR (2,2K Ω , 1/8W, 0805, 150V)		4
R21, R46, R71, R96	CHIP RESISTOR (22K Ω , 1/8W, 0805, 150V)		4
R19, R44, R69, R94	CHIP RESISTOR (33K Ω , 1/8W, 0805, 150V)		4
R12, R37, R62, R87	CHIP RESISTOR (4,7K Ω , 1/8W, 0805, 150V)		4
R63, R5, R6, R8, R13, R30, R31, R33, R38, R55, R56, R58, R80, R81, R83, R88	CHIP RESISTOR (47K Ω , 1/8W, 0805, 150V)		16
R161, R162, R163, R164, R165, R166, R167, R168, R1, R2, R26, R27, R51, R52, R76, R77, R101, R103, R104, R115, R117, R118, R129, R131, R132, R143, R145, R146	CHIP RESISTOR (15K Ω , 1/8W, 0805, 150V)		28
R3, R4, R28, R29, R53, R54, R78, R79	CHIP RESISTOR (6,8K Ω , 1/8W, 0805 , 150V)		8
R25, R50, R75, R100	CHIP RESISTOR (200 Ω , 1/8W, 0805, 150V)		4
R227, R228, R229, R226	CHIP RESISTOR (1,5K Ω , 1/8W, 0805, 150V)		4
R7, R32, R57, R82	CHIP RESISTOR (82K Ω , 1/8W, 0805, 150V)		4
R24, R49, R74, R99	CHIP RESISTOR (470 Ω , 1/8W, 0805, 150V)		4
R9, R10, R34, R35, R59, R60, R84, R85	CHIP RESISTOR (36K Ω , 1/8W,J,TP 0805,150V)		8
C2, C3, C24, C25, C36, C37, C58, C59	CHIP CAPACITOR (47pF/50V, 0805 TAP, NPO)		8
C10, C28, C44, C62, C76, C77, C102, C117, C118, C143, C158, C159, C184, C199, C200, C223	CHIP CAPACITOR (220pF/50V, 0805 TAP, NPO)		16
C19, C33, C53, C67, C70, C71, C111, C112, C152, C153, C193, C194	CHIP CAPACITOR (22pF/50V, 0805, TAP, NPO)		12
C88, C89, C129, C130, C170, C171, C211, C212	CHIP CAPACITOR (0,015 μ F/250V, 0805, TAPING, X7R)		8
C11, C29, C45, C63, C232	CHIP CAPACITOR (120pF/50V, 0805, TAP, NPO)		5
C15, C31, C49, C65	CHIP CAPACITOR (10pF/50V, 0805, TAP, NPO)		4
C101, C142, C183, C222, C4, C5, C8, C9, C12, C13, C16, C17, C20, C21, C38, C39, C42, C43, C46, C47, C50, C51, C54, C55, C72, C73, C113, C114, C154, C155, C195, C196, C231	CHIP CAPACITOR (0,1 μ F/ 50V, 0805, TAP, Y5V)		33
C1, C23, C35, C57	CHIP CAPACITOR (5pF/50V, 0805, TAP, NPO)		4
C78, C79, C80, C81, C119, C120, C121, C122, C160, C161, C162, C163, C201, C202, C203, C204	CHIP CAPACITOR (0,1 μ F/100V, 1206, X7R)		16
D3, D4, D5, D6	SMD DIODE (LL4148, AXIAL TYPE, L=3,8mm)		4
ZD3, ZD4, ZD5, ZD2	CHIP ZENER DIODE (RLZTE-11, 5,1B)		4
IC1, IC2, IC3, IC4, IC5, IC7, IC8, IC9, IC10, IC11, IC12, IC14, IC16, IC18	IC (NJM-2068M-TE2, SOP8)	AU470002068	14
IC13, IC15, IC17, IC19	IC (TDA8920BTH, SO-24)	AU364128920	4
IC20	IC (HEF4047BT, SO14)		1
IC24, IC6	IC (NJM13600M, SOP16)	AU360003136	2

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
C90, C91, C92, C93, C131, C132, C133, C134, C172, C173, C174, C175, C213, C214, C260, C261	CERAMIC CAPACITOR (220pF/50V, K, TAPING, Y5P)		16
C103, C104, C144, C145, C185, C186, C224, C225, C236, C237, C240, C241	CERAMIC CAPACITOR (0,1µF/50V, Z, TAPING, Y5V)		12
C34, C56, C68, C22	ELEC. CAPACITOR (2,2µF/50V, M, 105°C, TAPING, 5x11)		4
C100, C141, C182, C221	ELEC. CAPACITOR (100µF/10V, M, 105°C, TAPING, 5x11) (Cd,Pb,Hg,Cr)		4
C74, C75, C115, C116, C156, C157, C197, C198	ELEC. CAPACITOR (10µF/50V, M, 105°C, TAPING, 5x11) (Cd,Pb,Hg,Cr)		8
C105, C106, C146, C147, C187, C188, C226, C227	ELEC. CAPACITOR (47µF/50V, M, 105°C, TAPING, 6,3x11) (Cd,Pb,Hg,Cr)		8
C233	ELEC. CAPACITOR (100µF/35V, M, 105°C, TAPING, 6,3x11) (Cd,Pb,Hg,Cr)		1
C238, C239	ELEC. CAPACITOR (100µF/25V, M, 105°C, TAPING, 6,3x11)		2
C14, C18, C30, C32, C48, C52, C64, C66, C69, C110, C151, C192	ELEC. CAPACITOR (47µF/25V, M, 105°C, TAPING, 5x11) (Cd,Pb,Hg,Cr)		12
C234, C235	ELEC. CAPACITOR (220µF/35V, M, 105°C, TAPING, 8x14)		2
C263	ELEC. CAPACITOR (47µF/16V, M, 105°C, TAPING, 5x11)		1
C244, C245, C246, C247	ELEC. CAPACITOR (1µF/50V, M, 105°C, TAPING, 4x7)		4
C135, C136, C176, C177, C215, C216, C94, C95	METAL POLYESTER CAPACITOR (0,68µF/100V, TAPING)		8
C96, C97, C137, C138, C178, C179, C217, C218	METAL POLYESTER CAPACITOR (0,1µF/63V, TAPING)		8
C7, C26, C27, C40, C41, C60, C61, C6	MAYLAR CAPACITOR (0,068µF/100V, TAPING)		8
L1, L2, L5, L6, L9, L10, L13, L14	BEAD (RH03506BT-B-N, TAPING RT)		8
Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8	TRANSISTOR (PNP, KTA1268GR, TO-92, TP)	AU470810266	8
	DC FAN&BRACKET ASS'Y		1
	FAN BRACKET (SECC 1,0T)		1
	FAN (24V/1,1W, KF0420B2L-R, 40mm)	AU354121001	1
	SCREW (C108 M3x20mm)		2
	INSULATION SHEET (0,5t)		1
	IC& HEAT SINK ASS'Y		1
IC21	IC (NJM7815FA, TO-220F)	AU361830216	1
	HEAT SINK (CD+G,AL)		1
	SCREW (TTB3x10)		1
	IC&HEAT SINK ASS'Y		1
IC22	IC (NJM7915FA)		1
	HEAT SINK (CD+G,AL)		1
	SCREW (TTB3*10)		1

