Service Manual

VMA-160/1120/1240/260/2120

Commercial Series
1 Channel & 2 Channel Mixer-Amplifier

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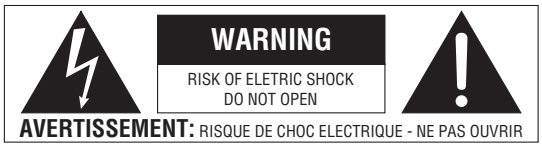
IMPORTANT SAFETY INFORMATION



The symbols shown above are internationally accepted symbols that warn of potential hazards with electrical products. The lightning flash with arrow point in an equilateral triangle means that there are dangerous voltages present within the unit. The exclamation point in an equilateral triangle indicates that it is necessary for the user to refer to the owner's manual.

These symbols warn that there are no user serviceable parts inside the unit. Do not open the unit. Do not attempt to service the unit yourself. Refer all servicing to qualified personnel. Opening the chassis for any reason will void the manufacturer's warranty. Do not get the unit wet. If liquid is spilled on the unit, shut it off immediately and take it to a dealer for service. Disconnect the unit during storms to prevent damage.

SAFETY INSTRUCTIONS

NOTICE FOR CUSTOMERS IF YOUR UNIT IS EQUIPPED WITH A POWER CORD.

WARNING: THIS APPLIANCE SHALL BE CONNECTED TO A MAINS SOCKET OUTLET WITH A PROTECTIVE EARTHING CONNECTION.

The cores in the mains lead are colored in accordance with the following code:

GREEN and YELLOW - Earth BLUE - Neutral BROWN - Live

As colors of the cores in the mains lead of this appliance may not correspond with the colored markings identifying the terminals in your plug, proceed as follows:

- The core which is colored green and yellow must be connected to the terminal in the plug marked with the letter E, or with the earth symbol, or colored green, or green and yellow.
- The core which is colored blue must be connected to the terminal marked N or colored black.
- The core which is colored brown must be connected to the terminal marked L or colored red.

This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. If the attachment plug needs to be changed, refer servicing to qualified service personnel who should refer to the table below. The green/yellow wire shall be connected directly to the units chassis.

CONDUCTOR		WIRE COLOR	
		Normal	Alt
L	LIVE	BROWN	BLACK
N	NEUTRAL	BLUE	WHITE
E	EARTH GND	GREEN/YEL	GREEN

WARNING: If the ground is defeated, certain fault conditions in the unit or in the system to which it is connected can result in full line voltage between chassis and earth ground. Severe injury or death can then result if the chassis and earth ground are touched simultaneously.

WARNING FOR YOUR PROTECTION READ THESE INSTRUCTIONS:

KEEP THESE INSTRUCTIONS

HEED ALL WARNINGS

FOLLOW ALL INSTRUCTIONS

THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING LIQUID AND NO OBJECT FILLED WITH LIQUID, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS

CLEAN ONLY WITH A DRY CLOTH.

DO NOT BLOCK ANY OF THE VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

DO NOT INSTALL NEAR ANY HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES, OR OTHER APPARATUS (INCLUDING AMPLIFIERS) THAT PRODUCE HEAT.

ONLY USE ATTACHMENTS/ACCESSORIES SPECIFIED BY THE MANUFACTURER.

UNPLUG THIS APPARATUS DURING LIGHTNING STORMS OR WHEN UNUSED FOR LONG PERIODS OF TIME.

Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or third prong are provided for your safety. If the provided plug does not fit your outlet, consult an electrician for replacement of the obsolete outlet.

Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Use only with the cart stand, tripod bracket, or table specified by the manufacture, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

POWER ON/OFF SWITCH: For products provided with a power switch, the power switch DOES NOT break the connection from the mains.

MAINS DISCONNECT: The plug shall remain readily operable. For rack-mount or installation where plug is not accessible, an all-pole mains switch with a contact separation of at least 3 mm in each pole shall be incorporated into the electrical installation of the rack or building.

FOR UNITS EQUIPPED WITH EXTERNALLY ACCESSIBLE FUSE RECEPTACLE: Replace fuse with same type and rating only.

MULTIPLE-INPUT VOLTAGE: This equipment may require the use of a different line cord, attachment plug, or both, depending on the available power source at installation. Connect this equipment only to the power source indicated on the equipment rear panel. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel or equivalent.

If connected to 240V supply, a suitable CSA/UL certified power cord shall be used for this supply.

IMPORTANT SAFETY INFORMATION

U.K. MAINS PLUG WARNING

A molded mains plug that has been cut off from the cord is unsafe. Discard the mains plug at a suitable disposal facility. NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAINS PLUG INTO A 13 AMP POWER SOCKET. Do not use the mains plug without the fuse cover in place. Replacement fuse covers can be obtained from your local retailer. Replacement fuses are 13 amps and MUST be ASTA approved to BS1362.

ELECTROMAGNETIC COMPATIBILITY

This device complies with part 15 of the FCC Rules and the Product specifications noted on the Declaration of Conformity. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

Operation of this unit within significant electromagnetic fields should be avoided.

- Use only shielded interconnecting cables.

USE GROUNDED OUTLET ONLY!

Apparatet må tilkoples jordet stikkontakt

Apparaten skall anslutas till jordat uttag

Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan

MAGNETIC FIELD

CAUTION! Do not locate sensitive high-gain equipment such as preamplifiers or tape decks directly above or below the unit. Because this amplifier has a high power density, it has a strong magnetic field which can induce hum into unshielded devices that are located nearby. The field is strongest just above and below the unit.

If an equipment rack is used, we recommend locating the amplifier(s) in the bottom of the rack and the preamplifier or other sensitive equipment at the top.

If you want to dispose this product, do not mix it with general household waste. There is a separate collection system for used electronic products in accordance with legislation that requires proper treatment, recovery and recycling.

Private household in the 25 member states of the EU, in Switzerland and Norway may return their used electronic products free of charge to designated collection facilities or to a retailer (if you purchase a similar new one).

For Countries not mentioned above, please contact your local authorities for a correct method of disposal.

By doing so you will ensure that your disposed product undergoes the necessary treatment, recovery and recycling and thus prevent potential negative effects on the environment and human health.

FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC CAUTION

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

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This transmitter module must not be colocated or operated in conjunction with any other antenna or transmitter. This End equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

CANADA STATEMENT

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

This device complies with Industry Canada's licence-exempt RSSs. Operation is subject to the following two conditions:

1. l'appareil ne doit pas produire de brouillage;
2. l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi,même si le brouillage est susceptible d'en compromettre le fonctionnement.

CAUTION EXPOSURE

This device meets the exemption from the routine evaluation limits in section 2.5 of RSS102 and users can obtain Canadian information on RF exposure and compliance.

Le dispositif répond à l'exemption des limites d'évaluation de routine dans la section 2.5 de RSS102 et les utilisateurs peuvent obtenir des renseignements canadiens sur l'exposition aux RF et le respect.

THE FINAL END PRODUCT MUST BE LABELLED IN A VISIBLE AREA WITH THE FOLLOWING

The Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the Industry Canada certification number of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows: "Contains transmitter module IC: 6132A-MB8811VMA"

This End equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.

Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

The end user manual shall include all required regulatory information/warning as shown in this manual.

EC - DECLARATION OF CONFORMITY

Brand: JBL
Equipment Type: Commercial Mixer-Amplifiers
Model names: VMA160, VMA1120, VMA1240, VMA260, VMA2120

We, Harman International, declare under our sole responsibility that the product, to which this declaration relates, is in conformity with the following standards.

Report No.	Description
EN 55103-1:2009 +A1:2012	EMC Compatibility – Product Family Standard for Audio, Video, Audio-Visual and Entertainment Lighting Control Apparatus for Professional Use, Part 1: Emissions
EN 55103-1:2009 +A1:2012	Field Emissions – Annex A @ 10cm and 20cm
EN 61000-3-2:2014	Limits for Harmonic Current Emissions (equipment input current less than or equal to 16A)
EN 61000-3-3:2013	Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply systems Rated Current less than or equal to 16A
EN 55022:2010	Limits and Methods of Measurement of Radio Disturbance Characteristics of ITE: Radiated & Conducted, Class B Limits
EN 55103-2:2009	EMC Compatibility – Product Family Standard for Audio, Video, Audio-Visual and Entertainment Lighting Control Apparatus for Professional Use, Part 2: Immunity
EN 61000-4-2:2009 Ed 9	Electrostatic Discharge Immunity (Environment E2-Criteria B, 4k V Contact, 8k V Air Discharge)
EN 61000-4-3:2010 Ed 3.2	Radiated, Radio-Frequency, EMC Immunity (Environment E2, Criteria A)
EN 61000-4-4:2012 Ed 12	Electrical Fast Transient/Burst Immunity (Criteria B)
EN 61000-4-5:2014	Surge Immunity (Criteria B)
EN 61000-4-6:2014	Immunity to Conducted Disturbances Induced by Radio-Frequency Fields (Criteria A)
EN 61000-4-11:2004	Voltage Dips, Short Interruptions and Voltage Variation
Safety Standard:	
IEC 60065:2014 Ed8 EN 60065:2014	Safety Requirements – Audio, Video, and Similar Electronic Apparatus

Due to line current harmonics, we recommend that you contact your supply authority before connection.

We certify that the product identified above conforms to the requirements of the EMC Council Directive 89/336/EEC as amended by 92/31/EEC, and the Low Voltage Directive 73/23/EC as amended by 93/68/EEC.

Appendix A: Target Performance Specifications

Performance	VMA160	VMA1120	VMA1240	VMA260	VMA2120
Max Output Power per Channel into 4 Ω or 8 Ω; 1kHz, ≤ 0.5% THD	60W	120W	240W	60W	120W
Insertion Loss (70V & 100V outputs)	1 dB maximum				
Number of Input Channels	5	5	5	8	8
Number of Output Channels	1	1	1	2	2
Tone Controls (Bass and Treble non-detented potentiometers on each channel)	Bass +/-14dB @ 50Hz Treble +/-14dB @ 10kHz				
Input Sensitivity (to obtain full rated power into 8 Ω load)	Mic Input: 5.5mV_{RMS} Line Input: 1.3V_{RMS} RCA Input (stereo in): 130mV_{RMS}				
Frequency Response (measured at 2.83V_{RMS} into rated load impedance at any output)	4/8 Ω Output: 20Hz - 20kHz, +/-2dB 70V/100V Outputs: 80Hz - 15kHz +/-3dB				
Total Harmonic Distortion (THD) (measured at 2.83V_{RMS} into rated load impedance at any output)	Power Amp Output: <0.5%, 20Hz - 20kHz				
Signal-to-Noise Ratio (Ref. Rated Power, mixer levels @ min., master volume @ max. A-weighted)	>76dB				
Input Impedance (nominal)	Mic: 400 Ω Line: 20 kΩ (balanced) RCA: 50 kΩ				
Phantom Power	27VDC				
Crosstalk (reference rated power, volume at mid position, 1kHz)	-70 dB				
Nominal AC Line Voltages	100V, 120V, 220V, 220-240V, 50/60 Hz				
Minimum Load Impedance Low Impedance Output 70V Output 100V Output	 4 Ω 80 Ω 160 Ω	 4 Ω 40 Ω 80 Ω	 4 Ω 20 Ω 40 Ω	 4 Ω 80 Ω 160 Ω	 4 Ω 40 Ω 80 Ω
Operating Temperature/ Humidity	0°C to 35°C @ 95% R.H. (non-condensing)				
Storage Temperature	-20°C to 85°C				
Dimensions & Weight					
Net Weight	19.4 lb (8.8 kg)	20.2 lb (9.2 kg)	25.5 lb (11.6 kg)	25.5 lb (11.6 kg)	29.3 lb (13.3 kg)
Dimensions	Width: 17.0 in. (432 mm) Depth: 16.3 in. (415 mm) Height: 3.5 in. (88 mm)				
Shipping Weight	24.6 lb (11.2 kg)	25.5 lb (11.6 kg)	30.8 lb (14 kg)	30.8 lb (14 kg)	34.5 lb (15.7 kg)

1.2 Front Panel Controls & Indicators

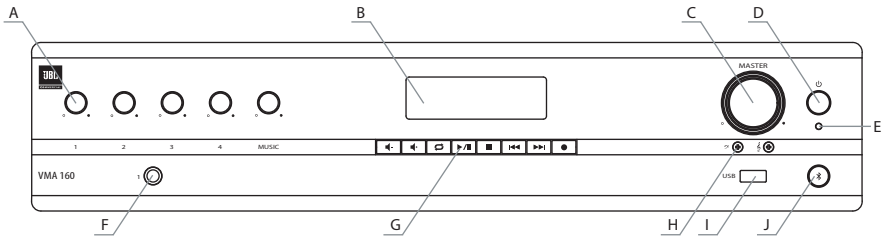


Figure 1.2.1 Front Panel, 1 Channel Model

A. Input Level Controls

B. Media Player Display

C. Output Volume Control(s) Including an Illuminated ring around the output volume control will light green with signal presence while red indicates clipping, i.e. the signal has reached the threshold of audible distortion

D. Power Switch

E. Power on LED illuminates blue when power is switched on.

F. Input 1 - Front panel audio input capability via 1/4” TRS connector. The two channel model includes a second, similar input (Input 4).

G. Media Player Controls

H. Tone Controls - Bass 𝄢 and Treble 𝄞 potentiometers for each output channel.

I. USB Audio Input

J. Bluetooth Key and Indicator

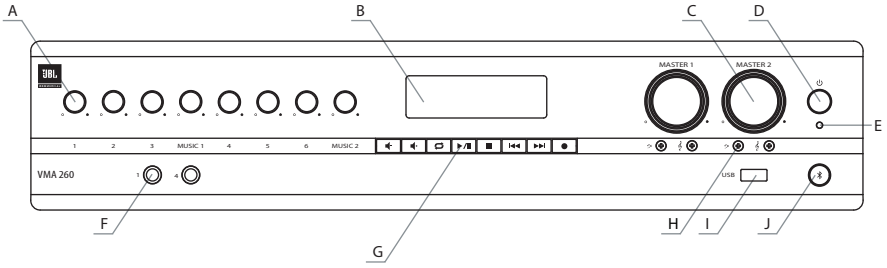


Figure 1.2.2 Front Panel, 2 Channel Model

1.3 Rear Panel Controls & Connectors (VMA160, VMA1120, VMA1240)

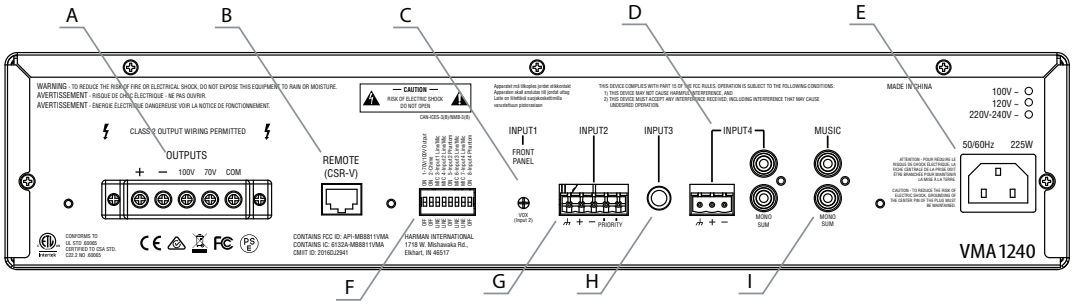


Figure 1.3.1 Rear Panel - VMA 1240

A. Amplifier output connectors.

B. Remote volume connectors – RJ-45 style connector to connect to JBL CSR-V control module.

C. VOX sensitivity adjustment for Input 1.

D. Input 4 may use either Euroblock or RCA style connector.

E. AC Power Inlet – Detachable IEC.

F. Configuration switches control mic/line gain settings and phantom power for the inputs as well as enable the chime and 70V/100V output mode.

G. Input 2 – Euroblock connector provides for audio input and priority contacts that will duck other channels during an announcement when contacts closed using a switch.

H. Input 3 accepts a 1/4” TRS connector.

I. Music input uses a Dual RCA Connector. Stereo, unbalanced sources will be summed together.

1.4 Rear Panel Controls & Connectors (VMA260 & VMA2120)

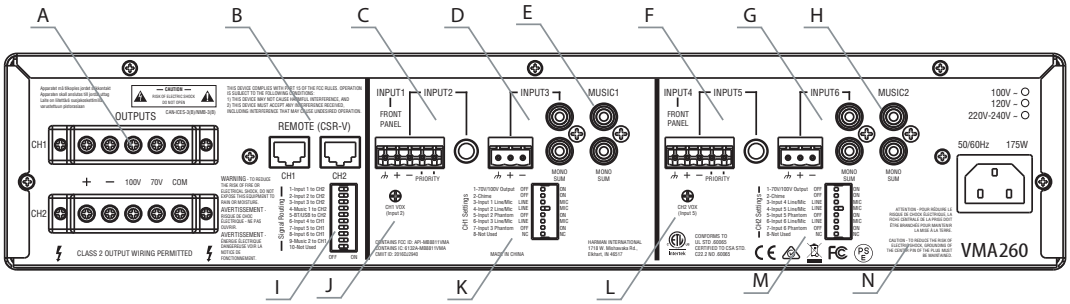


Figure 1.4.1 Rear Panel - VMA 260

A. Amplifier output connectors.

B. Remote volume connectors – RJ-45 style connector to connect to JBL CSR-V control modules.

C. Input 2 – Input audio through either the Euroblock connector or the 1/4” TRS connector. Pins 4 and 5 of the Euroblock are priority contacts that will duck other channels during an announcement when the contacts are closed using a switch.

D. Input 3 accepts input through either the 3-pin Euroblock or the Dual RCA jacks. Stereo, unbalanced sources will be summed into a mono signal.

E. Music1 input uses a Dual RCA Connector. Stereo, unbalanced sources will be summed together.

F. Input 5 – Input audio through either the Euroblock connector or the 1/4” TRS connector. Pins 4 and 5 of the Euroblock are priority contacts that will duck other channels during an announcement when the contacts are closed using a switch.

G. Input 6 accepts input through either the 3-pin Euroblock or the Dual RCA jacks. Stereo, unbalanced sources will be summed together.

H. Music2 input uses a Dual RCA Connector. Stereo, unbalanced sources will be summed together.

I. Signal Routing DIP switch is used to route inputs to both output channels. By default, each group of inputs is routed only to its respective output channel (Input 1 – Music1 are routed to output CH1, Input 4 – Music2 are routed to output CH2).

J. VOX sensitivity adjustment for Input 1.

K. CH1 Settings DIP switch is used to enable the 70V/100V output option, turn on the chime feature, select input gain, and enable phantom power for CH1.

L. VOX sensitivity adjustment for Input 4.

M. CH2 Settings DIP switch is used to enable the 70V/100V output option, turn on the chime feature, select input gain, and enable phantom power for CH2.

N. AC Power Inlet – Detachable IEC.

4.0 Troubleshooting

CONDITION: No power to the mixer-amplifier so that the power LED is not illuminated.

POSSIBLE REASON: The mixer-amplifier is not plugged into the power outlet.

CONDITION: No sound or low sound.

POSSIBLE REASON: The input signal is not present or at a very low level.

POSSIBLE REASON: The Master Volume control is turned down.

POSSIBLE REASON: A CSR-V is connected and turned down.

POSSIBLE REASON: Mixer channel inputs are turned down.

POSSIBLE REASON: A Priority switch is closed, muting all except the priority input.

POSSIBLE REASON: The 70V/100V switch is OFF while using the 70V or 100V outputs.

CONDITION: Distorted sound.