AU514121004 PCBA FRONT LED CAP412

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
	LED PCB ASS'Y		1
CN3A	12P CONNECTOR WIRE (P=2,50mm, L=500mm)		1
LD1A, LD5A, LD6A, LD7A, LD9A, LD13A, LD10A, LD26A	LED (6224-10ID-A, RED)		8
LD11A, LD12A, LD23A, LD25A, LD8A, LD2A, LD3A, LD4A	LED (GREEN)		8
LD29A	LED (BLUE)		1
R160A	CARBON FILM RESISTOR(47Ω, J, 1W, T-52, M-TYPE 15x15)		1
C242A	ELEC. CAPACITOR (100μF/25V, M, TAPING 6,3x7)		1
	LED HOLDER (10T)		17
C289A, C250A, C243A, C253A	ELEC. CAPACITOR (2,2μF/50V, M, 105°C, TAPING 4x7,) (Cd,Pb,Hg,Cr)		4
C248A, C249A, C251A, C252A, C254A, C255A, C287A, C288A	ELEC. CAPACITOR (10μF/25V, M, 105°C, TAPING 4x7) (Cd,Pb,Hg,Cr)		8
Q9A, Q10A, Q11A, Q12A, Q13A, Q14A, Q15A, Q16A, Q17A, Q18A, Q19A, Q20A, Q21A, Q22A, Q23A, Q24A, Q25A, Q26A, Q27A, Q28A	TRANSISTOR (NPN, KTC3198, TO-92, TP)		20
	LED DISPLAY PCB (FR-1,297x163x1,6T)		1
	LED DISPLAY PCB (FR-1,297x163x1,6T)		1
R181A, R193A, R206A, R245A	CARBON FILM RESISTOR (12KΩ, 1/6W, J, T-26)		4
R170A, R173A, R222A, R239A	CARBON FILM RESISTOR (15KΩ, 1/6W, J, T-26)		4
R178A, R190A, R202A, R242A	CARBON FILM RESISTOR (100Ω, 1/6W, J, T-26)		4
R171A, R174A, R238A, R240A	CARBON FILM RESISTOR (47KΩ, 1/6W, J, T-26)		4
R180A, R183A, R188A, R192A, R195A, R200A, R203A, R252A, R207A, R225A, R244A, R247A	CARBON FILM RESISTOR (10KΩ, 1/6W, J, T-26)		12
R179A, R182A, R184A, R185A, R187A, R189A, R191A, R194A, R196A, R197A, R199A, R201A, R204A, R205A, R208A, R209A, R224A, R241A, R251A, R253A, R243A, R246A, R248A, R249A, R169A, R172A, R175A, R176A, R177A	CARBON FILM RESISTOR (1KΩ, 1/6W, J, T-26)		29
R186A, R198A, R223A, R250A	CARBON FILM RESISTOR (75KΩ, 1/6W, J, T-26)		4
D7A, D8A, D9A, D10A, D11A, D12A, D13A, D14A, D23A, D24A, D25A, D26A	SWITCHING DIODE (1N4148, 1/2W, 150mA/100V, T-77)		12

POWER SW PCB ASS'Y

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
	POWER SW PCB ASS'Y		1
SW2	POWER SWITCH (KDC-A11-112, NAIS TV-8 8A/250V, S & CSA TUV)	AU442204000	1
SMPS, CN1\TO PW SW PCB, W1, W2	3N2P CONNECTOR WIRE (P=3,96mm, L=220mm)		1
AC INLET L\TO PW PCB W3	1P CONNECTOR WIRE (L=380mm, BLACK, T187)		1
AC INLET N\TO PW PCB W4	1P CONNECTOR WIRE (L=380mm, WHITE, T187)		1
	POWER SW PCB (FR-1,297x163x1,6T)		1

AU514121003 PCBA INPUT CAP412

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
	INPUT PCB ASS'Y		1
	SUPPORT (BRASS)		2
SW1, SW3, SW4, SW5	SLIDE SW (SST1040-0202-9T-NP)-Alpha	AU440000104	4
CN2	9P, 2,5 CONNECTOR, WIRE (L=240mm, AWG26)		1
WA1A	16P, FFC CONNECTOR (1,25-2-16P)		1
VR1, VR2, VR3, VR4	ROTARY VR (5KB RV09BC-40-30B-B5K)	AU410002500	4
JK2, JK4, JK11, JK13	BALANCE JACK		4
JK1, JK3, JK10, JK12	3P, MIC JACK, FEMALE		4
	SCREW (M3x6)		2
C301, C302, C305, C306, C309, C310, C313, C314	CERAMIC CAPACITOR (1000PF/50V, K, TAPING, Y5P)		8
C303, C304, C307, C308, C311, C312, C315, C316	ELEC. CAPACITOR (1μF/50V, M, 105°C, TAPING 5x11) (Cd,Pb,Hg,Cr)		8
C318, C321, C324, C327	ELEC. CAPACITOR (0,47μF/50V, M, 105°C, TAPING 5x11) (Cd,Pb,Hg,Cr)		4
C317, C320, C323, C326	ELEC. CAPACITOR (0,22μF/50V, M, 105°C, TAPING 5x11) (Cd,Pb,Hg,Cr)		4
	INPUT PCBFR-1,297x163x1,6T)		1
J20, J21, J22, J1, J2, J3	JUMPER		0
R309, R311, R313, R315	CARBON FILM RESISTOR (3,3KΩ, 1/6W, J, T-26)		4
R301, R302, R303, R304, R305, R306, R307, R308, R310, R312, R314, R316	CARBON FILM RESISTOR (10KΩ, 1/6W, J, T-26)		12

AU514121005 PCBA OUTPUT CAP412 V1.0

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
	OUTPUT PCB ASS' Y		1
	SUPPORT (BRASS M3*10)		4
CH1	5P CONNECTOR WIRE (1015#18, L=680mm)		1
CH2	5P CONNECTOR WIRE (1015#18, L=560mm)		1
CH3	5P CONNECTOR WIRE (1015#18, L=460mm)		1
CH4	5P CONNECTOR WIRE (1015#18, L=360mm)		1
R210, R211, R212, R213	CEMENT RESISTOR (68Ω, J, 5W, AXIAL)		4
JK5, JK6, JK7, JK8	4P, EURO TERMINAL, FEMALE (5,08mm)		4
	CABLE TIE		2
	SCREW (M3x6)		4
	OUTPUT PCB (FR-1,297x163x1,6T)		1
C262, C264, C265, C266, C267, C268, C269, C270	MYLAR CAP (0,047μF/100V, M, TAPING)		8

AU514121006 PCBA OUTPUT CAP412 V2.0

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
	OUTPUT PCB ASS' Y		1
	SUPPORT (BRASS M3x10)		4
CH1	5P CONNECTOR WIRE (1015#18, L=680mm)		1
CH2	5P CONNECTOR WIRE (1015#18, L=560mm)		1
CH3	5P CONNECTOR WIRE (1015#18, L=460mm)		1
CH4	5P CONNECTOR WIRE (1015#18, L=360mm)		1
R210, R211, R212, R213	CEMENT RESISTOR (68Ω, J, 5W, AXIAL)		4
JK5, JK6, JK7, JK8	4P EURO TERMINAL FEMALE (5,08mm)		4
	CABLE TIE		2
	SCREW (M3x6)		4
	OUTPUT PCB (FR-1,297x163x1,6T)		1
C262, C264, C265, C266, C267, C268, C269, C270	MYLAR CAP (0,047μF/400V, M, TAPING)		8