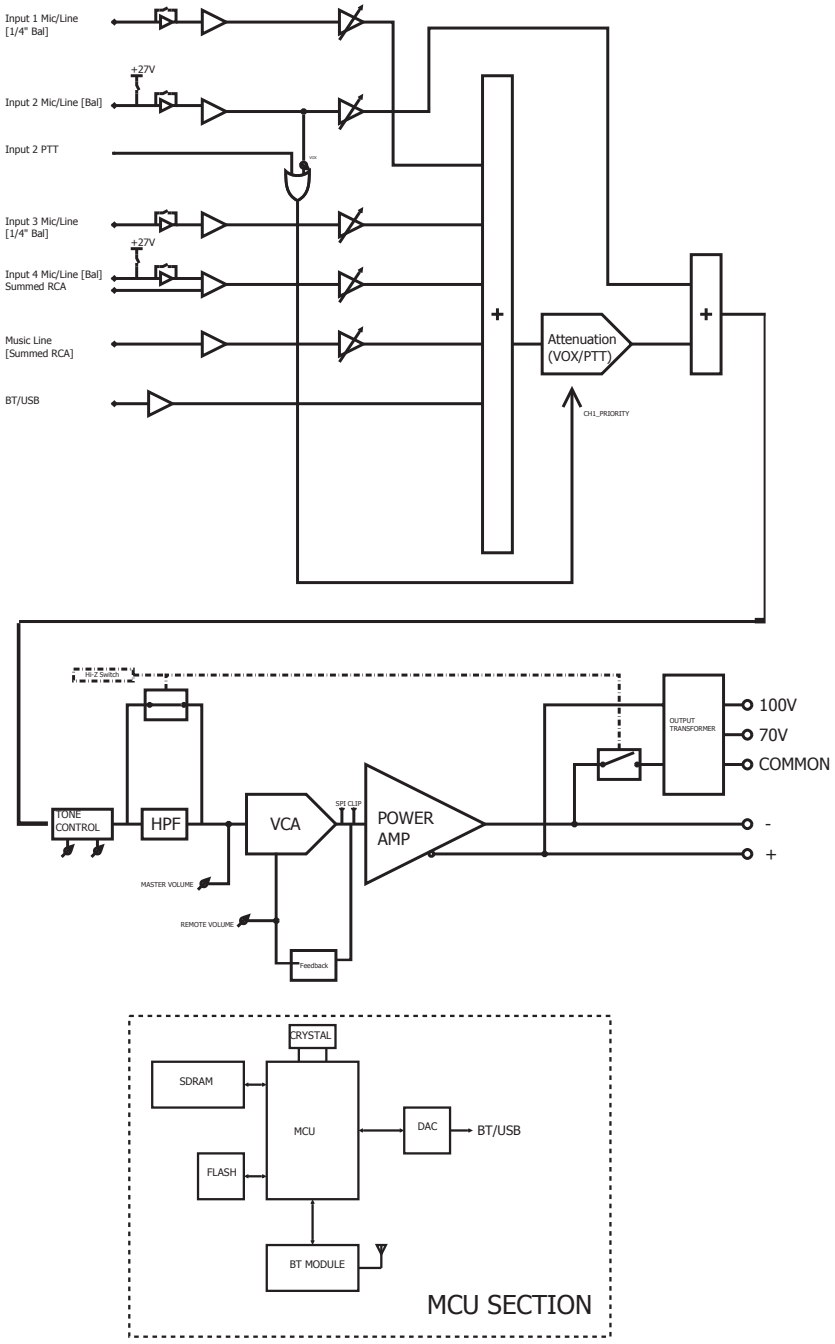
POSSIBLE REASON: Input signal level is too high. Please turn down the input level controls. Note that the mixer-amplifier should not be operated at a level that allows the clip indicator (red ring around the Master Volume) to be constantly ON.

POSSIBLE REASON: Master Volume is too high.

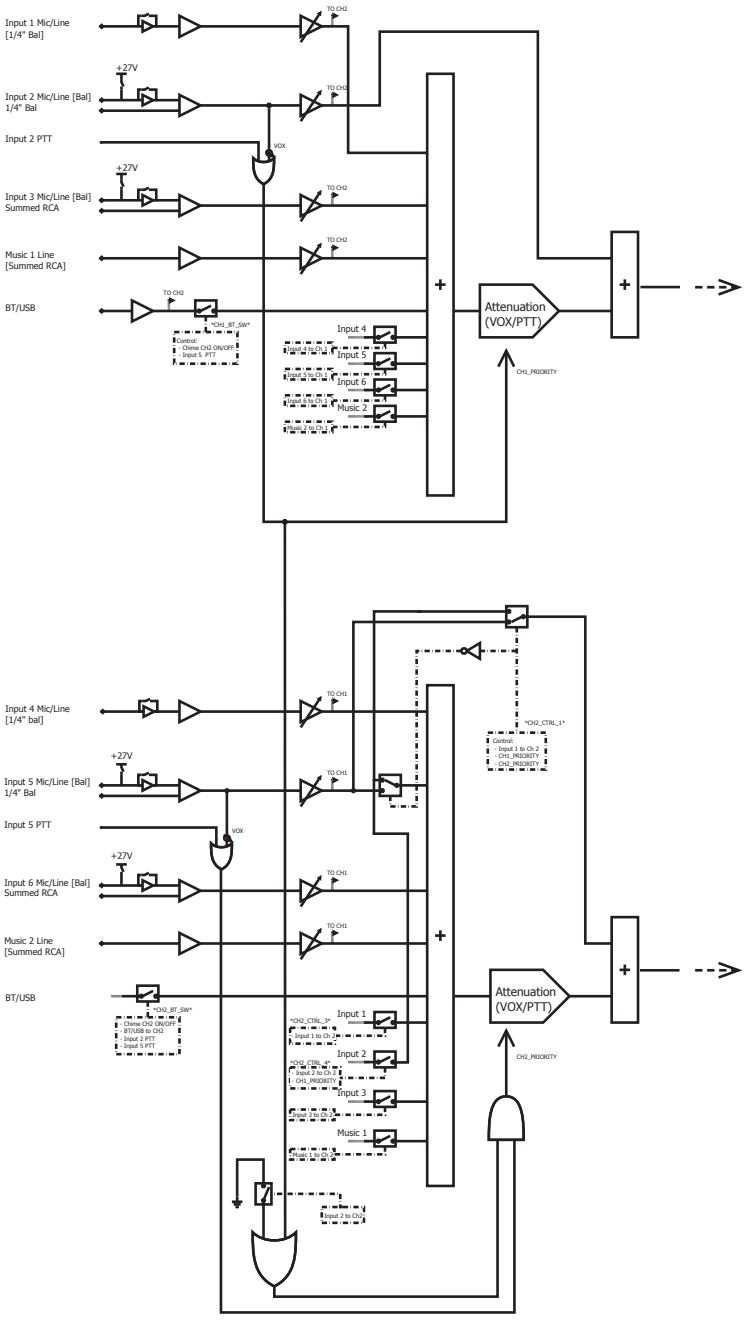
POSSIBLE REASON: MIC/LINE switch is in MIC position when using a line level source.

Block Diagrams

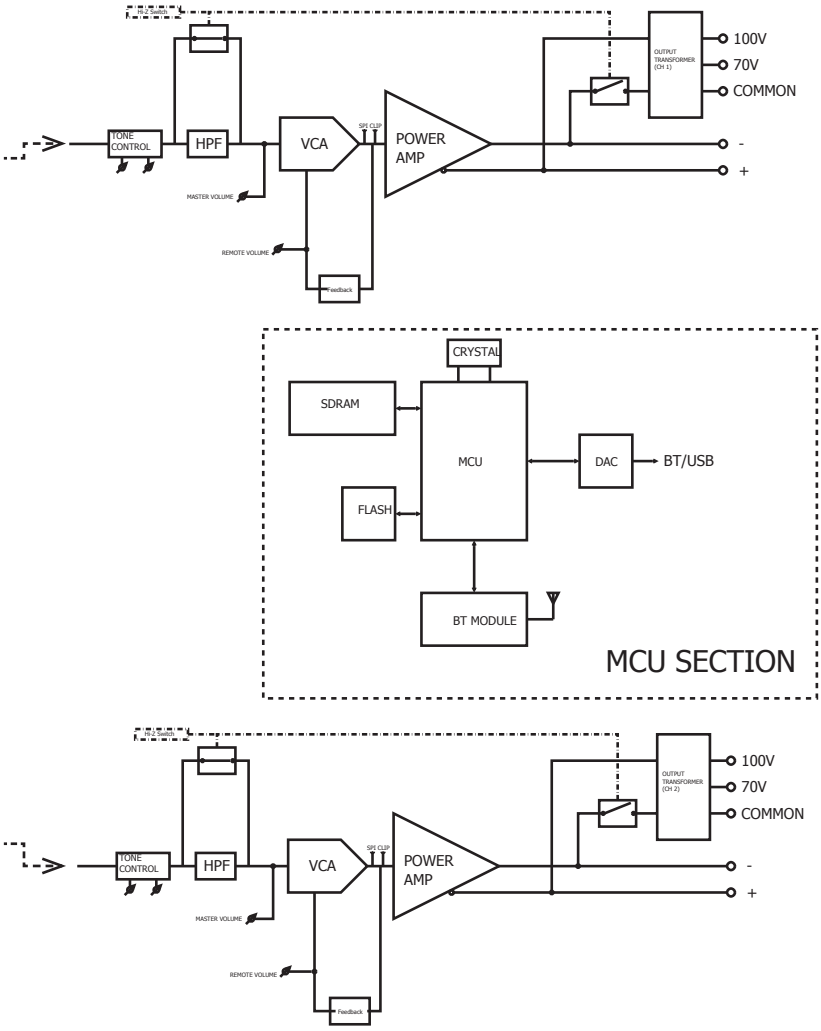
VMA160, VMA1120 & VMA1240



VMA260 & VMA2120

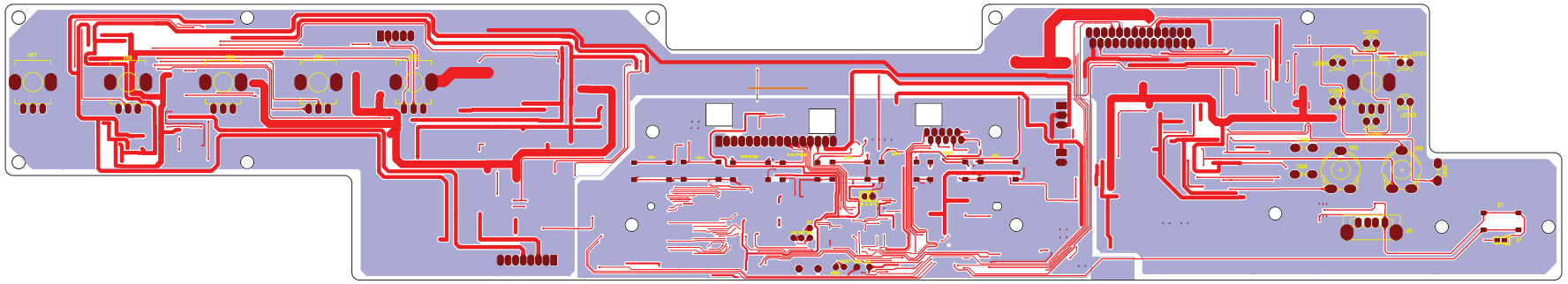


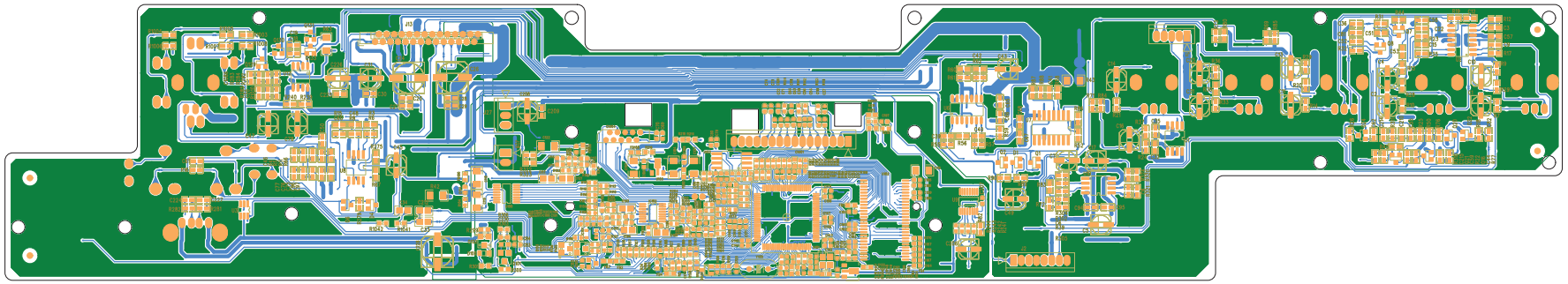
VMA260 & VMA2120 Continued



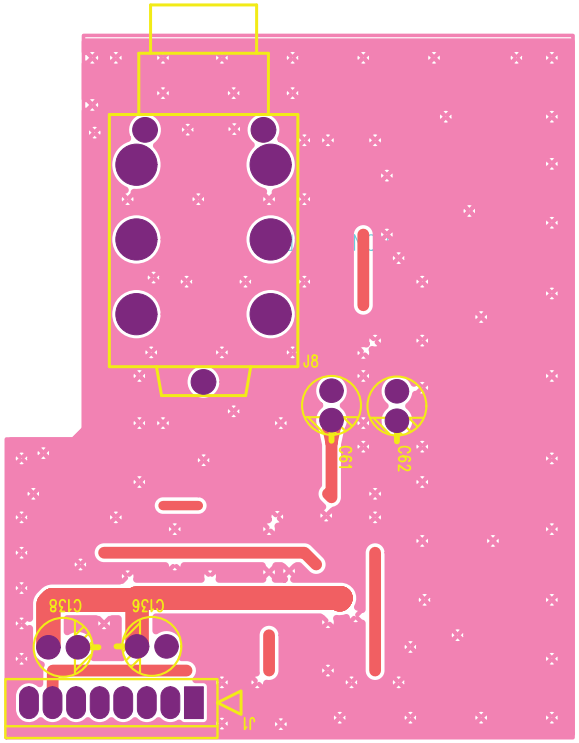
5087020_PCB,ASY,VMA_1CH _FRONT_PANEL

For VMA160/1120/1240

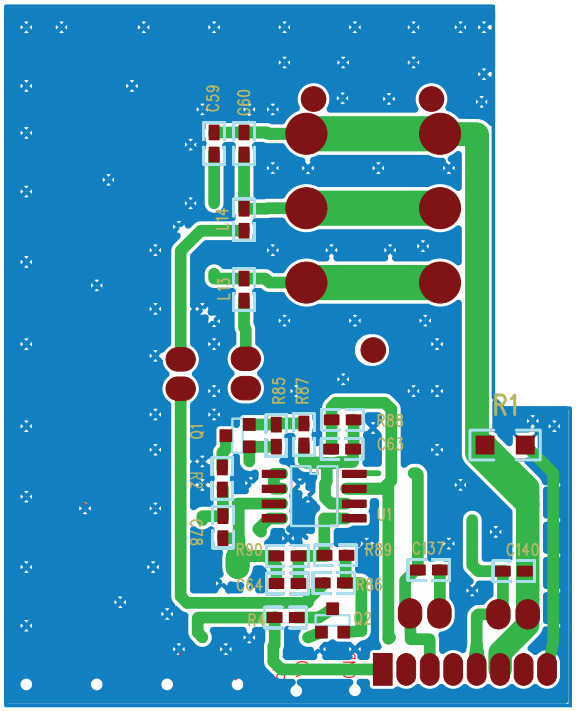




5087021_PCB,ASY,VMA_1CH _FRONT_INPUT

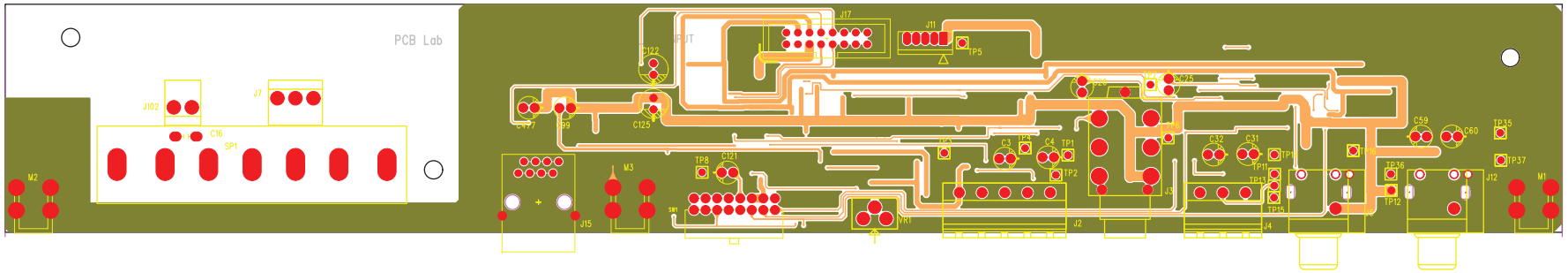


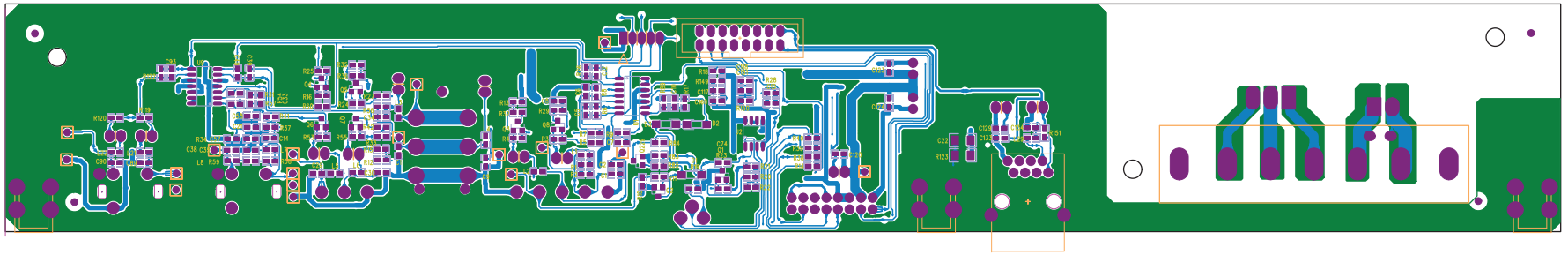
For VMA160/1120/1240



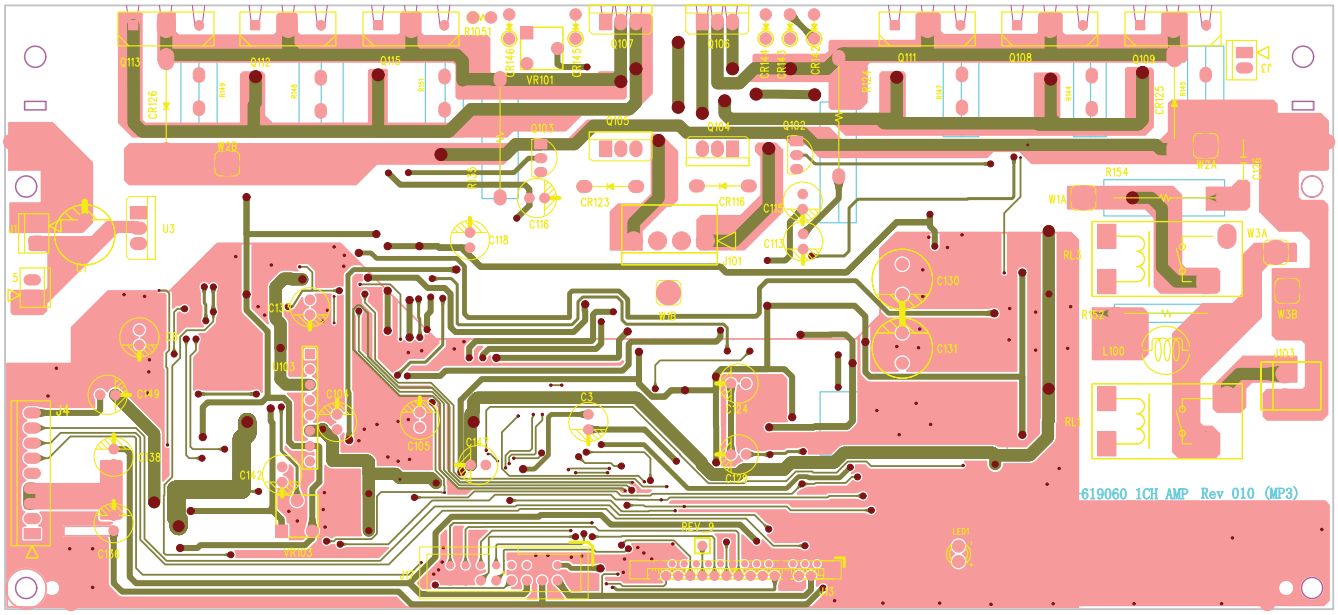
5087024_PCB,ASY,VMA_1CH _REAR_INPUT

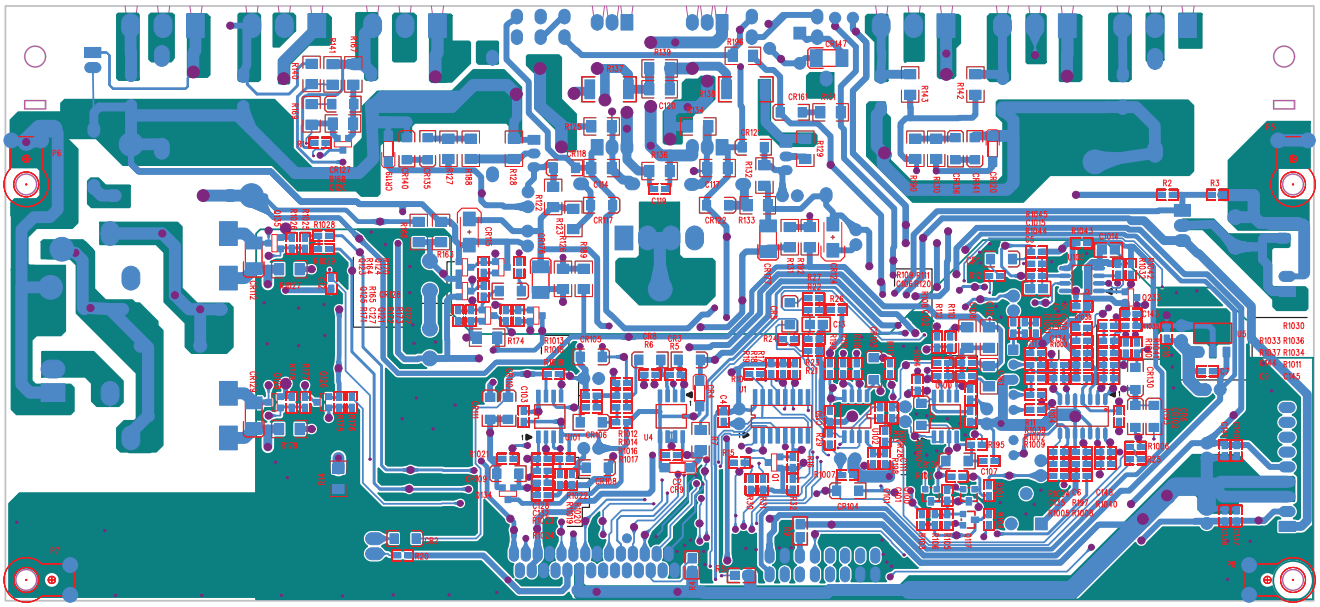
For VMA160/1120/1240





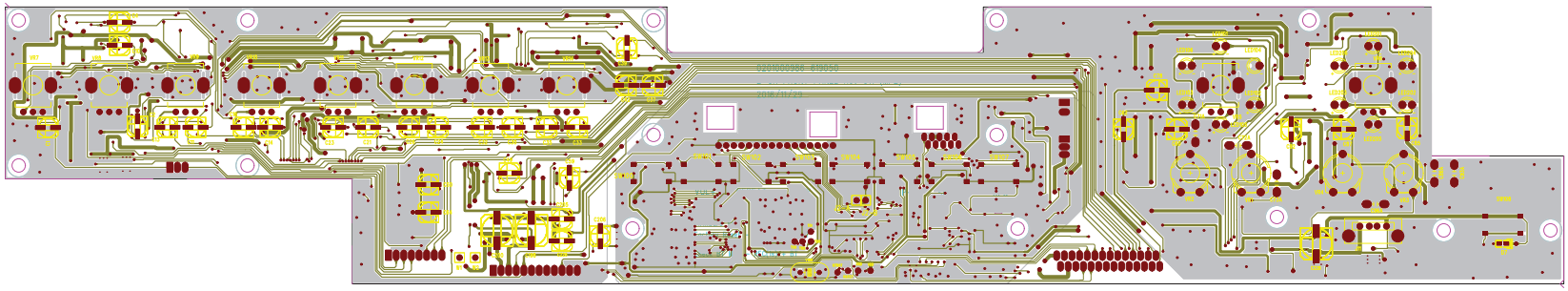
AMP_PCB_VMA160/1120/1240

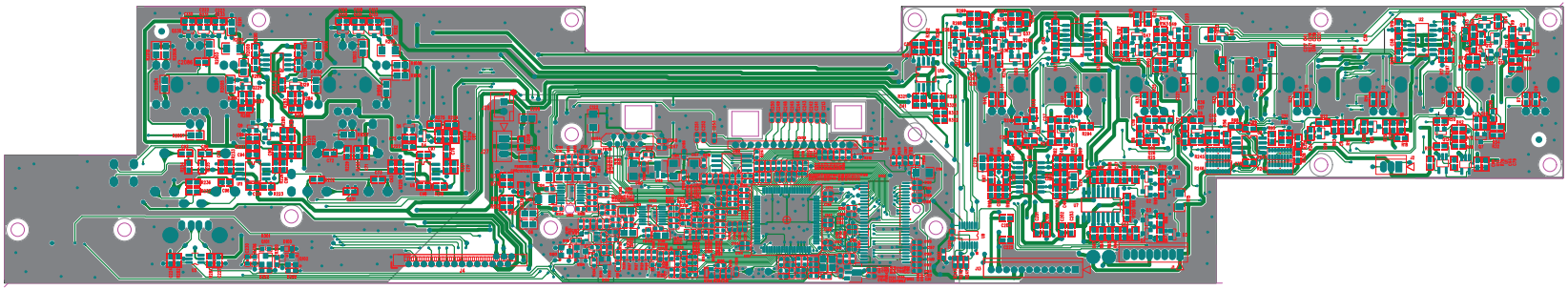




5086659,PCB,ASY,VMA_2CH _FRONT_PANEL

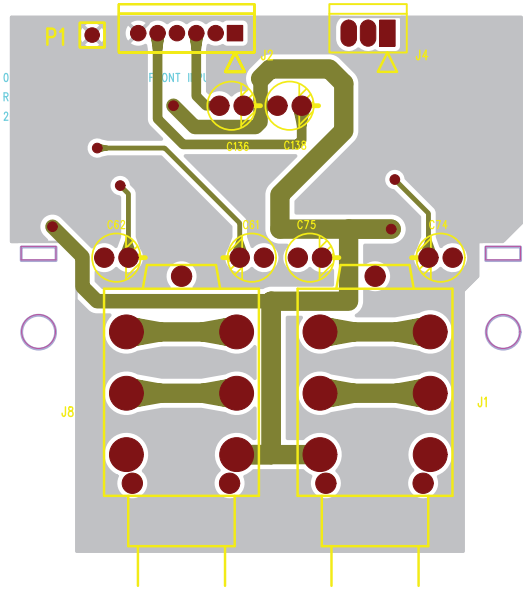
For VMA 260/2120

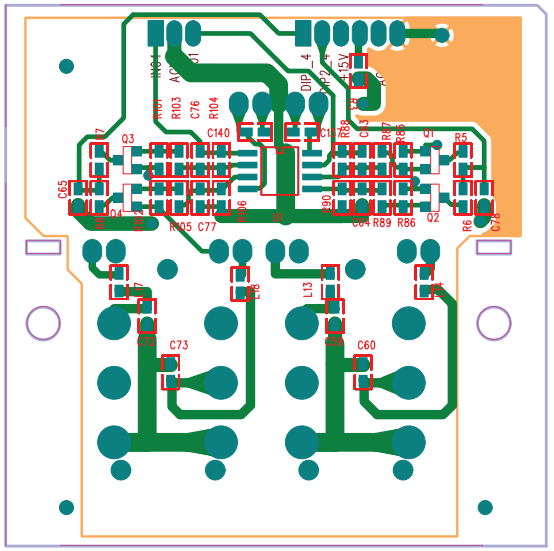




5086663,PCB,ASY,VMA_2CH_FRONT_INPUT,PCB

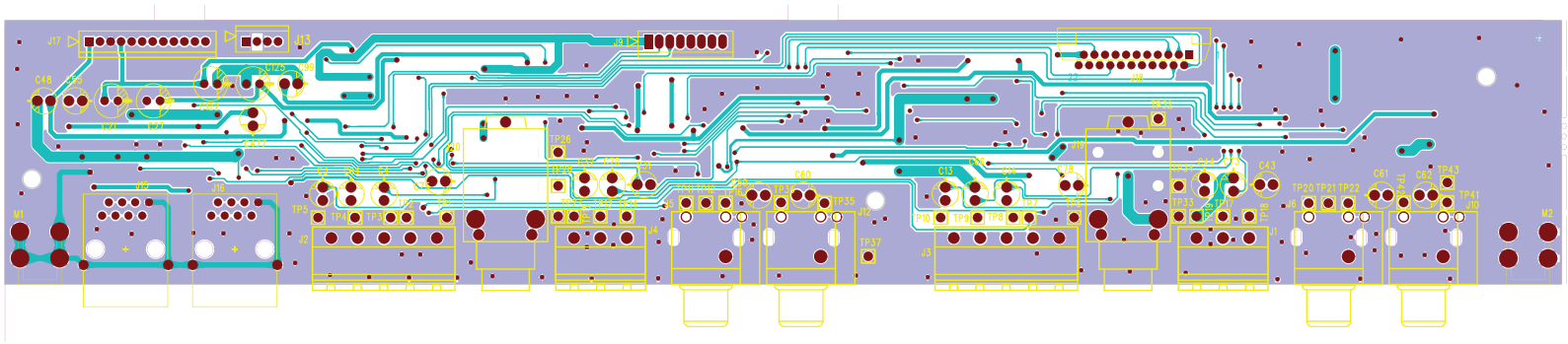
For VMA 260/2120

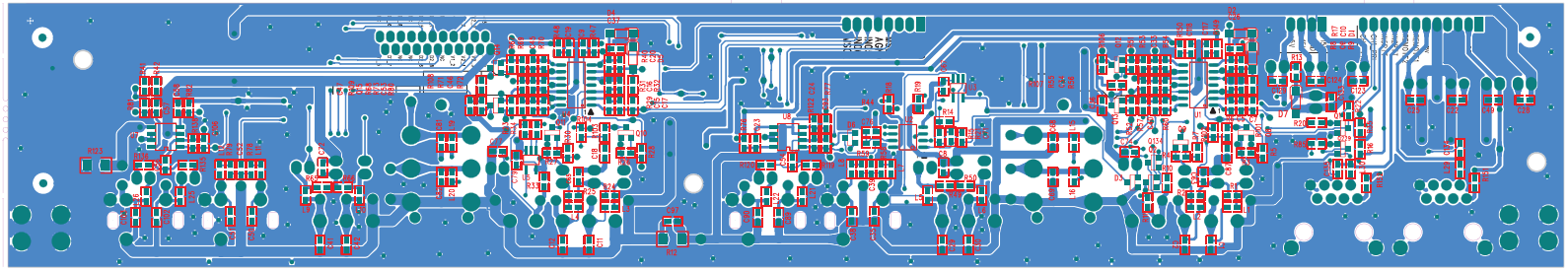




5086667,PCB,ASY,VMA_2CH_REAR_INPUT,PCB

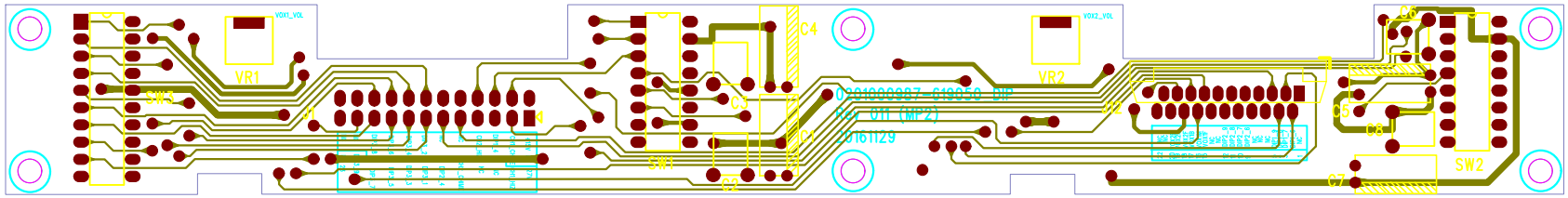
For VMA 260/2120

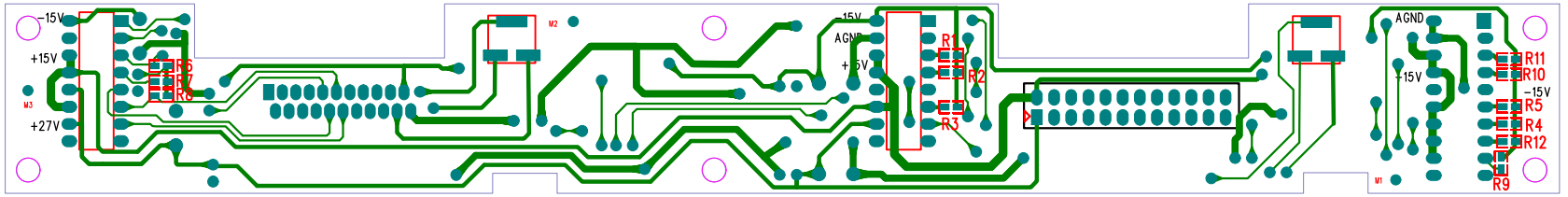




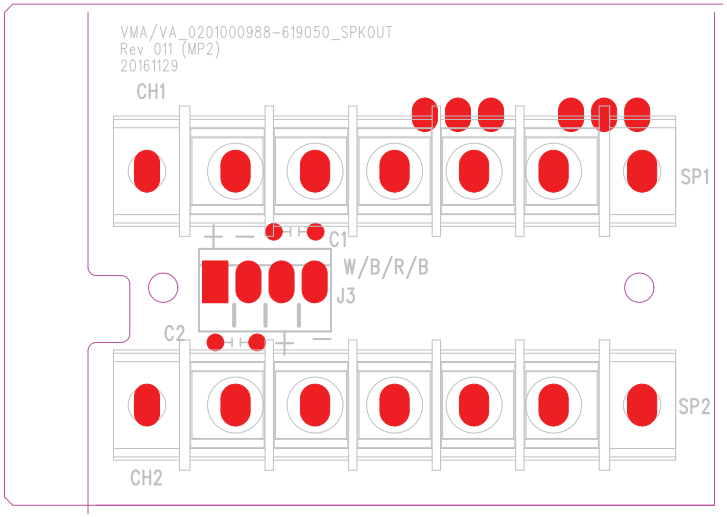
5086662,PCB,ASY,VMA_2CH_DIP,PCB

For VMA260/2120