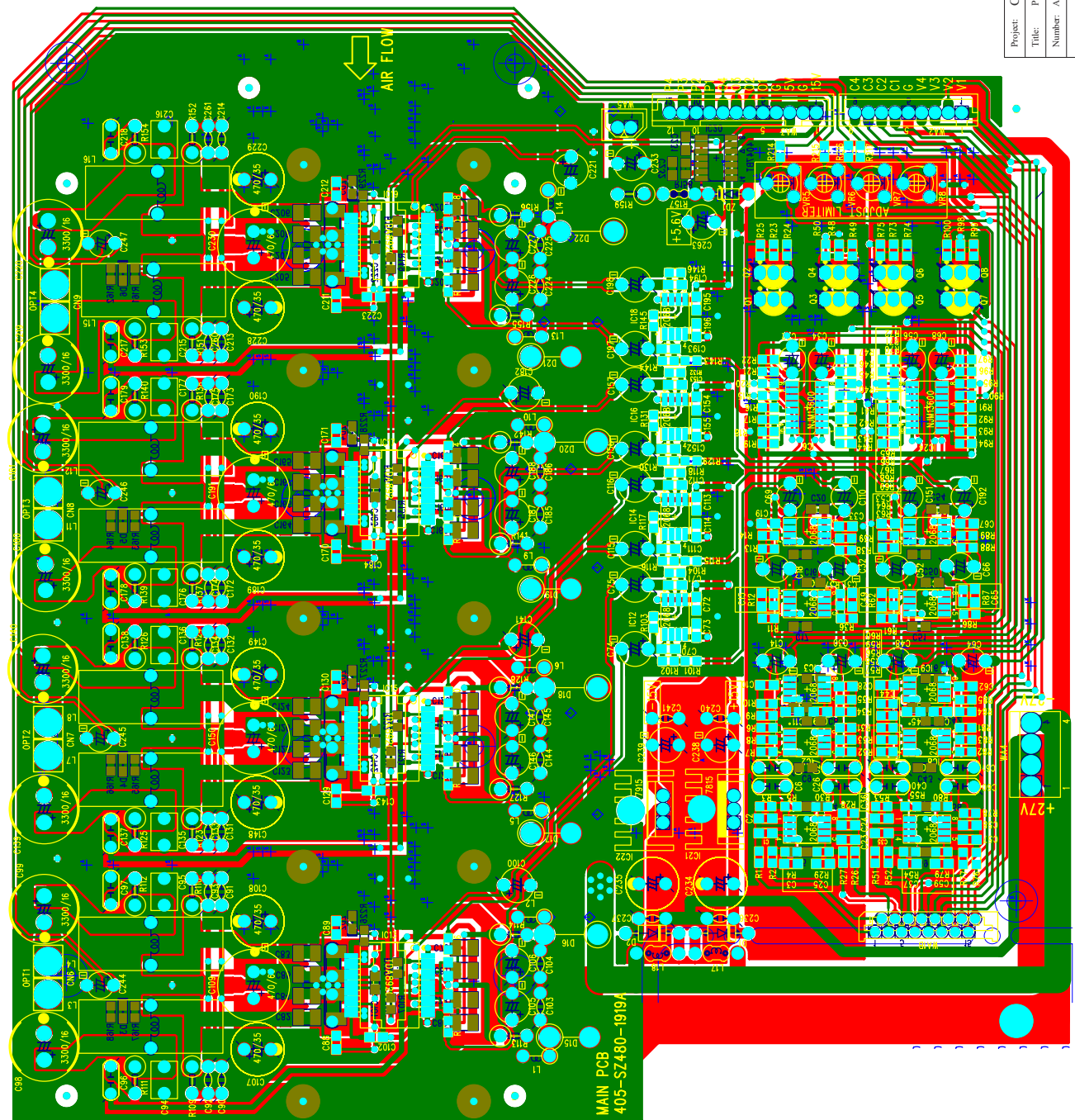
AU514241003PCBA POWER SUPPLY CAP424

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
	POWER SWITCH PCB ASS'Y		1
CN1	3P SOCKET (CKM3962WV-3P, 180°, WHTIE, PIN2 NC)		1
CN4	4P BASE (P=3,96mm, CKM3962WV-4P-3,96mm)		1
T1	TRANSFORMER (BCK4001-425, PFC)		1
T2	TRANSFORMER (EPC60, 32:4:4, XH11-Q60008-501)		1
T3	TRANSFORMER (XH11-A19001-851)		1
R13, R15	WIREWOUND RESISTOR		2
P01	NTC THERMISTOR (PTMS2010-P830)		1
TH1	NTC THERMISTOR (SCK-056)	AU451202000	1
VR1	VOLTAGE VARISTOR (TVR14681)	AU434121468	1
R58	METAL OXIDE RESISTOR (47Ω, J, 2W)		1
R7	RESISTOR (47KΩ, 1W, J, T-73/BOX)		1
R77, R78	RESISTOR (1,5KΩ, 3W,J)		2
C35, C36	MPP CAP (0,022μF, 630V)		2
C7	MPP CAP (1μF, 400V)		1
C1, C2	MEX CAPACITOR (0,22μF/275V, K, P=22,5mm)		2
C24, C29, C38, C55	ELEC. CAPACITOR (2200μF/50V, M, 105°C, 16x35) (Cd,Pb,Hg,Cr)		4
C14	ELEC CAPACITOR (330μF/450V, 105°C, LZ, 30x46mm)		1
C26, C27, C40	SAFETY CAPACITOR (1500pF/400V, M, E152ME4A01L, T, Y5U)		3
BD1	BRIDGE DIODE (GBJ1508)	AU334121508	1
D19, D20, D21, D22	SWITCHING DIODE (STPS20H100CFP, TO-220FPAB, ST)		4
D10	SCHOTTKY DIODE (SR160 DO-41 1, 0AMP)		1
D1	ULTRAFAST DIODE (UF5408, TAPING, DO-201AD)		1
D2	ULTRAFAST DIODE (STTH5L06FP, TO-220FPAC, ST)	AU334120506	1
D3	DIODE (UF4007, DO-204AL, TAPING)		1
D8, D15	DIODE (1N4937, 1W, T=52mm, DO-41, CAMBRIDGE)		2
L3, L4	BAR CHOKE (4,5μH+/-20%)		2
LF1, LF2	LINE FILTER (14mH)		2
L2	COIL (4,2uH, 11x7,5mm, XH11-R06011-3R3)		1
Q6, Q7	POWER MOSFET, STW20NM60	AU474122060	2
Q10	POWER MOSFET, STW45NM60	AU472524560	1
Q8	MOSFET (P-CHANNEL, AP9435GJ, ST0-251, APE)	AU474129435	1
U2	SMPS, IC, L6598, DIP16	AU362526598	1
PC1, PC2, PC3	IC, PC817C, DIP-4		3
U1	TRANSITION-MODE, PFC, IC, L6562N, DIP8, ST	AU362526562	1
U3	LOW POWER, SMPS, IC, VIPER22ADIP-E, DIP-8, ST	AU362520022	1
	HEATSINK (AL)		1
Q6, Q7, Q10	MICA SHEET (22x18x0,1t)		3
	SCREW (TTB M3x12mm) (Cd,Pb,Cr,Hg)		4
	SCREW (TTB3x8)		8
	HEATSINK ASS'Y		1
	HEATSINK ASS'Y		1

REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
C28, C43	ELEC. CAPACITOR (1 μ F/50V, M, 105, TAPING 5x11) (Cd,Pb,Hg,Cr)		2
C23, C31	MULTILAYER CAPACITOR (1 μ F/50V, M, X7R, TAPING)		2
C16	MULTILAYER CAPACITOR (0,022 μ F/50V, K, X7R, TAPING)		1
C20	MULTILAYER CAPACITOR (470pF/50V, K, X7R, TAPING)		1
C46	ELEC. CAPACITOR (22 μ F/50V, M, 105 $^{\circ}$ c, TAPING, 5x11) (Cd,Pb,Hg,Cr)		1
C25, C3, C4	ELEC. CAPACITOR (47 μ F/50V, M, 105 $^{\circ}$ c, TAPING, 6,3*11) (Cd,Pb,Hg,Cr)		3
C10	CERAMIC ELECTRIC CAPACITY (2200PF, 1KV, Y5P, TAPING)		1
C6, C9, C33	ELEC.CAPACITOR (100 μ F/16V, M, 105 $^{\circ}$ c, TAPING, 5x11)		3
C17, C18, C22, C30	MULTILAYER CAPACITOR (0,1 μ F, 50V, TAPING)		4
C15	MYLAR CAPACITOR (0,047 μ F/100V, J, TAPING)		1
C11	CAPACITOR (0,22 μ F, 50V, M, Y5V, TAPING)		1
C12, C13, C21	CAPACITOR (1000pF, 50V, K, Y5V, TAPING)		3
Q11	TRANSISTOR (PNP, KTA1274Y, TO-92L, TAPING, KEC)	AU470002127	1
U5, U6	TRANSISTOR (H431BA TO-92)		2
Q1	TRANSISTOR (KTN2222A, NPN, TO-92, KEC)	AU470002222	1
Q5	TRANSISTOR (NPN, KRC105M, TO-92M, KEC)		1
Q2	TRANSISTOR (PNP, KRA102M, TO-92M, KEC)		1
	SMPS PCB (FR-4,190x176x1,6mm)		1
R32	CARBON FILM RESISTOR (5,6K Ω , 1/6W, J, T-26)		1
R14	CARBON FILM RESISTOR (150K Ω , 1/6W, J, T-26)		1
R79	CARBON FILM RESISTOR (270 Ω , 1/6W, J, T-26)		1
R33, R35	CARBON FILM RESISTOR (27K Ω , 1/6W, J, T-26)		2
R19, R22	CARBON FILM RESISTOR (4,7K Ω , 1/6W, J, T-26)		2
R31, R76	CARBON FILM RESISTOR (470 Ω , 1/6W, J, T-26)		2
R17	CARBON FILM RESISTOR (100 Ω , 1/6W, J, T-26)		1
R5	CARBON FILM RESISTOR (47K Ω , 1/6W, J, T-26)		1
R57	CARBON FILM RESISTOR (4,7 Ω , 1/6W, J, T-26)		1
R53, R63, R75	CARBON FILM RESISTOR (2,7K Ω , 1/6W, J, T-26)		3
R30	CARBON FILM RESISTOR (1,8K Ω , 1/6W, J, T-26)		1
R56	CARBON FILM RESISTOR (390 Ω , 1/6W, J, T-26)		1
R18, R29, R37, R38	CARBON FILM RESISTOR (1K Ω , 1/6W, J, T-26)		4
R51, R54	CARBON FILM RESISTOR (3K Ω , 1/6W, J, T-26)		2
R46	CARBON FILM RESISTOR (2,7 Ω , 1/6W, J, T-26)		1
R10, R20, R25, R26, R34, R44, R55, R62	METAL FILM RESISTOR (10K Ω , 1/6W, F, T-26)		8
R36, R43	CARBON FILM RESISTOR (620K OHM, J, 1/6W, BULK M-TYPE)		2
R74	CARBON FILM RESISTOR (240 Ω , 1/6W, J, T-26)		1
R21	CARBON FILM RESISTOR (200K Ω , 1/6W, J, T-26)		1
R16	CARBON FILM RESISTOR (10 Ω , 1/6W, J, T-26)		1
R42	CARBON FILM RESISTOR (180 Ω , 1/6W, J, T-26)		1
R40	CARBON FILM RESISTOR (510K Ω , 1/6W, J, T-26)		1
R8	CARBON FILM RESISTOR (820K Ω , 1/6W, J, T-26)		1

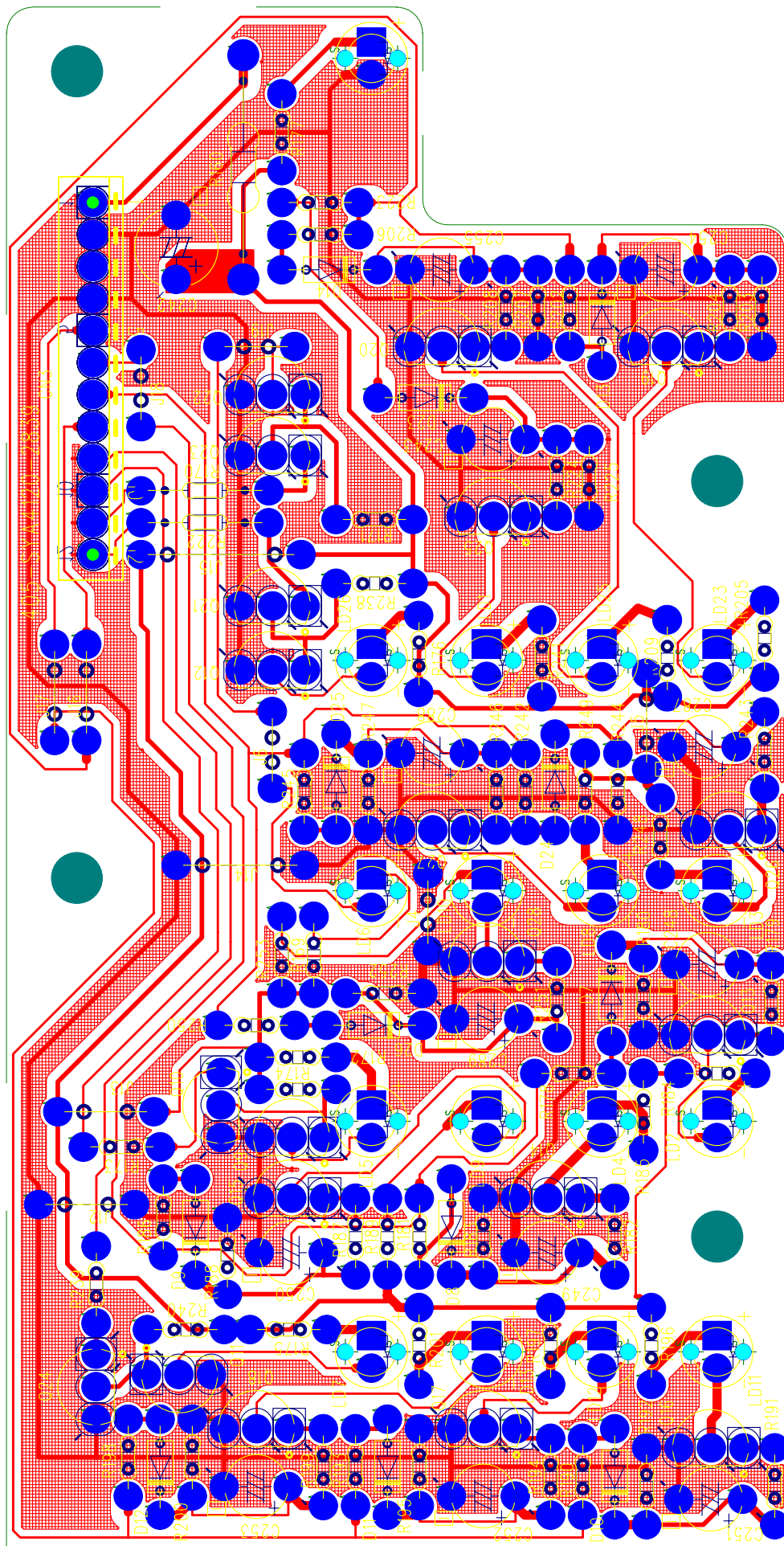
REF NO.	DESCRIPTION	PVS ORDER NUMBER	Q'TY
R23, R24	CARBON FILM RESISTOR (22Ω, 1/6W, J, T-26)		2
R39	CARBON FILM RESISTOR (33Ω, 1/6W, J, T-26)		1
R50, R70	CARBON FILM RESISTOR (20KΩ, 1/6W, J TAPING 26mm)		2
R11	RESISTOR (750KΩ, 1/6W, F, T-26)		1
R73	RESISTOR (1,8KΩ, 1/6W, F, T-26)		1
D5, D6, D7, D16, D18	SWITCHING DIODE (1N4148, 1/2W, 150mA/100V, T-77)		5
ZD4, ZD5, ZD6	ZENER DIODE (1N5245B, 1/2W, T=26mm, CAMBRIDGE)		3

AU514121001 POWER AMPLIFIER CAP412



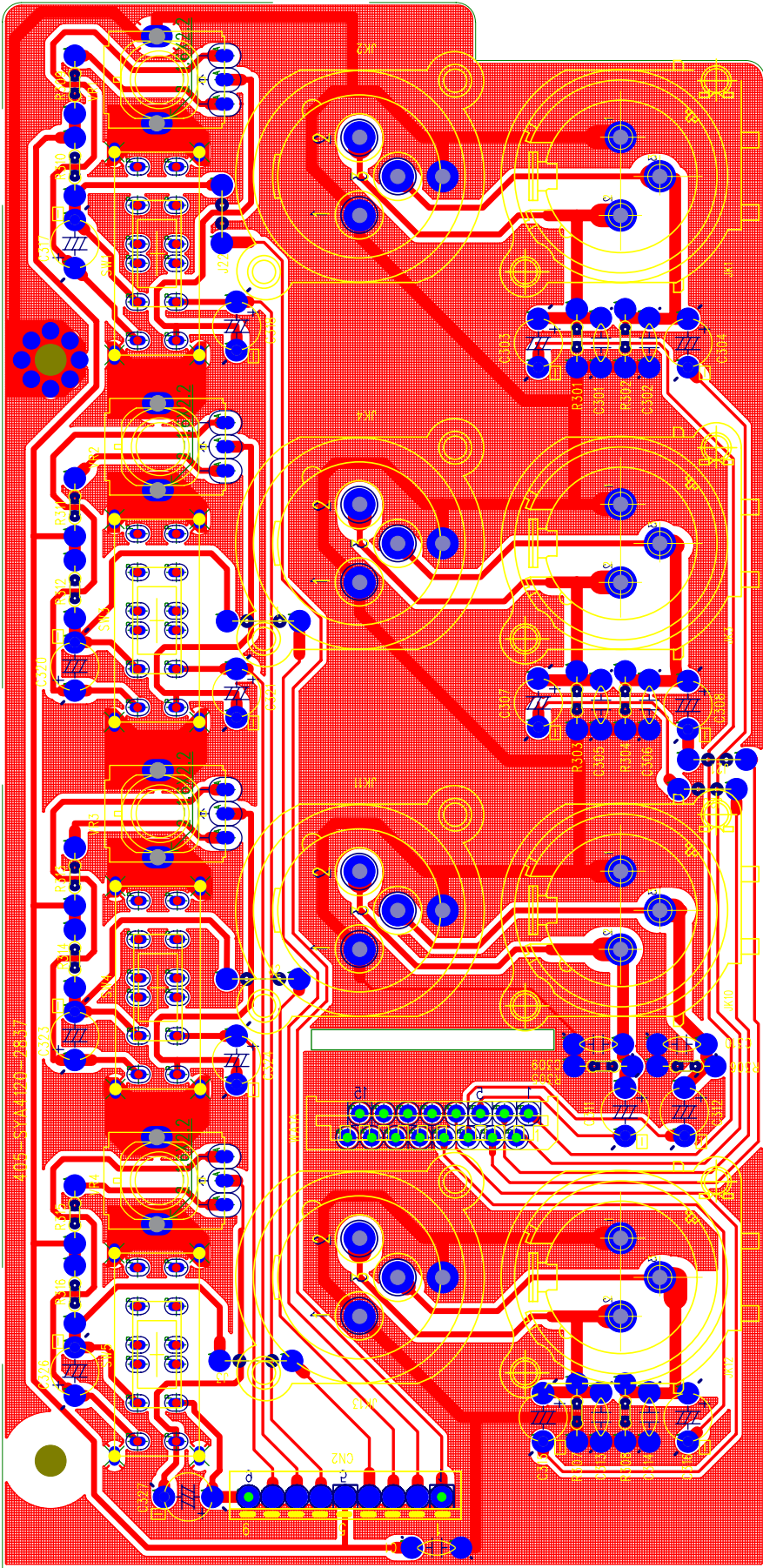
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Title:	POWER AMPLIFIER PCB
Revision:	1.1 a
Number:	AU514121001
Sheet:	of 3
Drawn By:	Audio