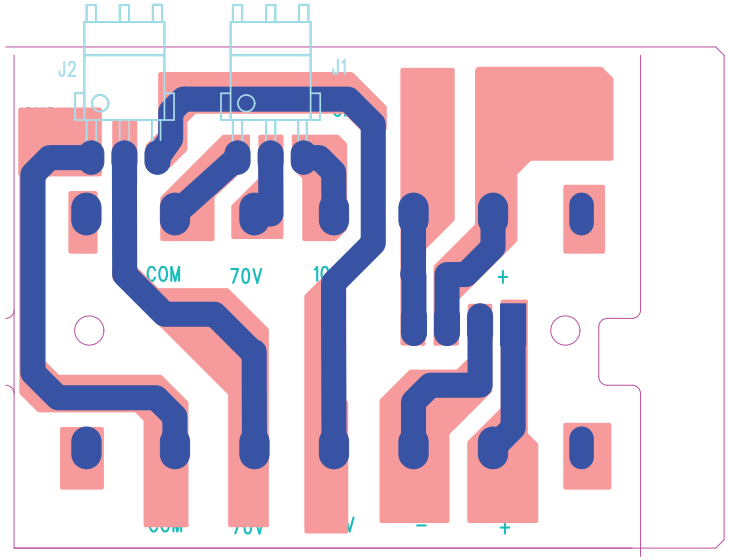




5086669,PCB,ASY,VMA_2CH_OUTPUT,PCB

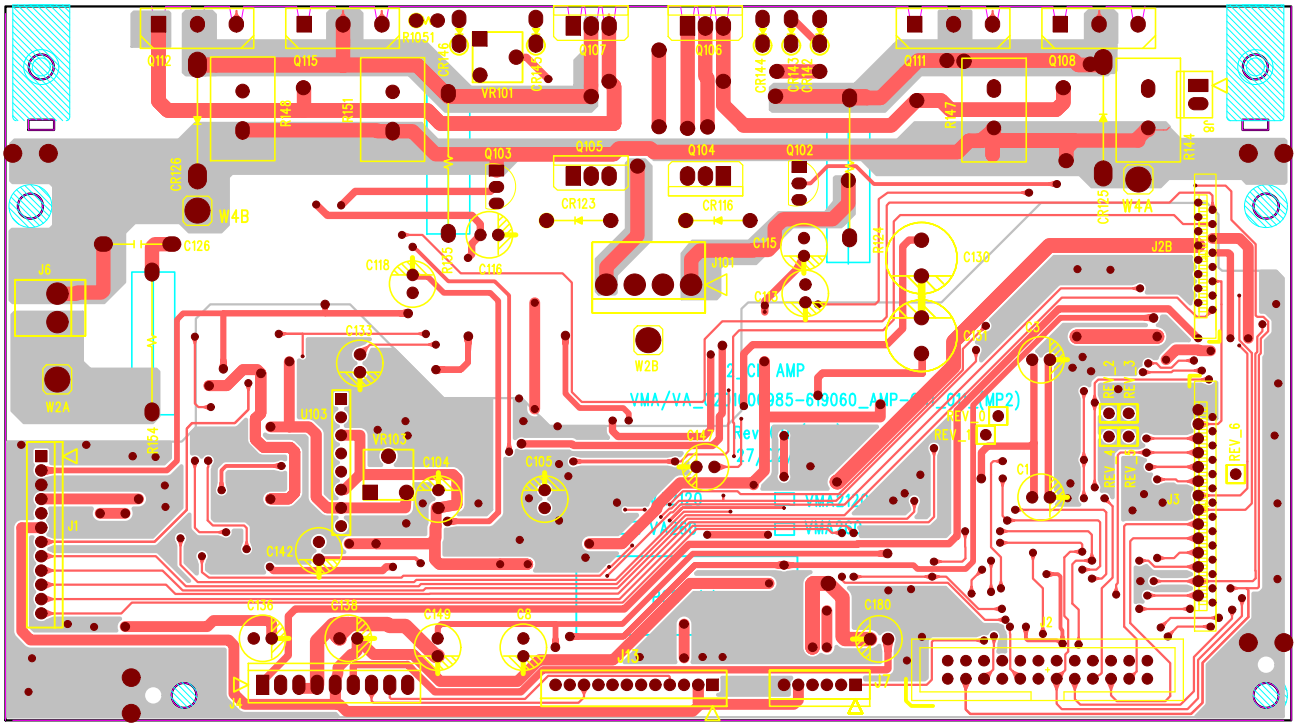


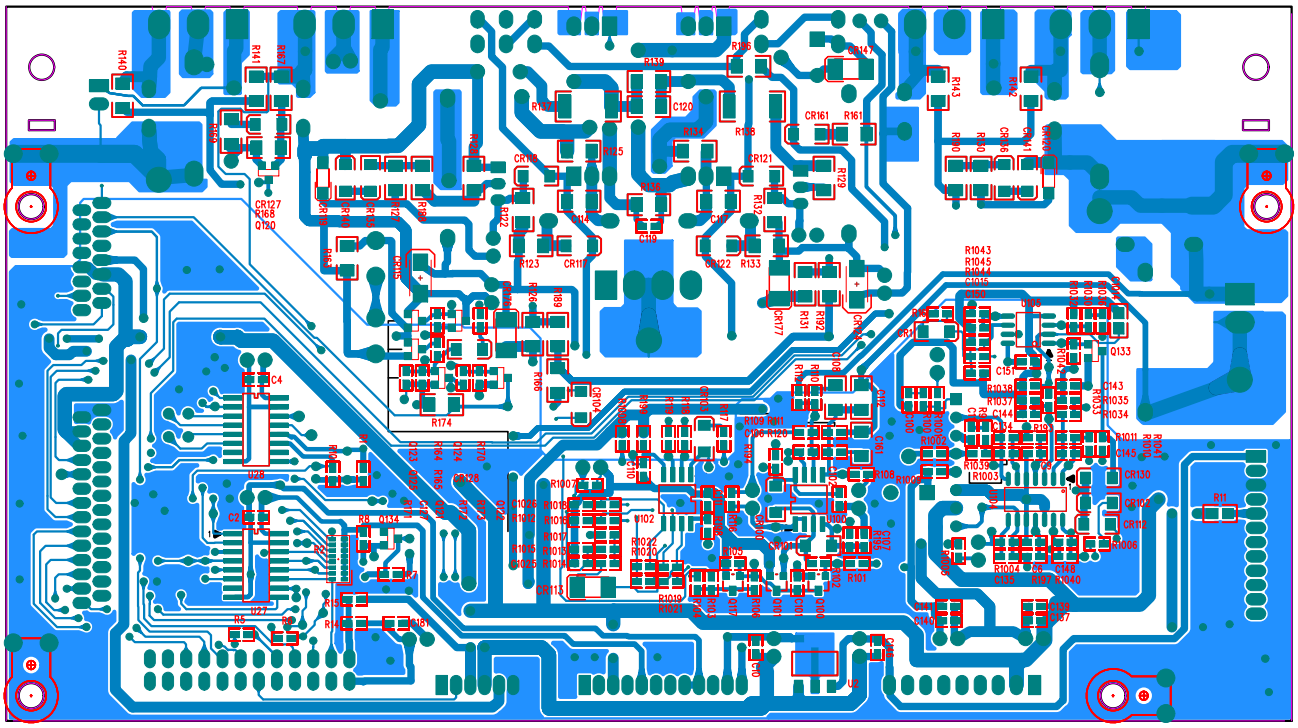
For VMA 260/2120



PCB,ASY,CH1_AMP

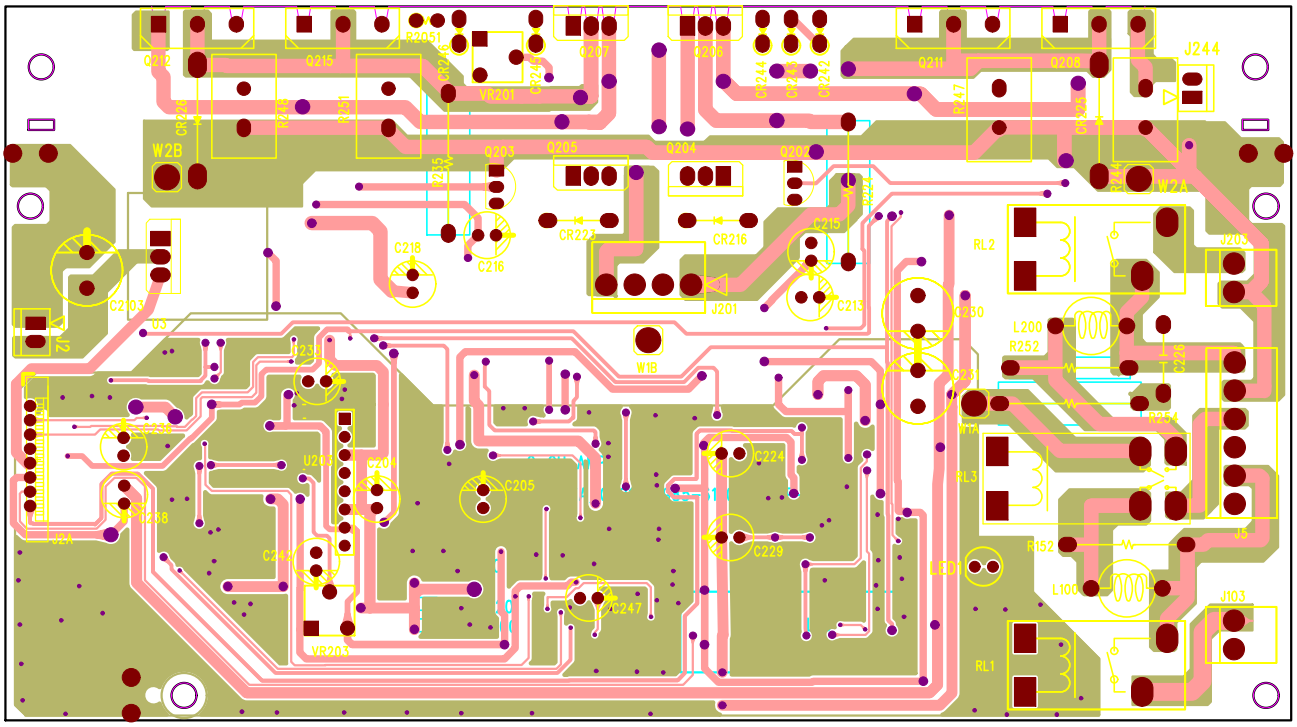
For VMA 260/2120

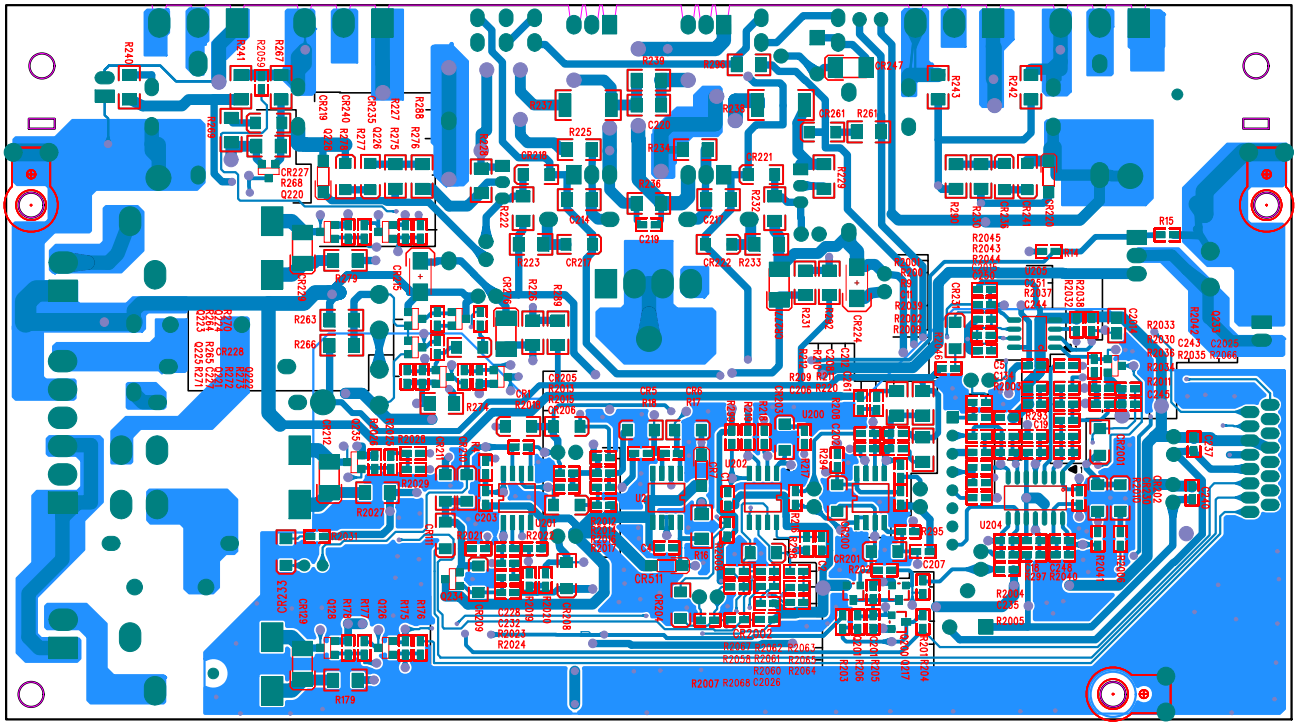




PCB,ASY,CH2_AMP

For VMA 260/2120





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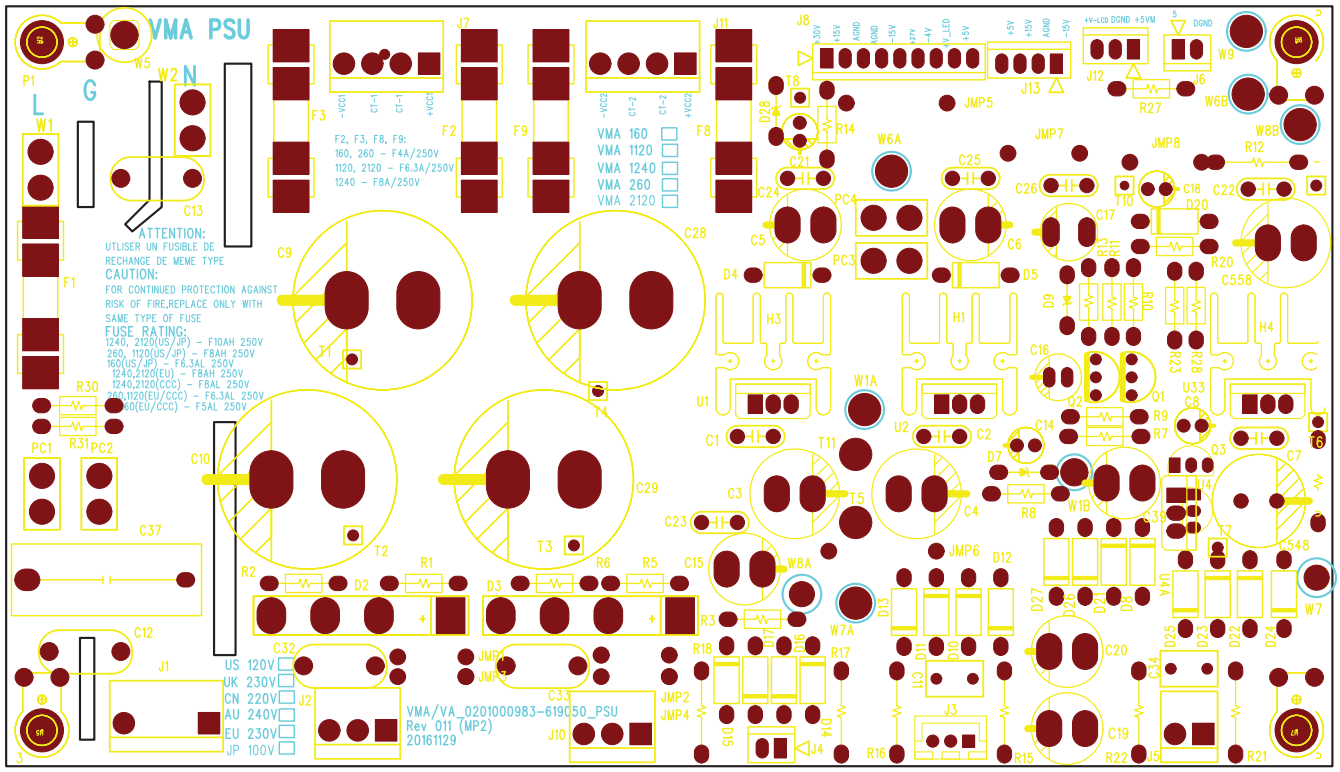
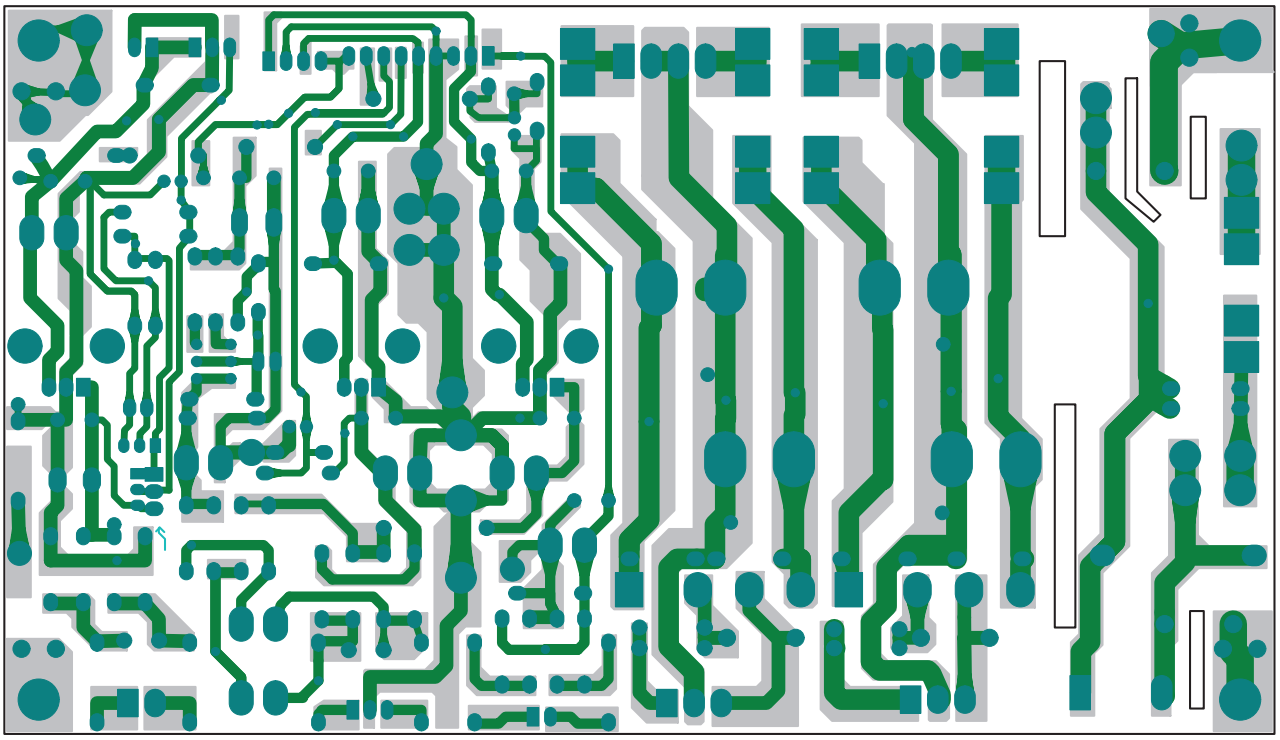
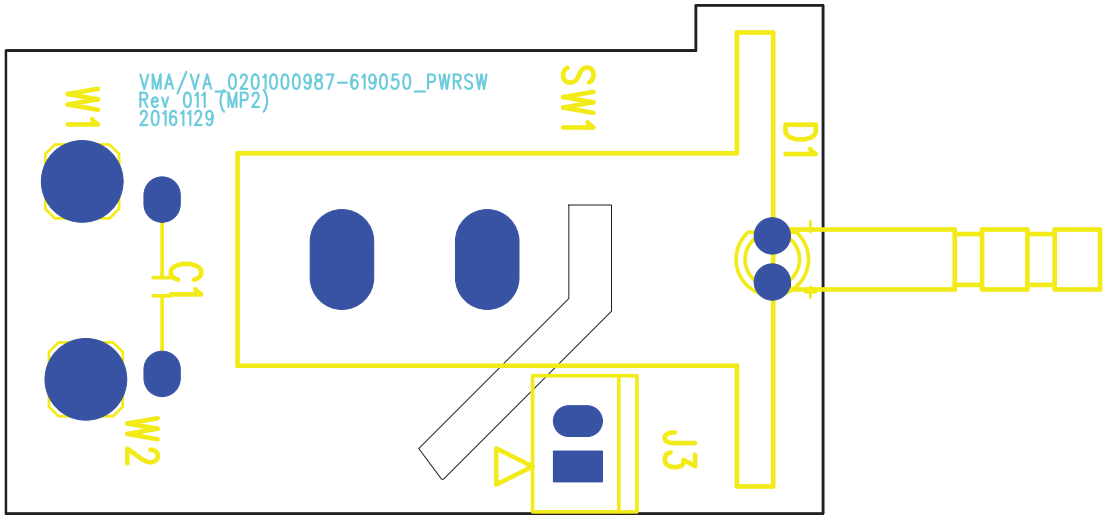
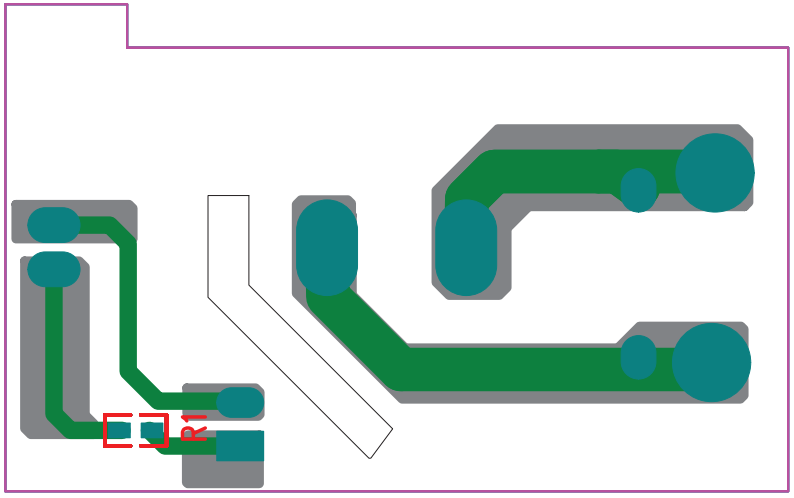


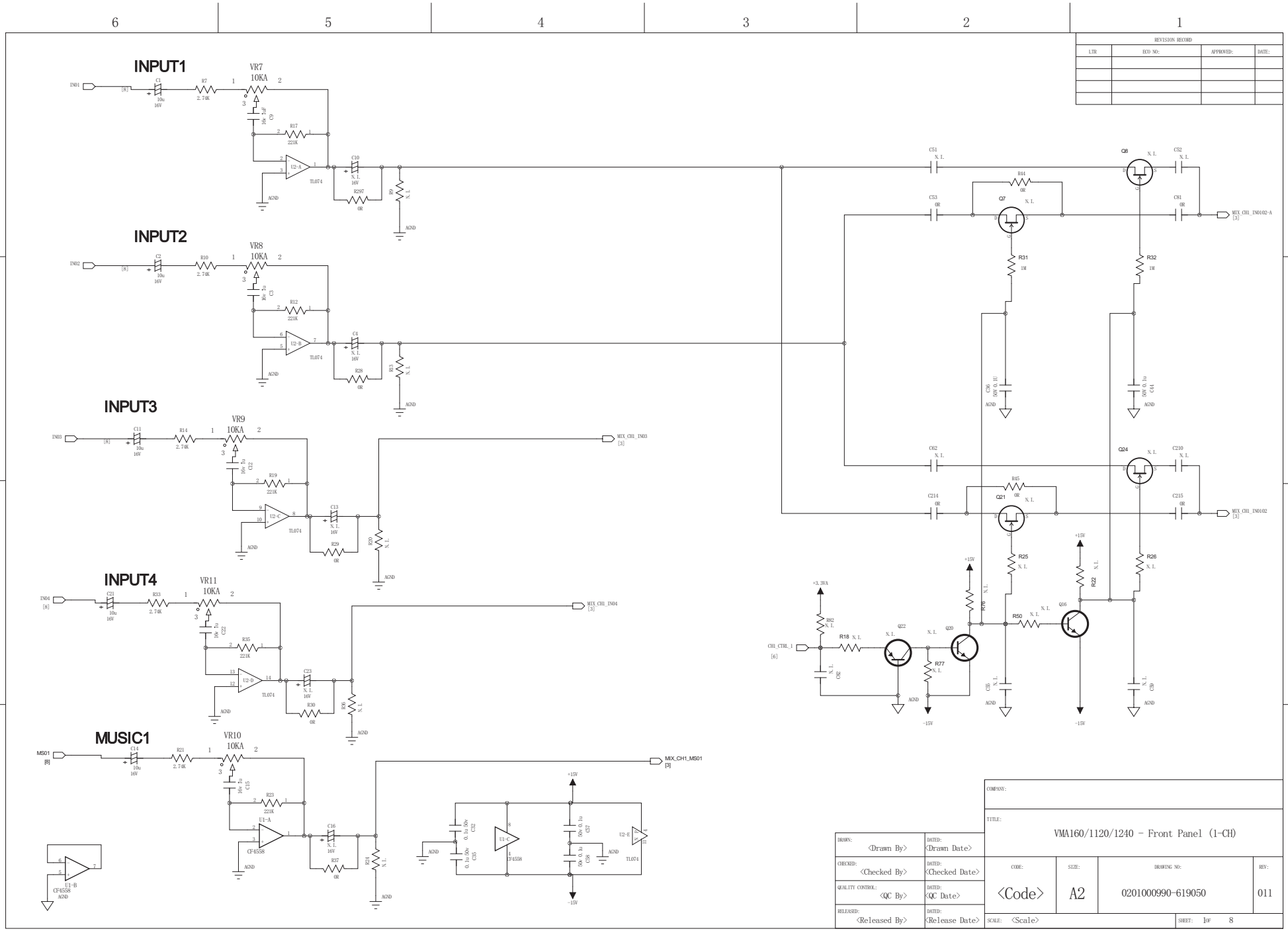


2-CH POWER SWITCH

FOR VMA 160/1120/1240/260/2120



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INPUT2
INPUT3
INPUT4
MUSIC1
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
COMPANY:
TITLE:
VMA160/1120/1240 - Front Panel (1-CH)
DRAWN: <Drawn By>
DATED: <Drawn Date>
CHECKED: <Checked By>
DATED: <Checked Date>
QUALITY CONTROL: <QC By>
DATED: <QC Date>
RELEASED: <Released By>
DATED: <Release Date>
CODE: <Code>
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DRAWING NO: 0201000990-619050
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SHEET: 1OF 8

REVISION RECORD			
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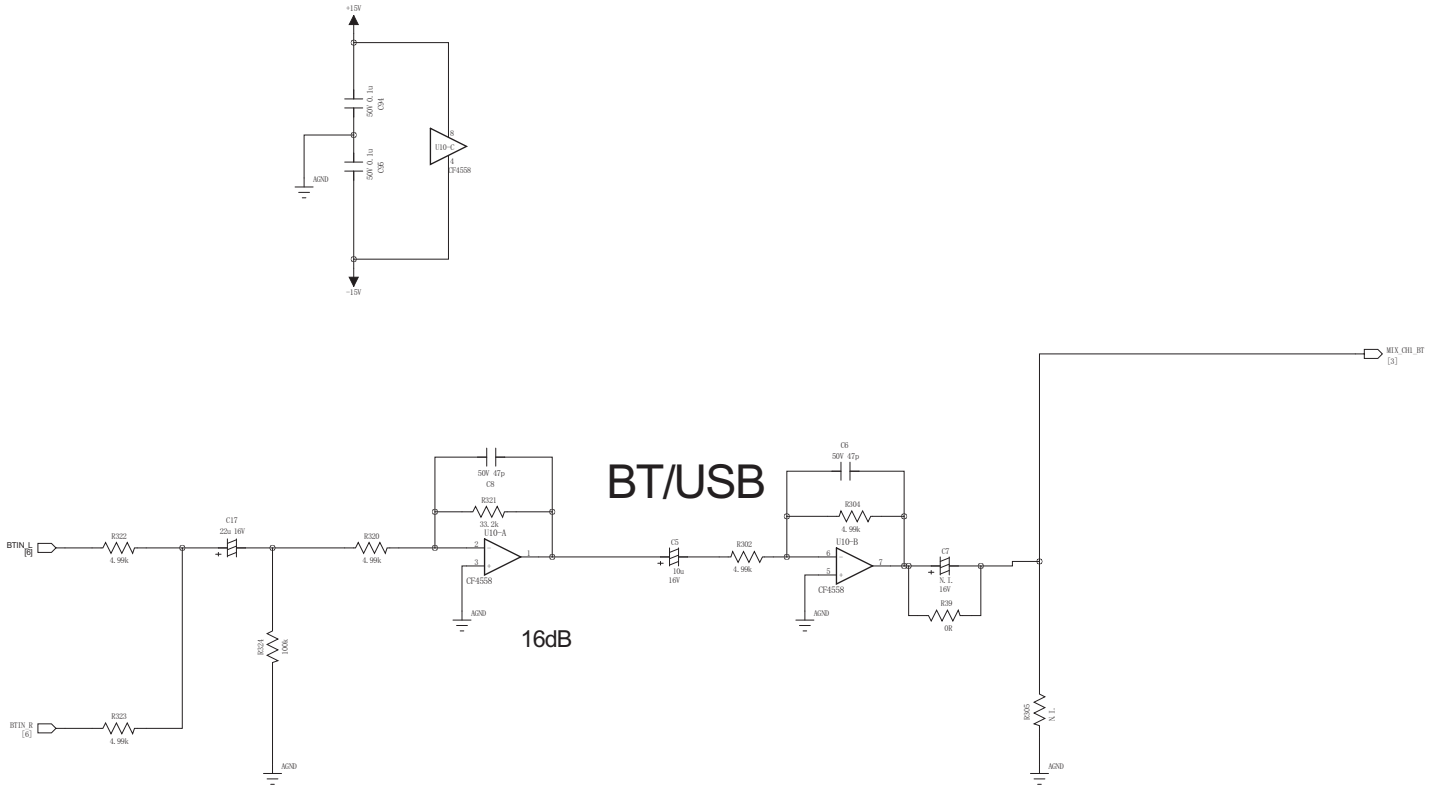