AU514121004 PCBA FRONT LED CAP412



Project:	CAP412	
Title:	FRONT LED PCB A	
Number:	AU514121/004	Revision: 1.1 a
		Sheet 1 of 3
		Drawn By: Avale
		

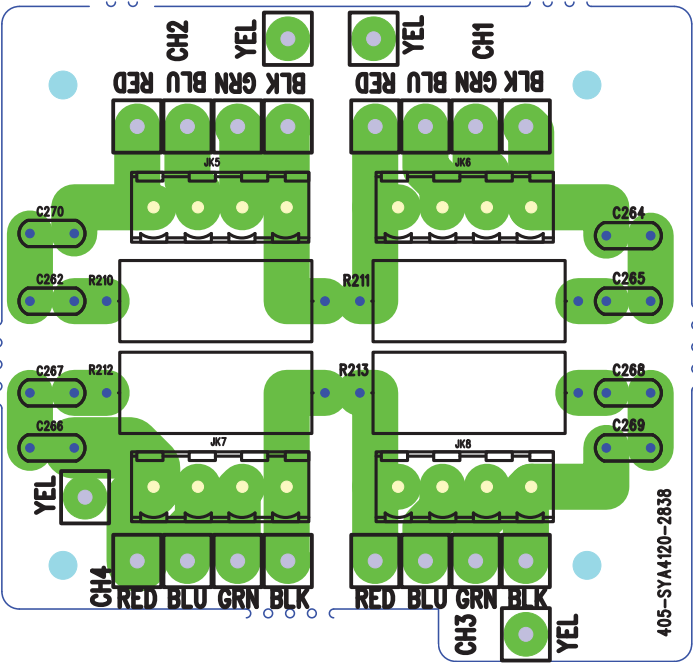
AU514121003 PCBA INPUT CAP412



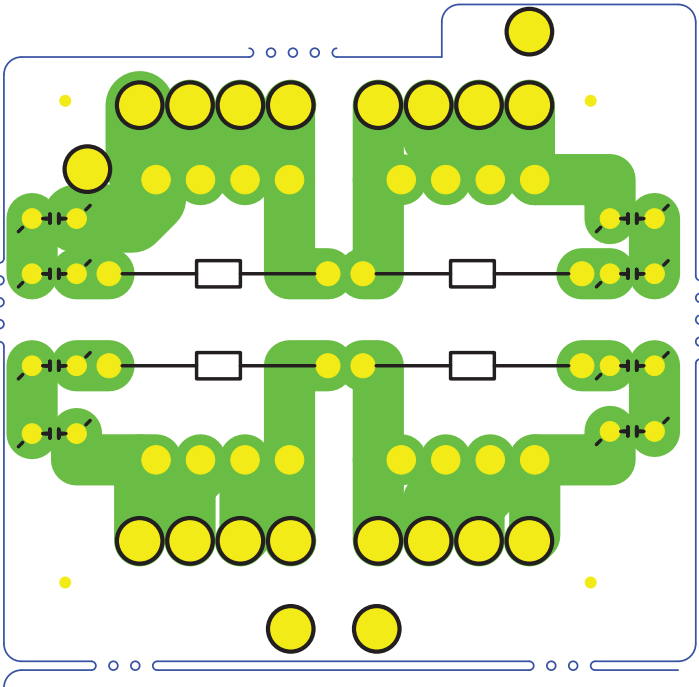
Project: CAP412		AUDAC	
Title: INPUT PCBA		Revision: 1.1 a	
Number: AU514121003		Sheet 1 of 3	
		Drawn By: Audac	

AU514121006 PCBA OUTPUT CAP412 V2.0

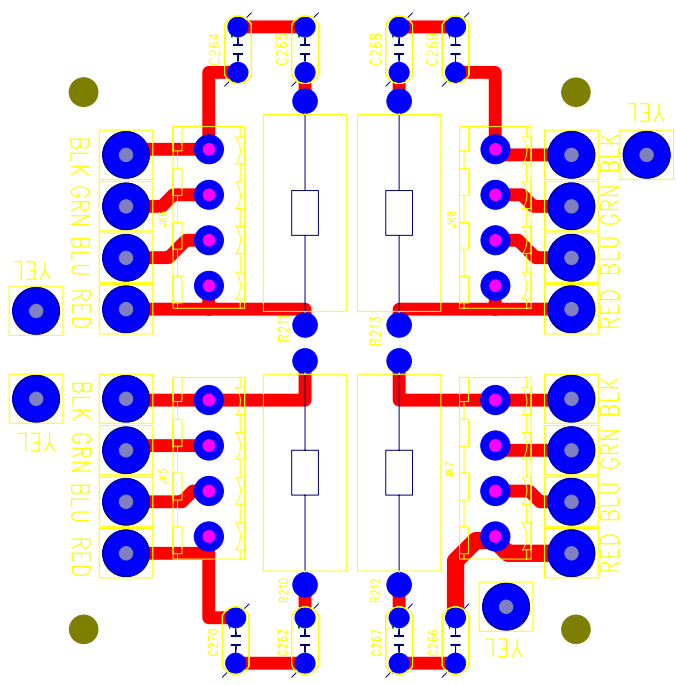
Project	CAP412
File	OUTPUT V2.0
Revision	1.1 a
Number	AU514121006
Author	W. J. J. J.
Drawn by	W. J. J. J.



Project	CAP412
File	OUTPUT V2.0
Revision	1.1 a
Number	AU514121006
Author	W. J. J. J.
Drawn by	W. J. J. J.

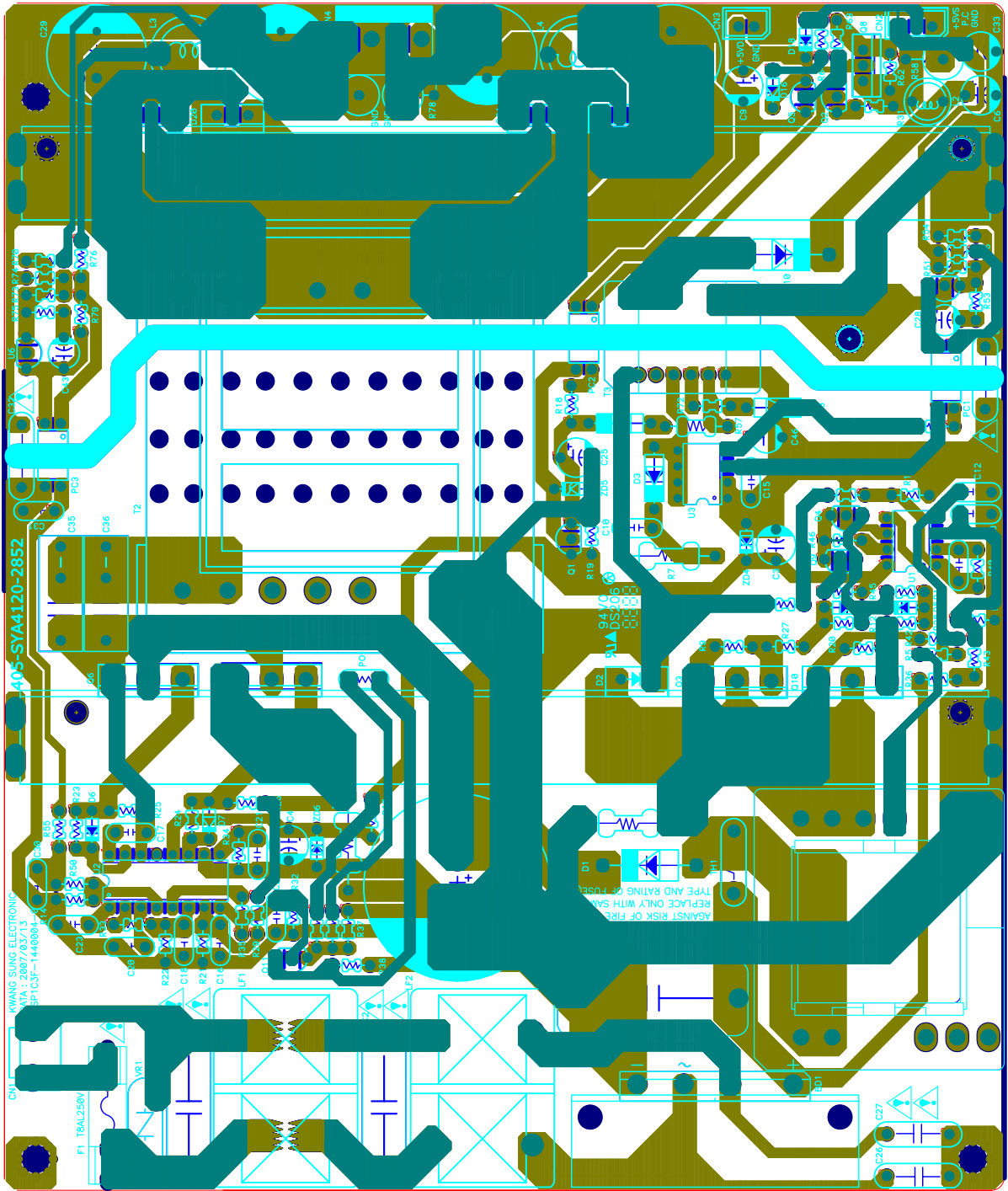


AU514121005 PCBA OUTPUT CAP412 V1.0



Project:	CAM12
Title:	OUTPUT V1.0
Revision:	1.1
Sheet:	1 of 1
Drawn By:	John

AU514121002 PCBA POWER SUPPLY CAP412



Project:	CAP412
Title:	POWER SUPPLY PCBA
Number:	AU514121002
Revision:	1.1 a
Sheet	1 of 3
Drawn By:	Audac

REPLACING TDA8920BTH BY TDA8920CTH

This selection of the service manual is created to help qualified technicians, repair the device. the faults, issues and solutions in this section are a combination of commonly found issues and ones that might be hard to find.

this information has been produced over time, thought the knowledge of the PVS technical department and local distributors.

REPLACING TDA8920BTH BY TDA8920CTH

The TDA8920BTH is an obsolete component, the replacement component is the TDA8920CTH. TDA8920CTH, the oscillator frequency is divided by two. This means that the oscillator frequency needs to be doubled to obtain the same output switching frequency. This is done by changing R158.

The resistor R158 which is near the oscillator IC on the bottom of the board needs to be changed to 4.7K Ω . (see below)

Due to the fact this switching frequency has been changed all 4 IC's in the CAP412 need to be changed.