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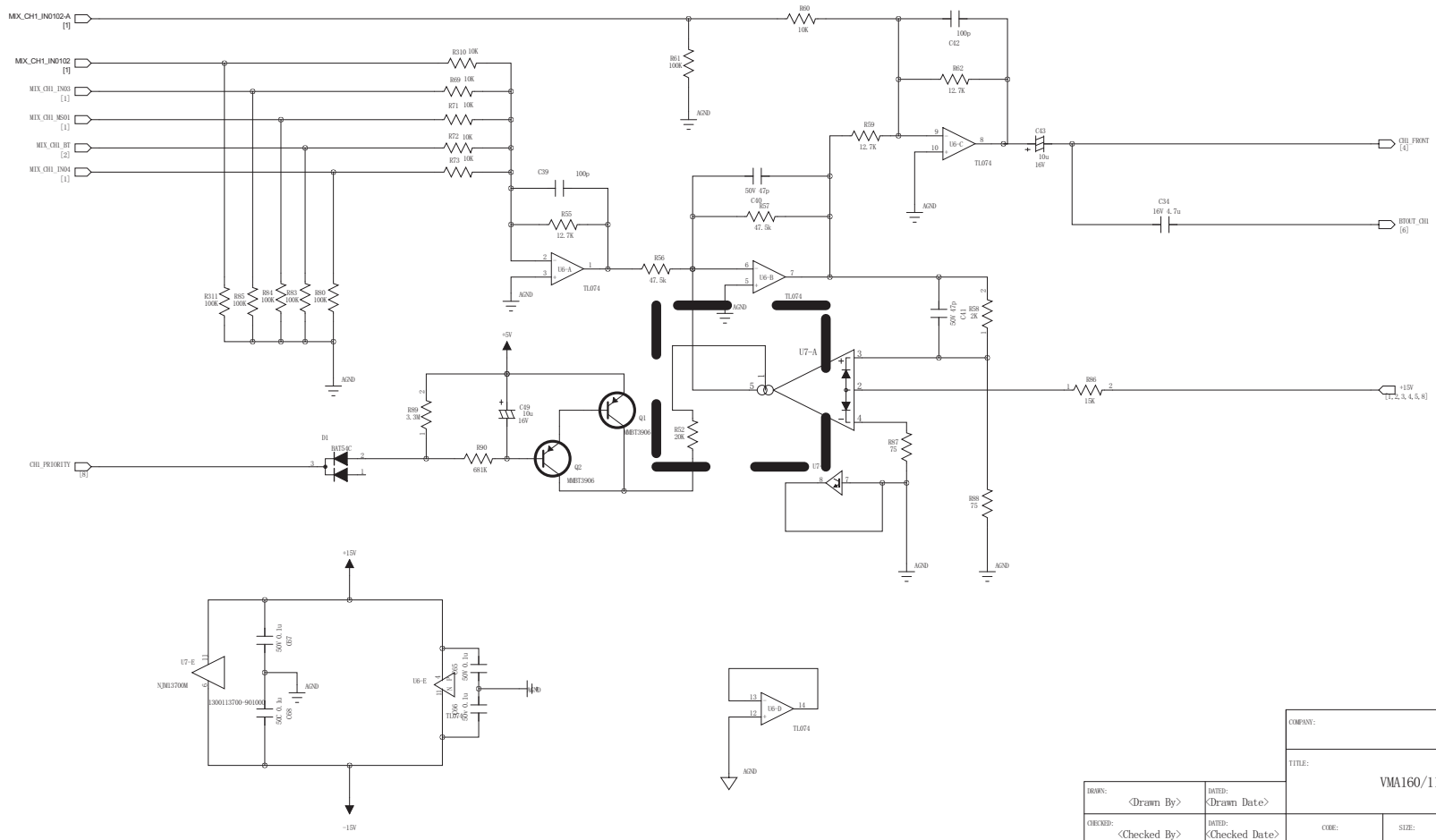

REVISION RECORD			
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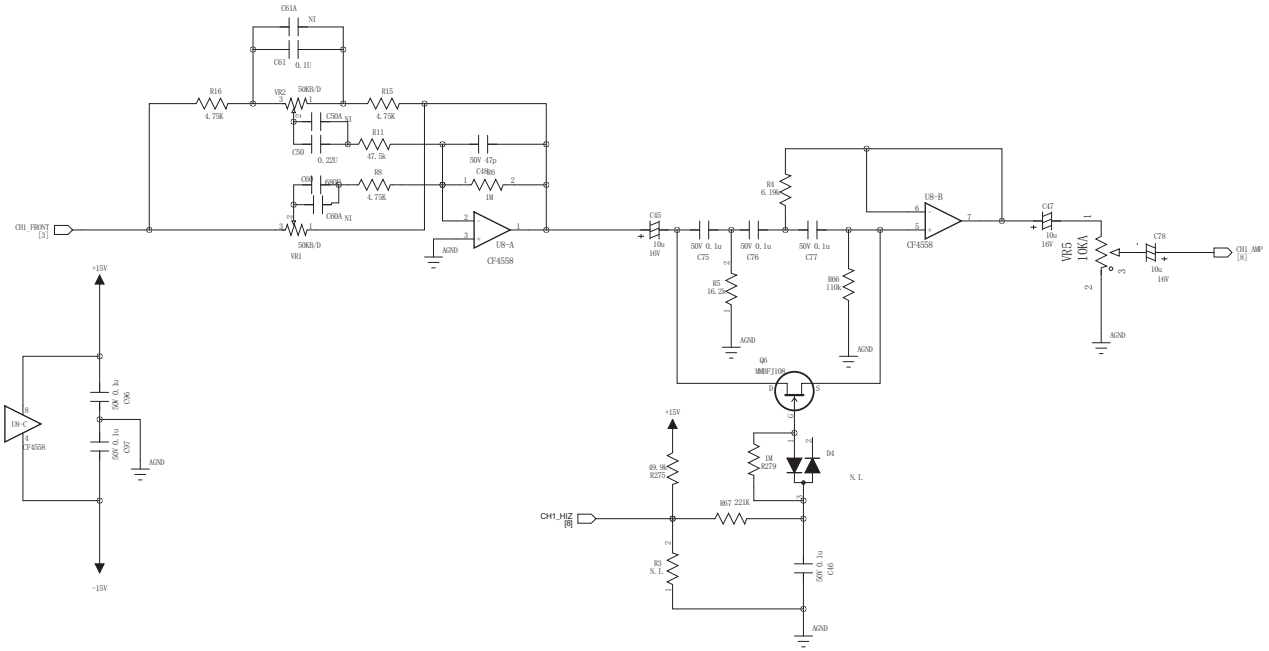

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QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: A2
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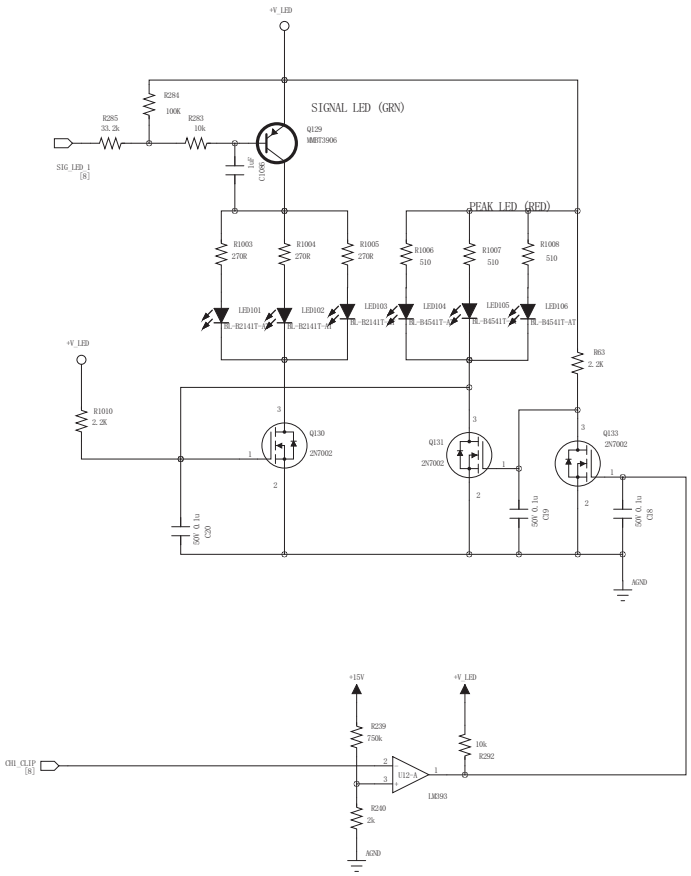

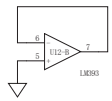

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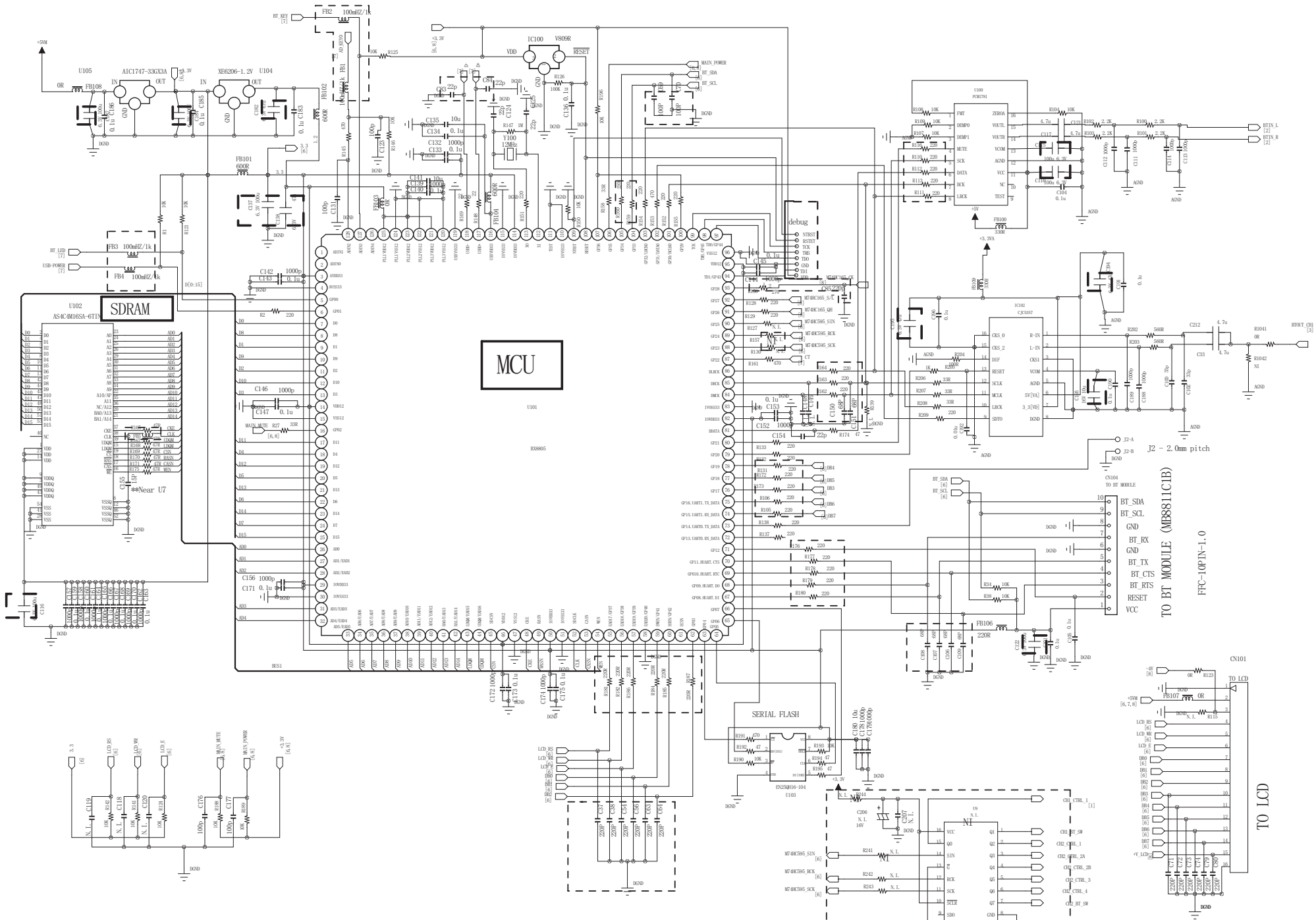
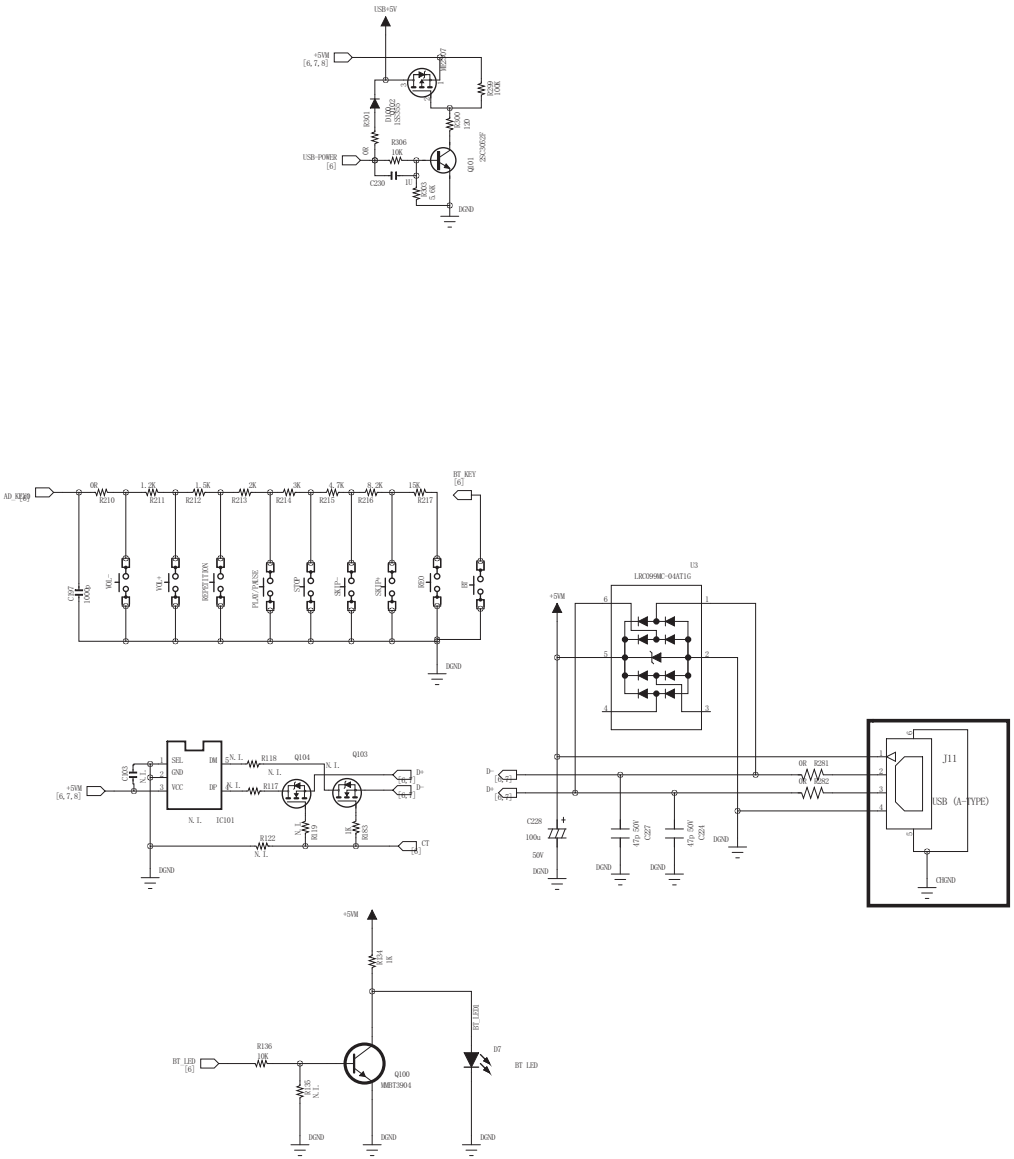

MCU
SDRAM
SERIAL FLASH
TO BT MODULE (MB8811C1B)
FFC-10PIN-1.0
J2 - 2.0mm pitch
TO LCD
debug

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



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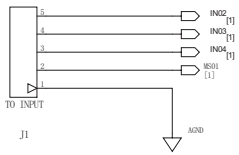
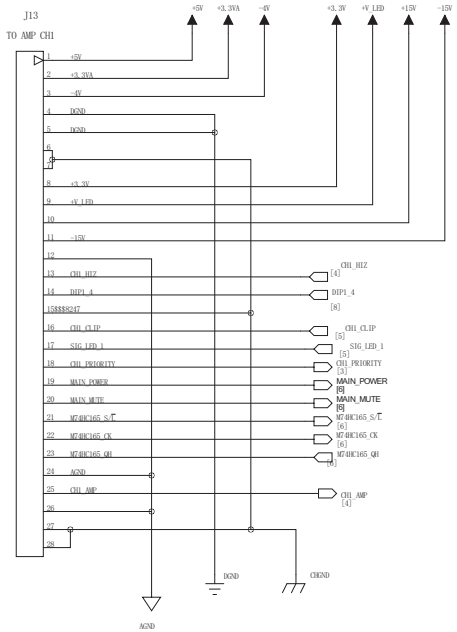
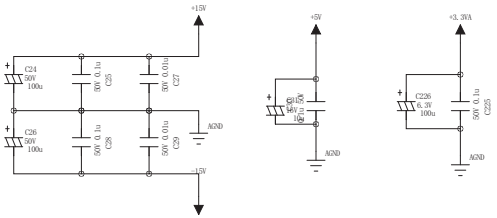
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

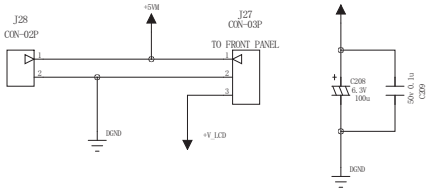
FRONT PANEL TO INPUT



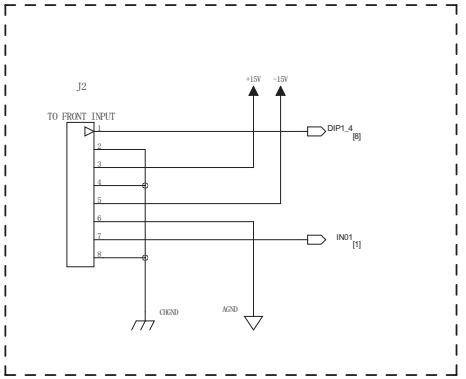
FRONT PANEL TO AMP CH1

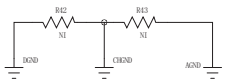






SP2 SP3 SP4 SP5





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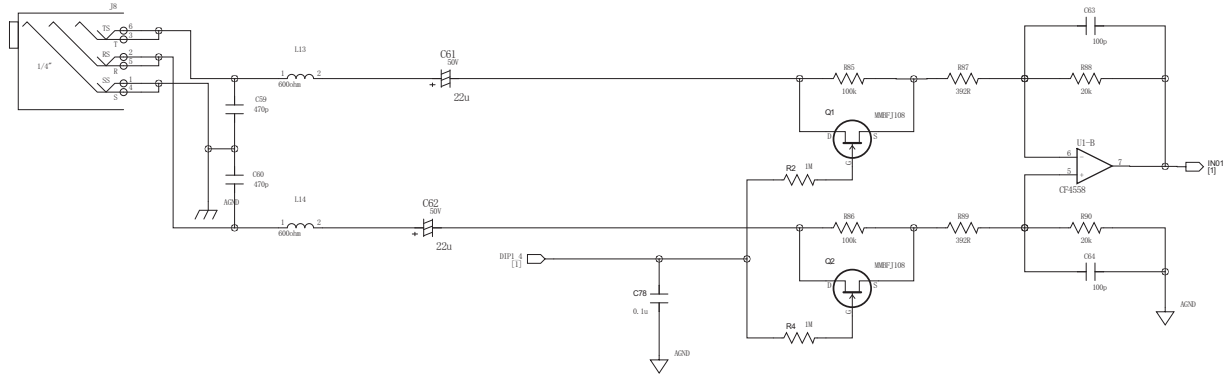

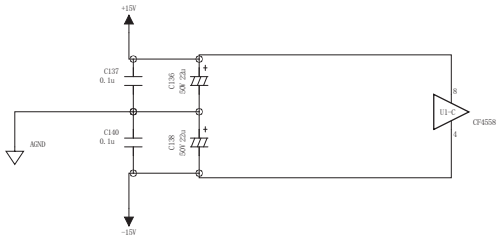

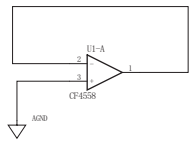

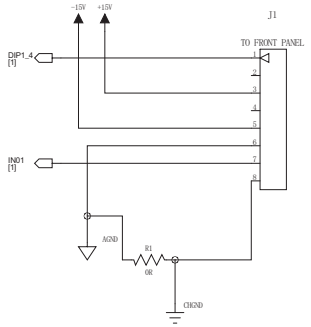

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COMPANY:

TITLE: VMA - 1-CH Front Input

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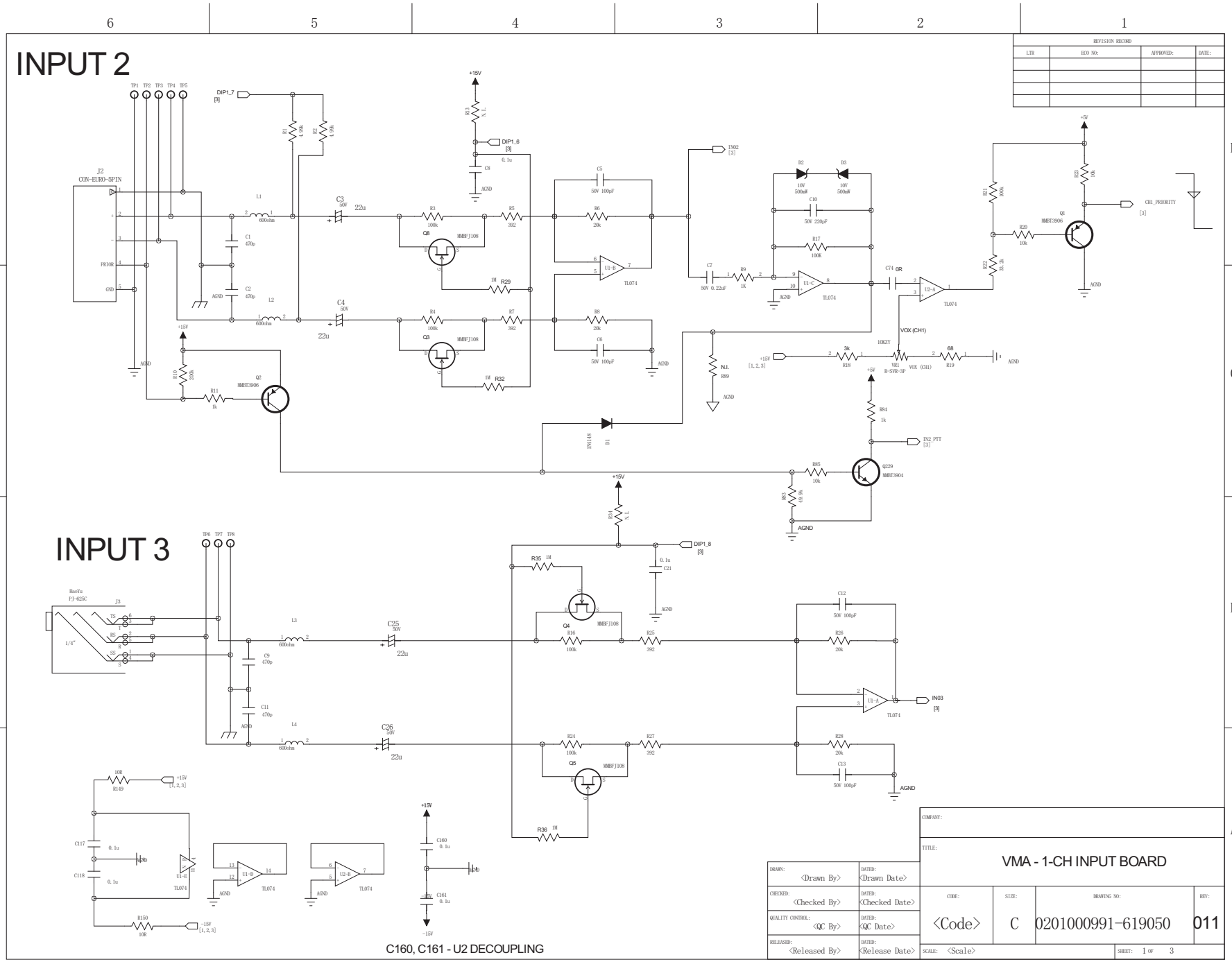
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INPUT 3
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
VMA - 1-CH INPUT BOARD
C160, C161 - U2 DECOUPLING
DRAWN: <Drawn By>
DATED: <Drawn Date>
CHECKED: <Checked By>
DATED: <Checked Date>
QUALITY CONTROL: <QC By>
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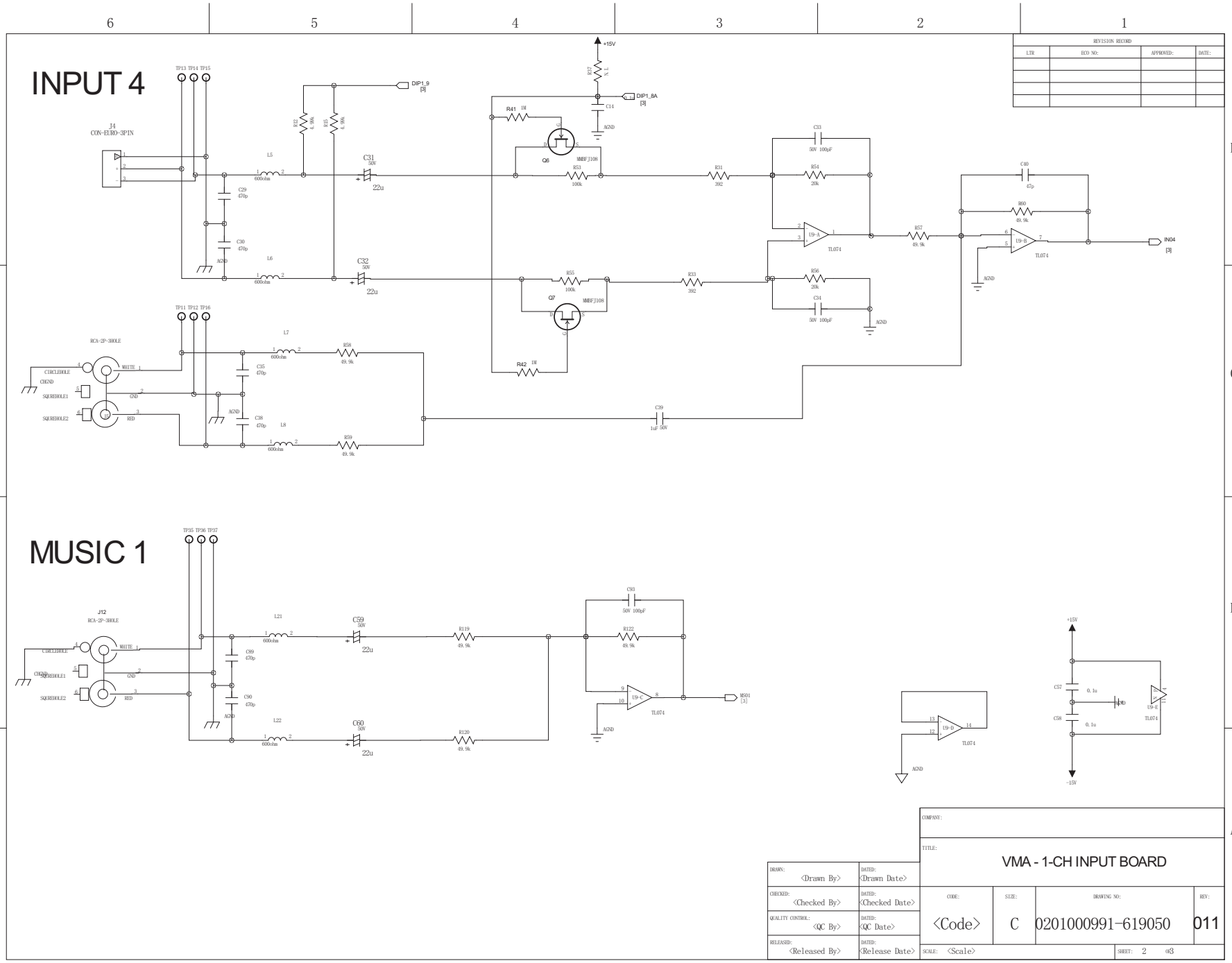
SHEET: 1 OF 3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MUSIC 1
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
VMA - 1-CH INPUT BOARD
DRAWN: <Drawn By>
DATED: <Drawn Date>
CHECKED: <Checked By>
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QUALITY CONTROL: <QC By>
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TITLE:
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REVISION RECORD			
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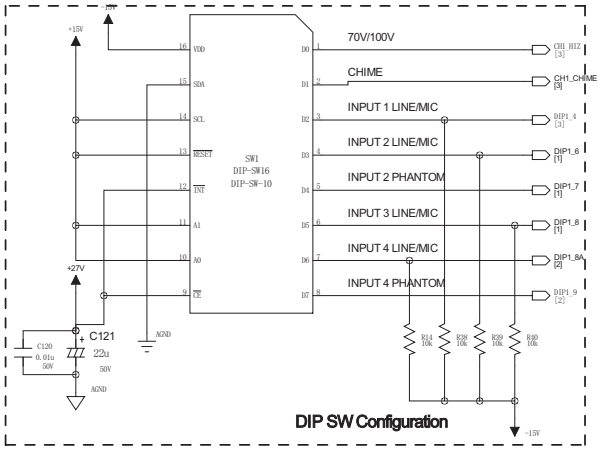

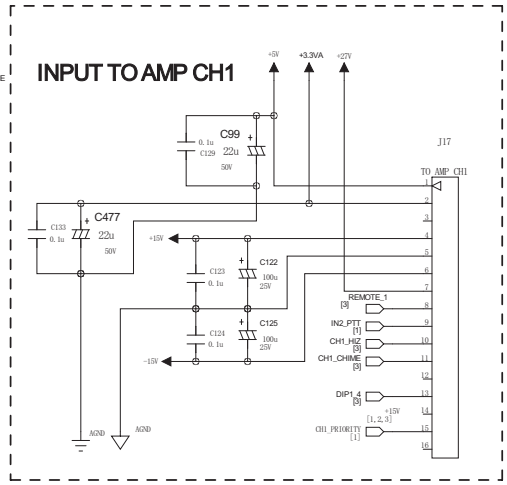

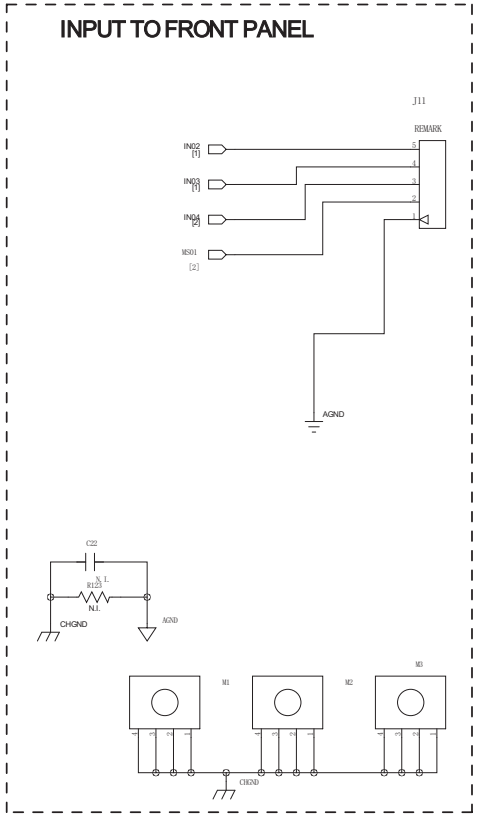

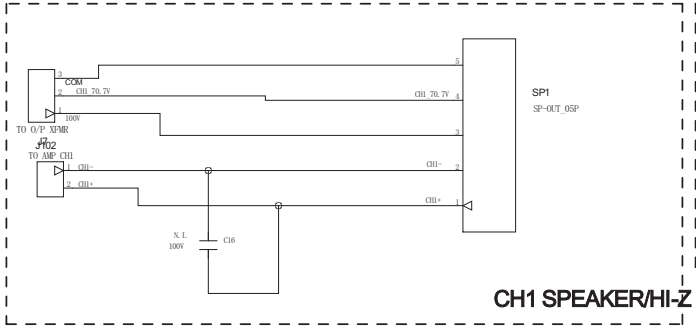

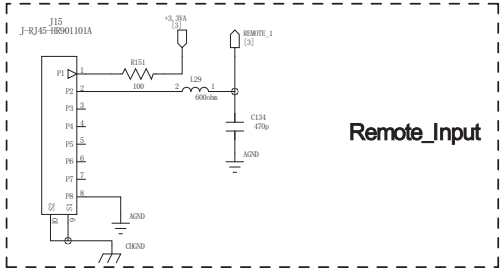

SP2 SP3 SP4 SP5

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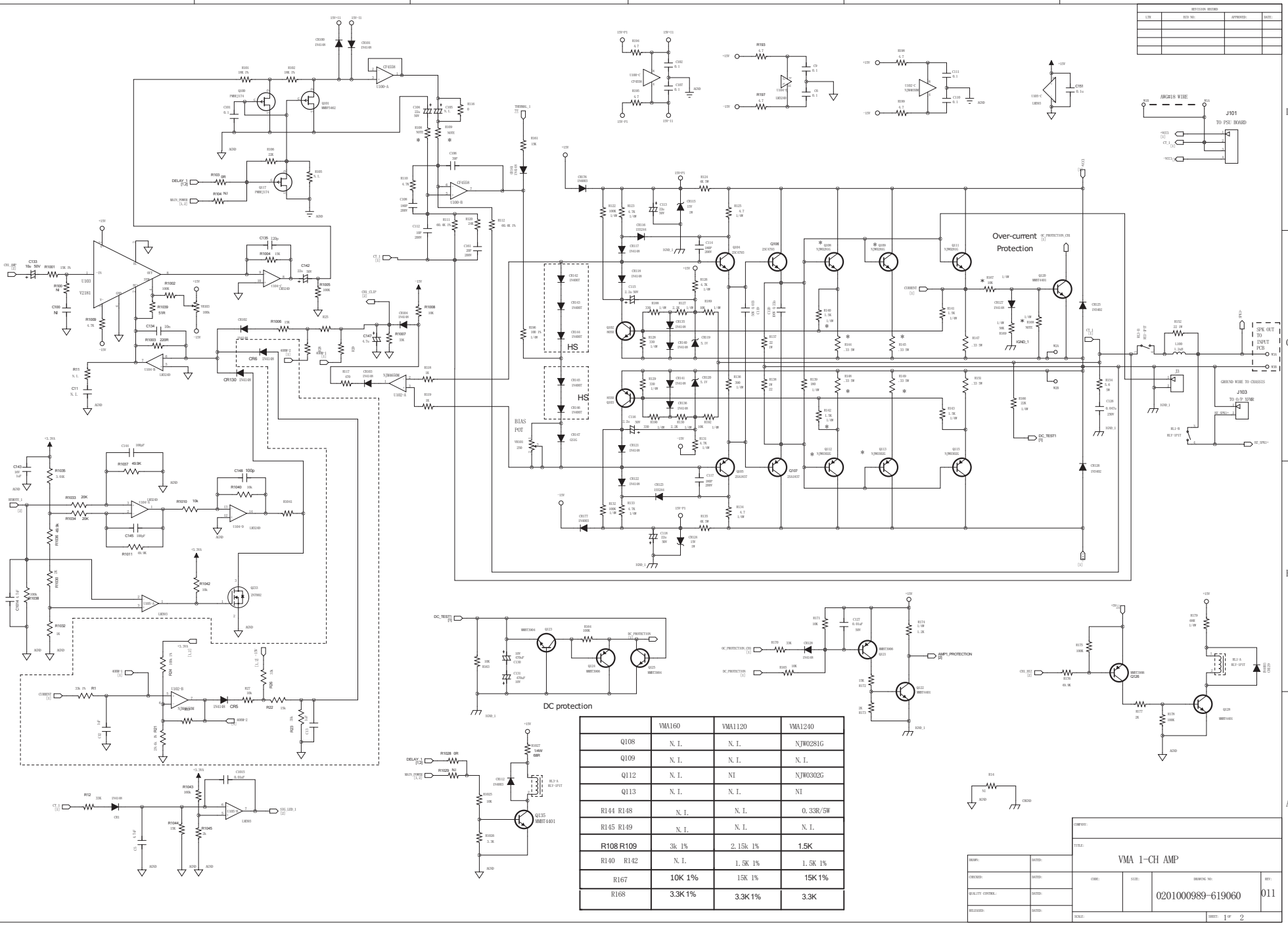

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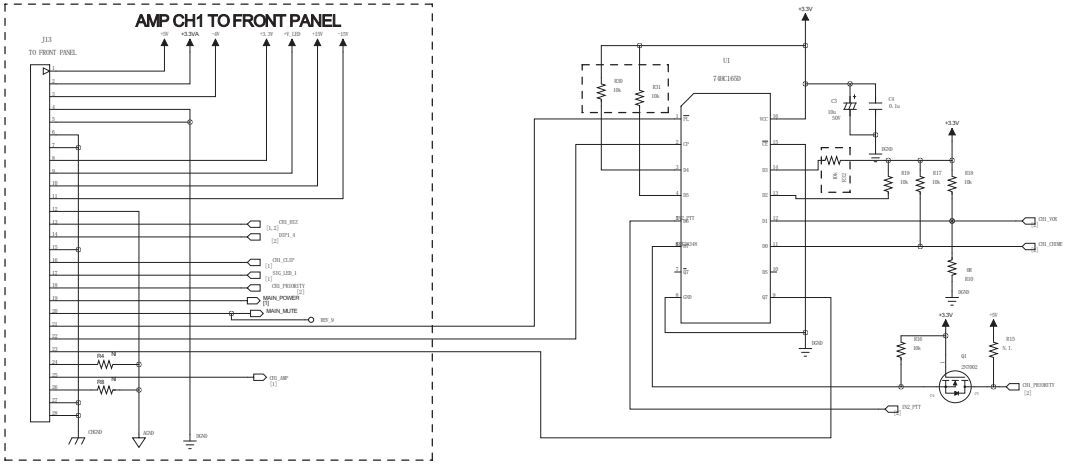
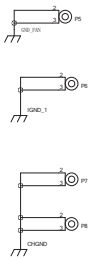
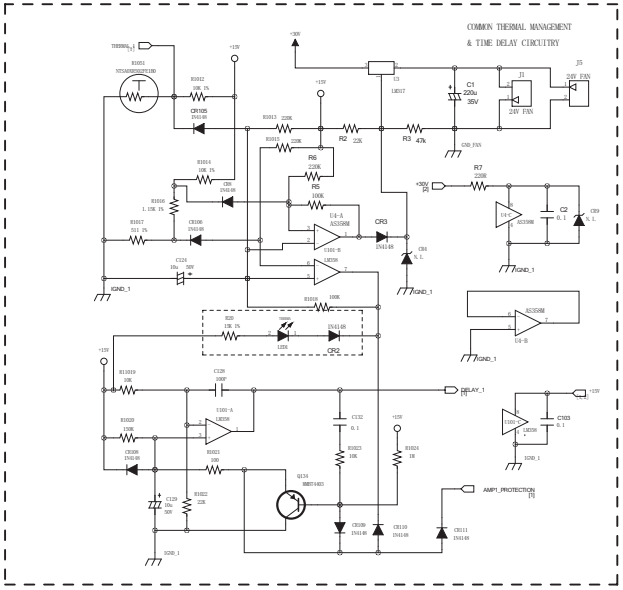
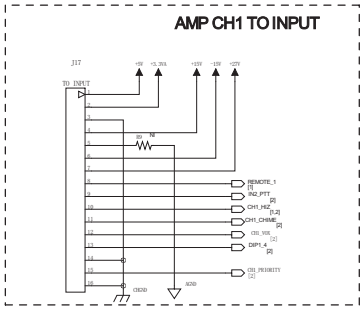
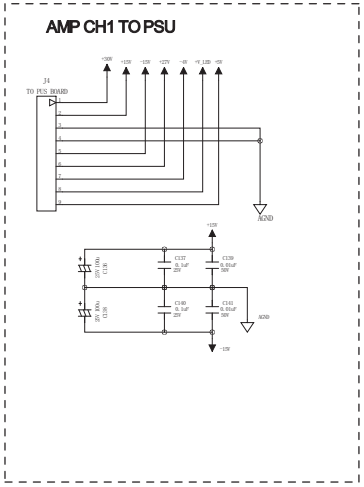
Q108	N. I.	N. I.	NJW0281G
Q109	N. I.	N. I.	N. I.
Q112	N. I.	NI	NJW0302G
Q113	N. I.	N. I.	NI
R144 R148	N. I.	N. I.	0. 33R/5W
R145 R149	N. I.	N. I.	N. I.
R108 R109	3k 1%	2. 15k 1%	1.5K
R140 R142	N. I.	1. 5K 1%	1. 5K 1%
R167	10K 1%	15K 1%	15K 1%
R168	3.3K 1%	3.3K 1%	3.3K

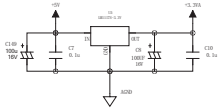












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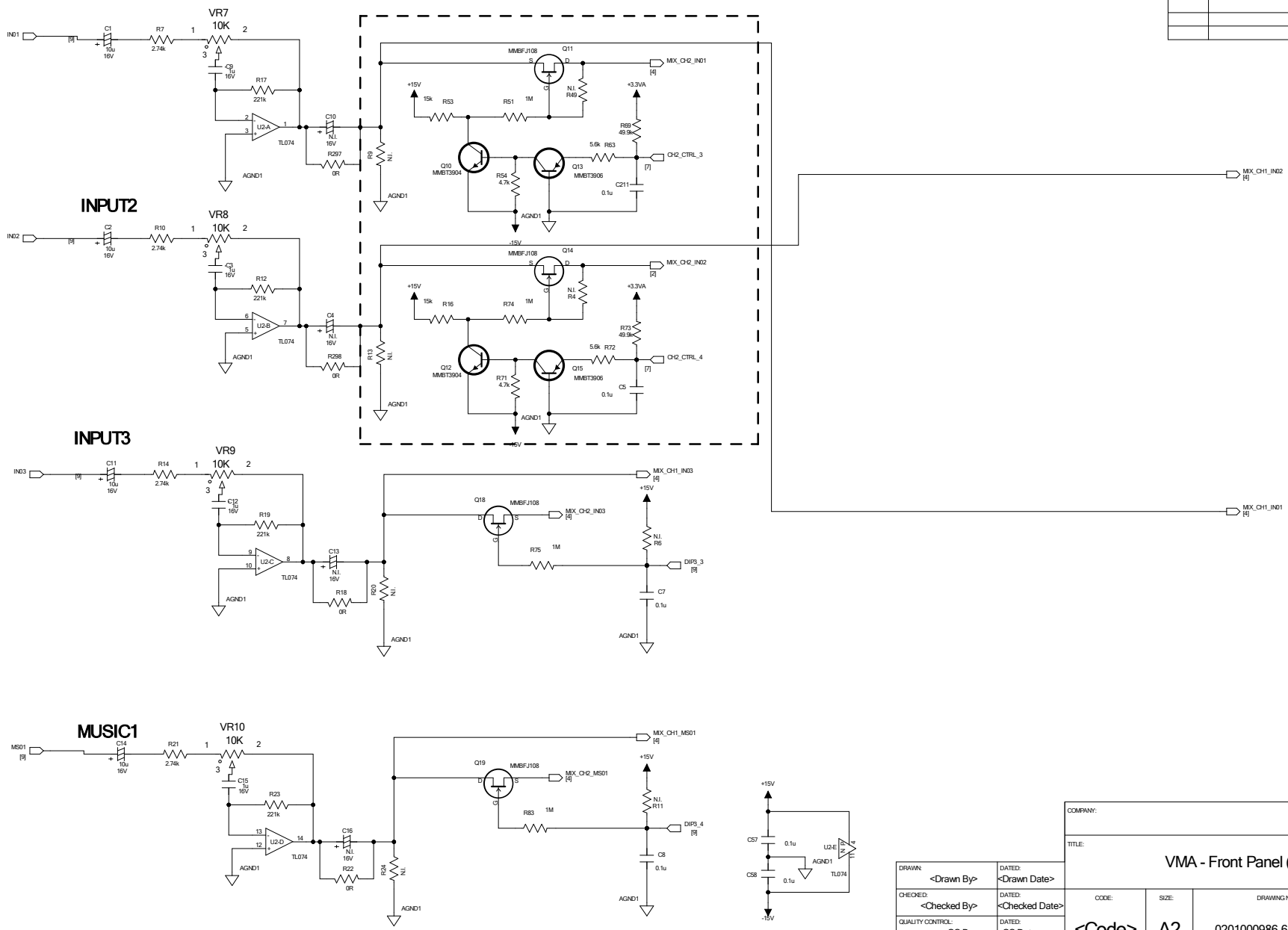
TITLE:	VMA 1-CH AMP		
DRAWN: / DATE:	CODE:	SIZE:	DRAWING NO: 0201000989-619060
CHECKED: / DATE:			REV: 011
QUALITY CONTROL: / DATE:	SCALE:		SHEET: 20F 2
RELEASED: / DATE:			

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

COMPONENTS ON THIS SHEET ARE PLACED ON CHANNEL VOLUME SECTION



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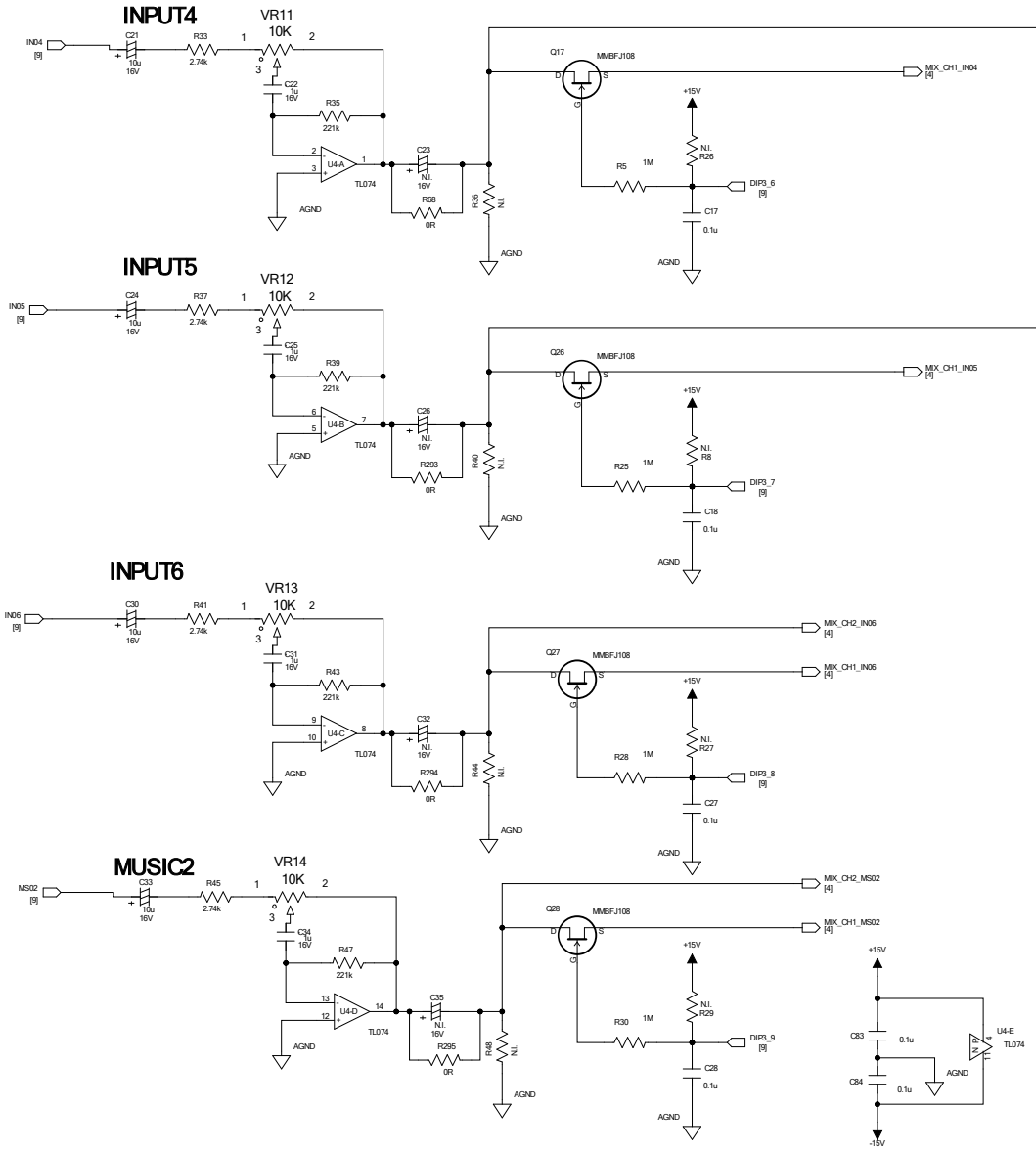
CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - Front Panel (2-CH)	
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: A2
RELEASED: <Released By>	DATED: <Release Date>	DRAWING NO: 0201000986-619050	REV: 011
		SCALE: <Scale>	SHEET: 1 OF 9

COMPONENTS ON THIS SHEET ARE PLACED ON CHANNEL VOLUME SECTION

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



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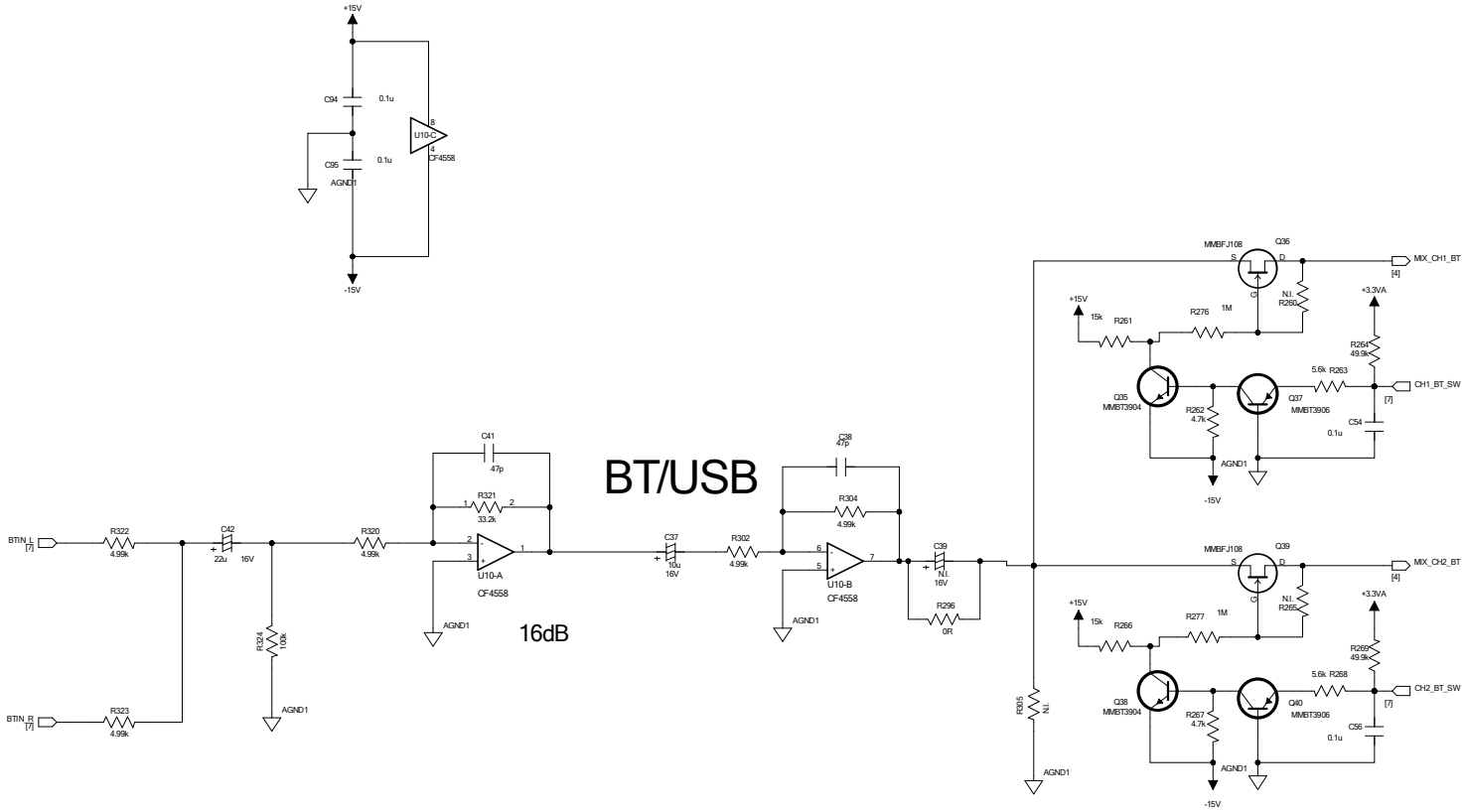
RELEASED: <Released By>	DATED: <Release Date>	DRAWING NO: 0201000986-619050	REV: 011
		SCALE: <Scale>	SHEET: 2 OF 9

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

COMPONENTS ON THIS SHEET ARE PLACED ON CHANNEL VOLUME SECTION



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CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - Front Panel (2-CH)			
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: A2	DRAWING NO: 0201000986-619050	REV: 011
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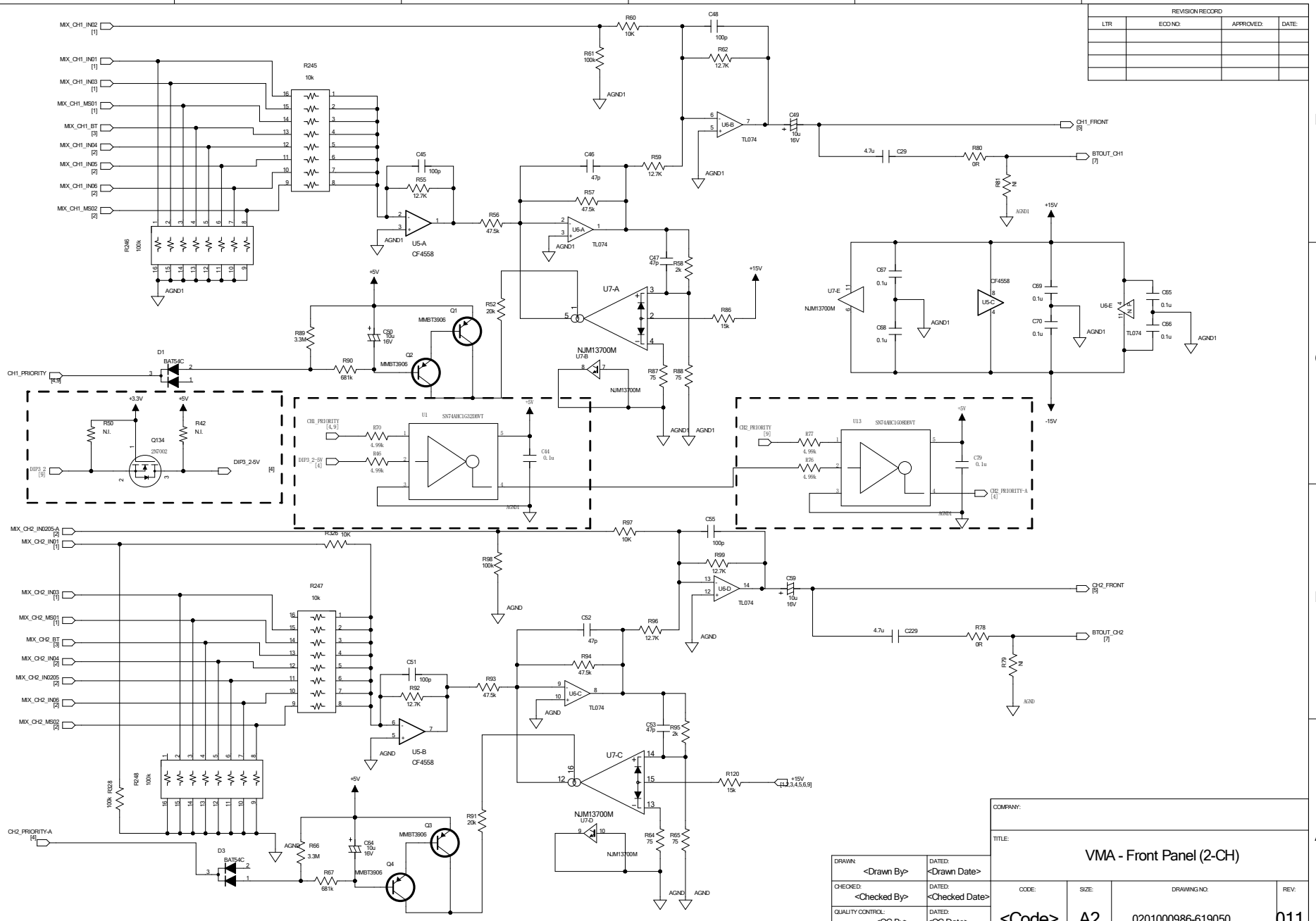
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
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MIX_CH1_IN01 [1]
MIX_CH1_IN03 [1]
MIX_CH1_MS01 [1]
MIX_CH1_BT [3]
MIX_CH1_IN04 [2]
MIX_CH1_IN05 [2]
MIX_CH1_IN06 [2]
MIX_CH1_MS02 [2]
R245 10k
R246 100k
U5-A CF4558
U6-B TL074
U6-C TL074
U6-D TL074
U7-A NJM13700M
U7-B NJM13700M
U7-C NJM13700M
U7-D NJM13700M
U7-E NJM13700M
U5-C CF4558
U6-E TL074
CH1_FRONT [5]
BTOUT_CH1 [7]
CH1_PRIORITY [4,9]
DIP3_2 [9]
DIP3_2-5V [4]
CH1_PRIORITY-A [4]
MIX_CH2_IN0205-A [2]
MIX_CH2_IN01 [1]
MIX_CH2_IN03 [1]
MIX_CH2_MS01 [1]
MIX_CH2_BT [3]
MIX_CH2_IN04 [2]
MIX_CH2_IN0205 [2]
MIX_CH2_IN06 [2]
MIX_CH2_MS02 [2]
R247 10k
R248 100k
U5-B CF4558
CH2_FRONT [5]
BTOUT_CH2 [7]
CH2_PRIORITY [9]
CH2_PRIORITY-A [4]
Q1 MMBT3906
Q2 MMBT3906
Q3 MMBT3906
Q4 MMBT3906
Q134 2N7002
D1 BAT54C
D3 BAT54C
U1 SN74AHC1G32DBVT
U13 SN74AHC1G08DBVT
+15V
-15V
+5V
+3.3V
AGND
AGND1
COMPONENTS ON THIS SHEET ARE PLACED ON CHANNEL VOLUME SECTION
COMPANY:
TITLE:
VMA - Front Panel (2-CH)
DRAWN: <Drawn By>
DATED: <Drawn Date>
CHECKED: <Checked By>
DATED: <Checked Date>
QUALITY CONTROL: <QC By>
DATED: <QC Date>
RELEASED: <Released By>
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DRAWING NO: 0201000986-619050
REV: 011
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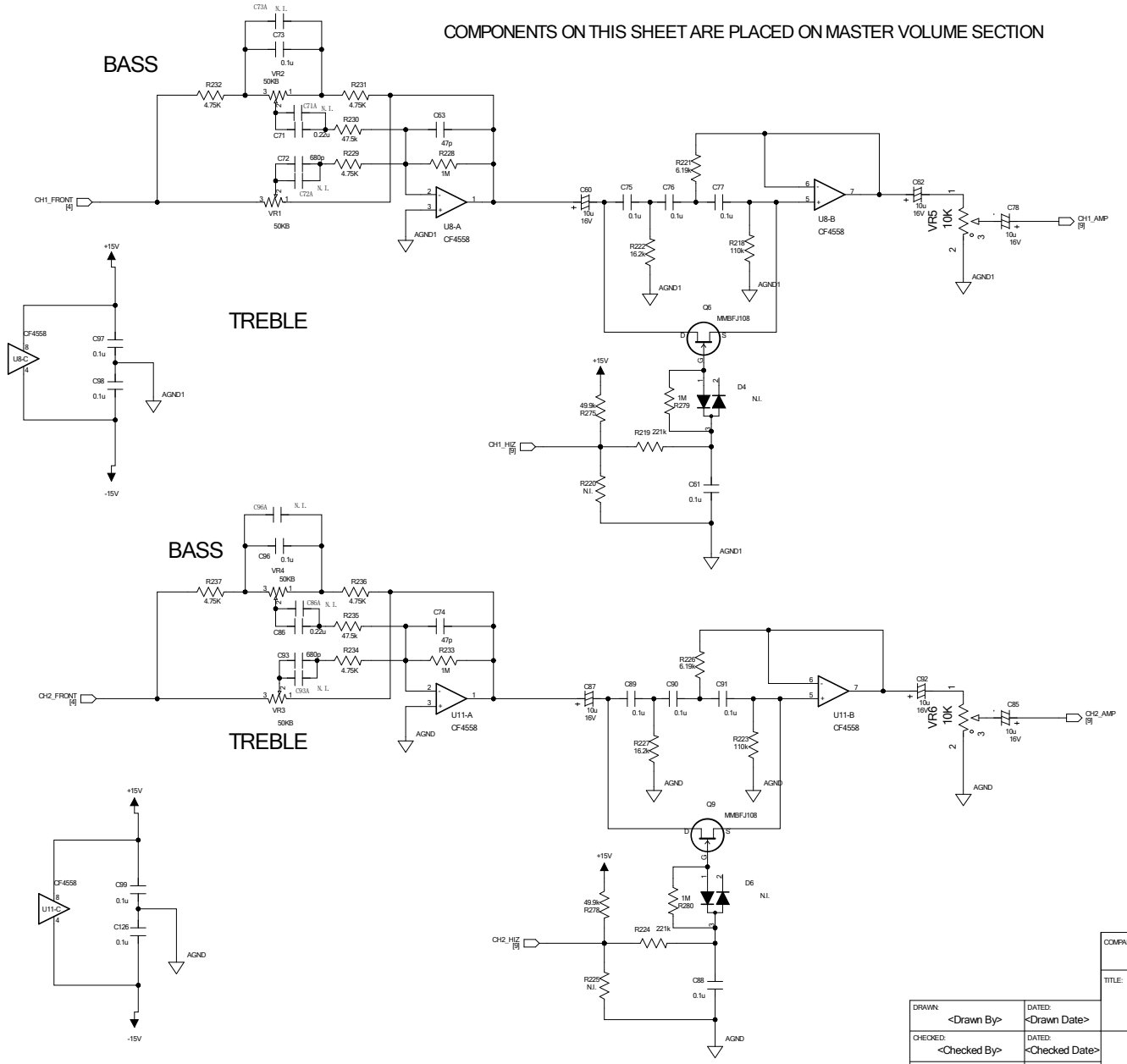
SHEET: 4 OF 9



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DRAWN: <Drawn By>	DATED: <Drawn Date>	COMPANY:	
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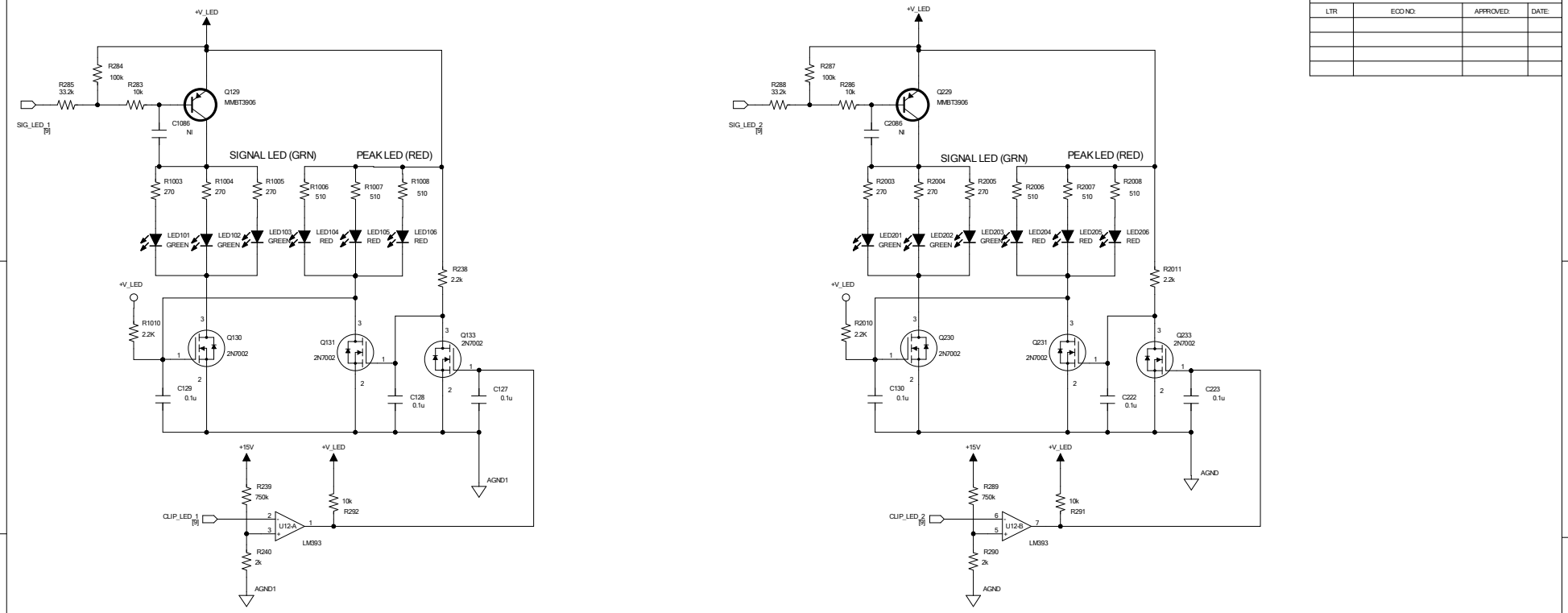
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: A2
RELEASED: <Released By>	DATED: <Release Date>	DRAWING NO: 0201000986-619050	REV: 011
		SCALE: <Scale>	SHEET: 9 OF 9



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

COMPONENTS ON THIS SHEET ARE PLACED ON MASTER VOLUME SECTION

DRAWN: <Drawn By>	DATED: <Drawn Date>	COMPANY:	
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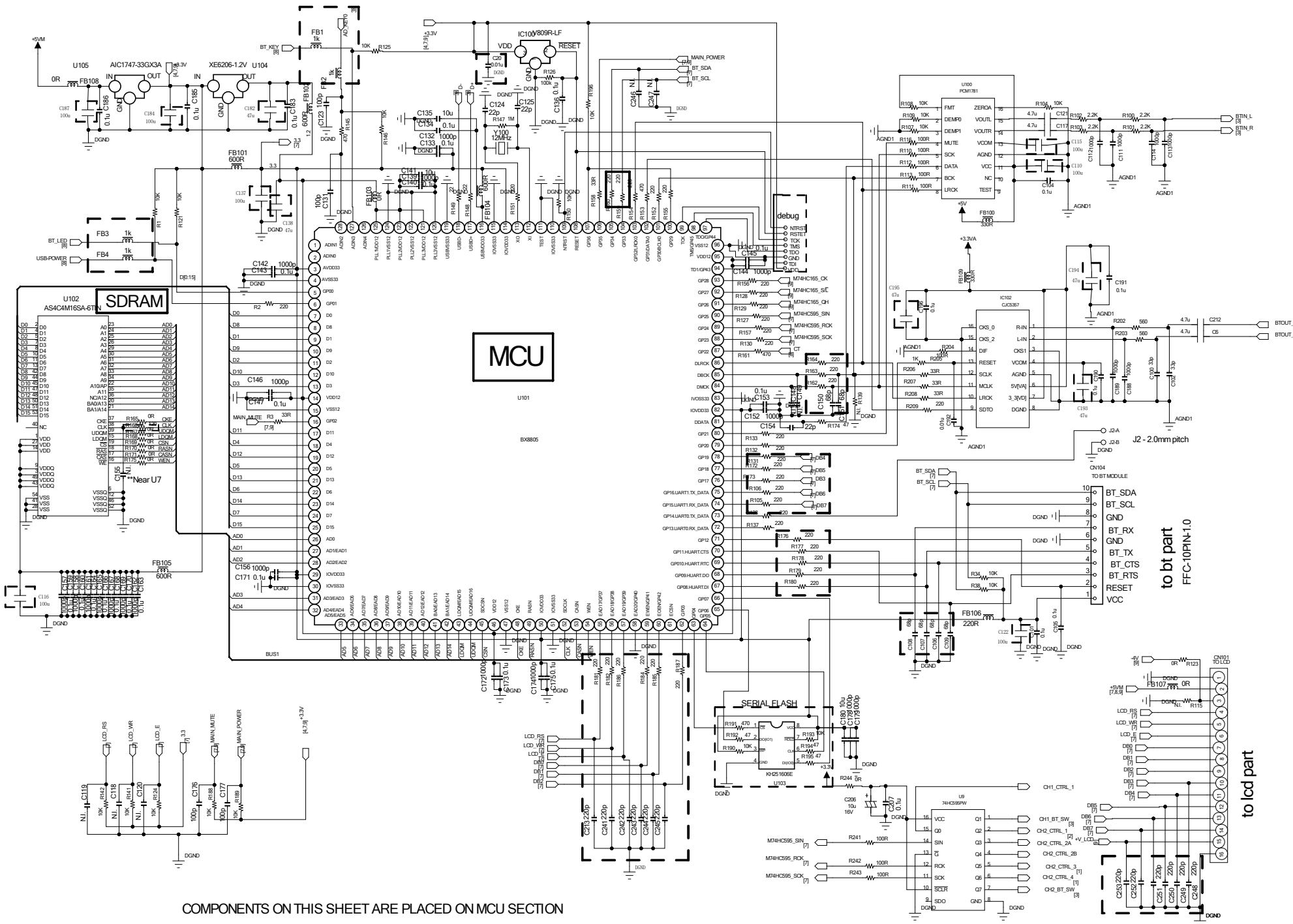
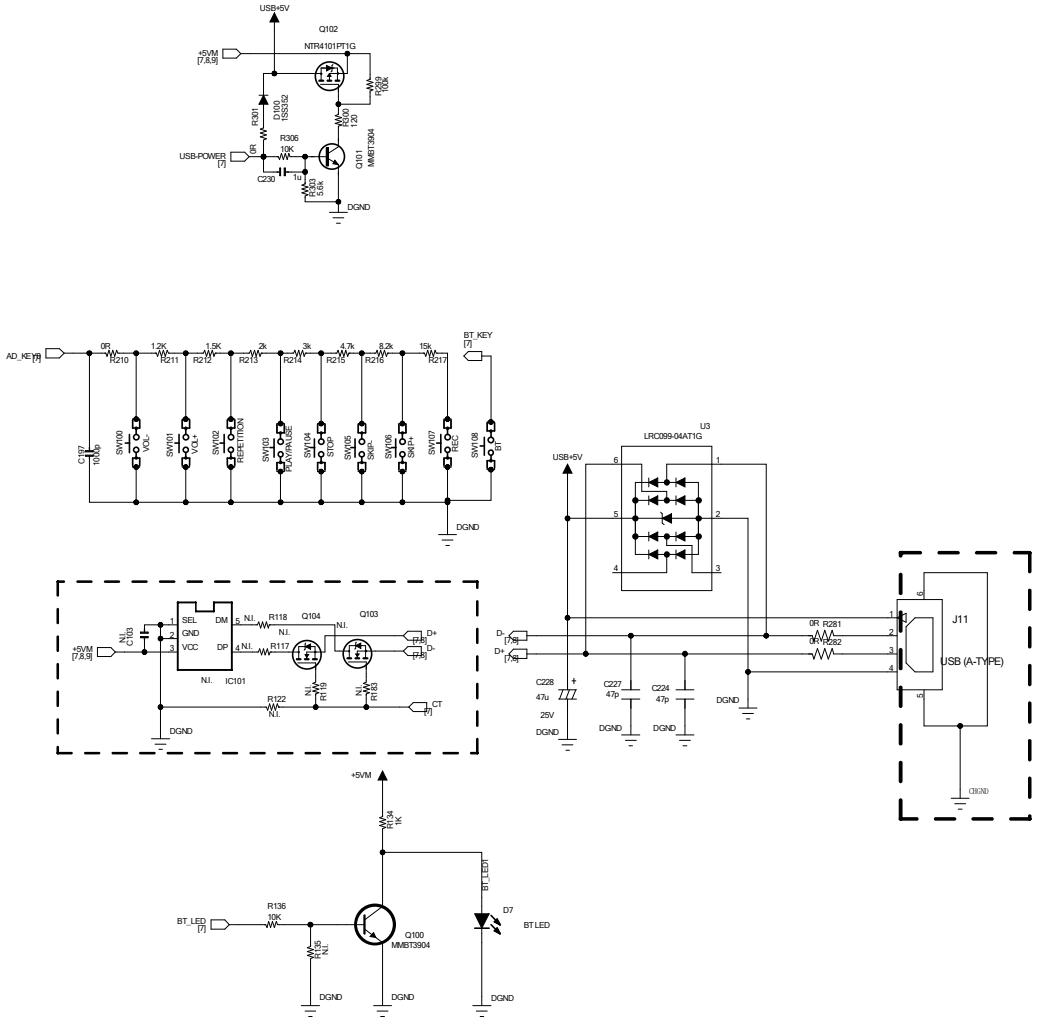
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: A2
RELEASED: <Released By>	DATED: <Release Date>	DRAWING NO: 0201000986-619050	REV: 011
		SCALE: <Scale>	SHEET: 6 OF 9


SDRAM
MCU
SERIAL FLASH
debug
to bt part
FFC-10PIN-1.0
to lcd part
J2 - 2.0mm pitch
COMPONENTS ON THIS SHEET ARE PLACED ON MCU SECTION

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



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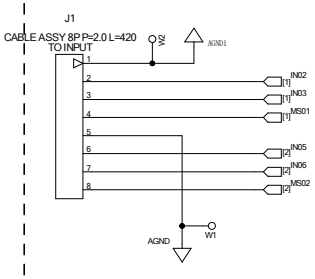
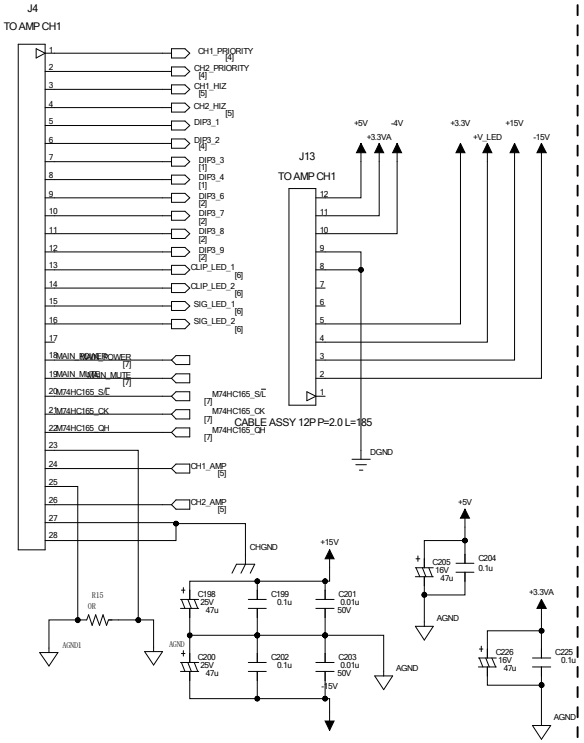
CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - Front Panel (2-CH)	
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: A2
RELEASED: <Released By>	DATED: <Release Date>	DRAWING NO: 0201000986-619050	REV: 011
		SCALE: <Scale>	SHEET: 8 OF 9

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

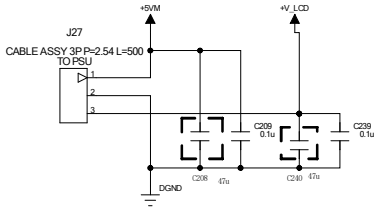
FRONT PANEL TO INPUT



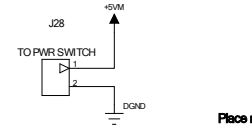
FRONT PANEL TO AMP CH1



FRONT PANEL TO PSU

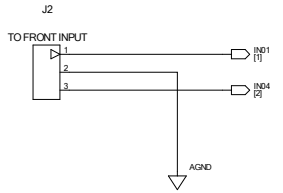


FRONT PANEL TO PWR SWITCH



Place near J27

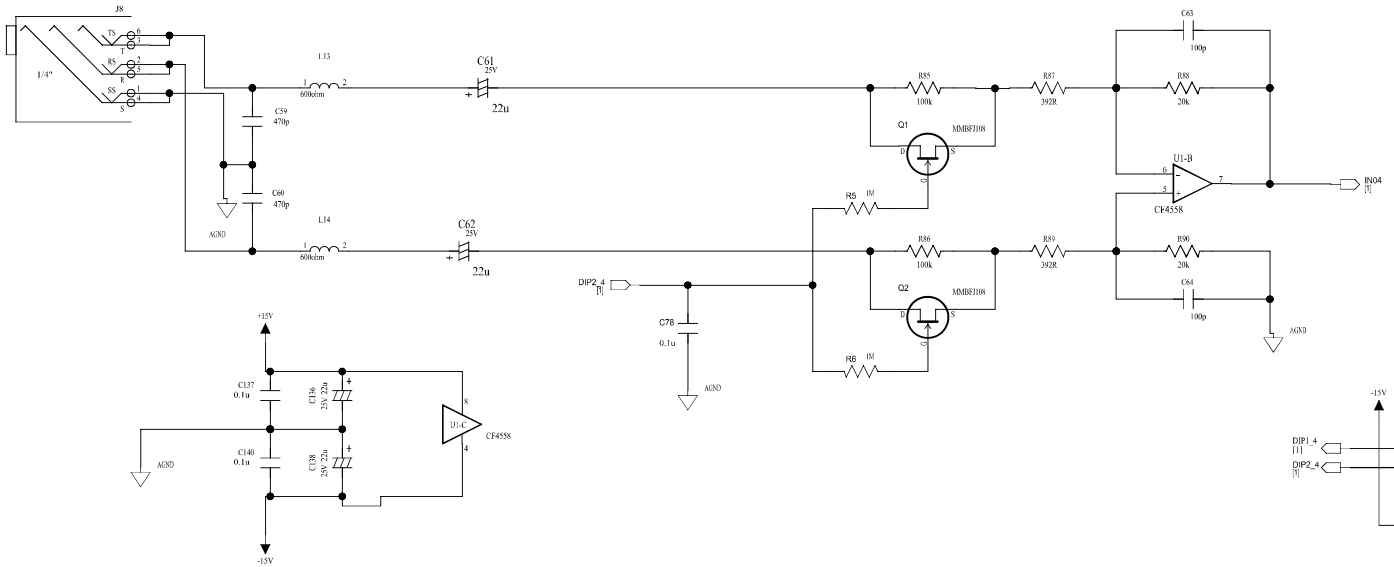
FRONT PANEL TO FRONT INPUT

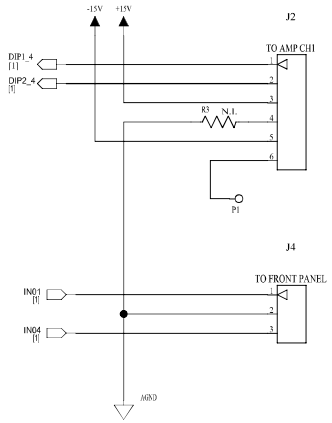


DRAWN: <Drawn By>	DATED: <Drawn Date>	COMPANY:	
CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - Front Panel (2-CH)	
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: A2
RELEASED: <Released By>	DATED: <Release Date>	DRAWING NO: 0201000986-619050	REV: 011
		SCALE: <Scale>	SHEET: 9 OF 9

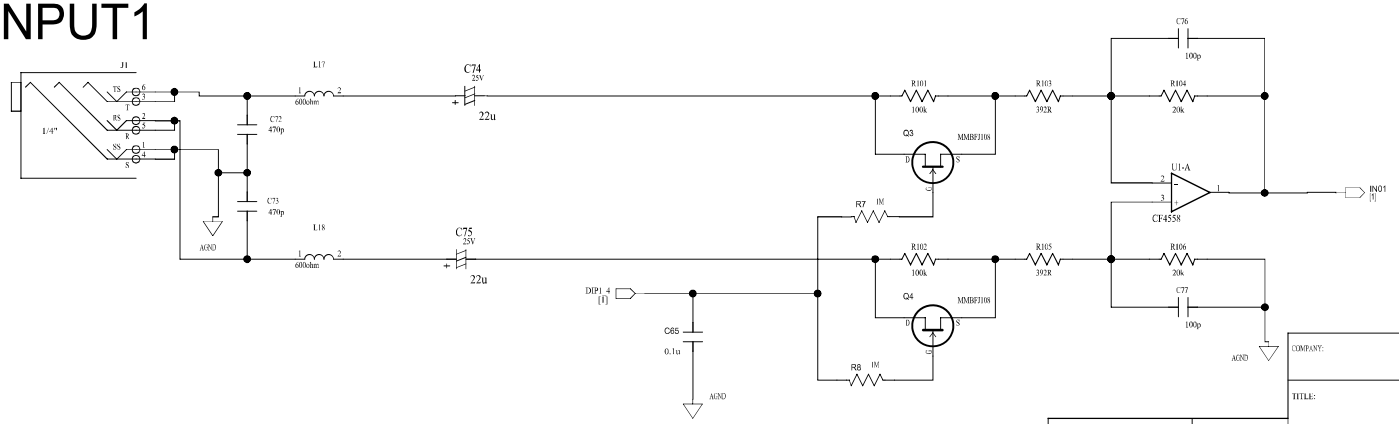
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

INPUT4





INPUT1



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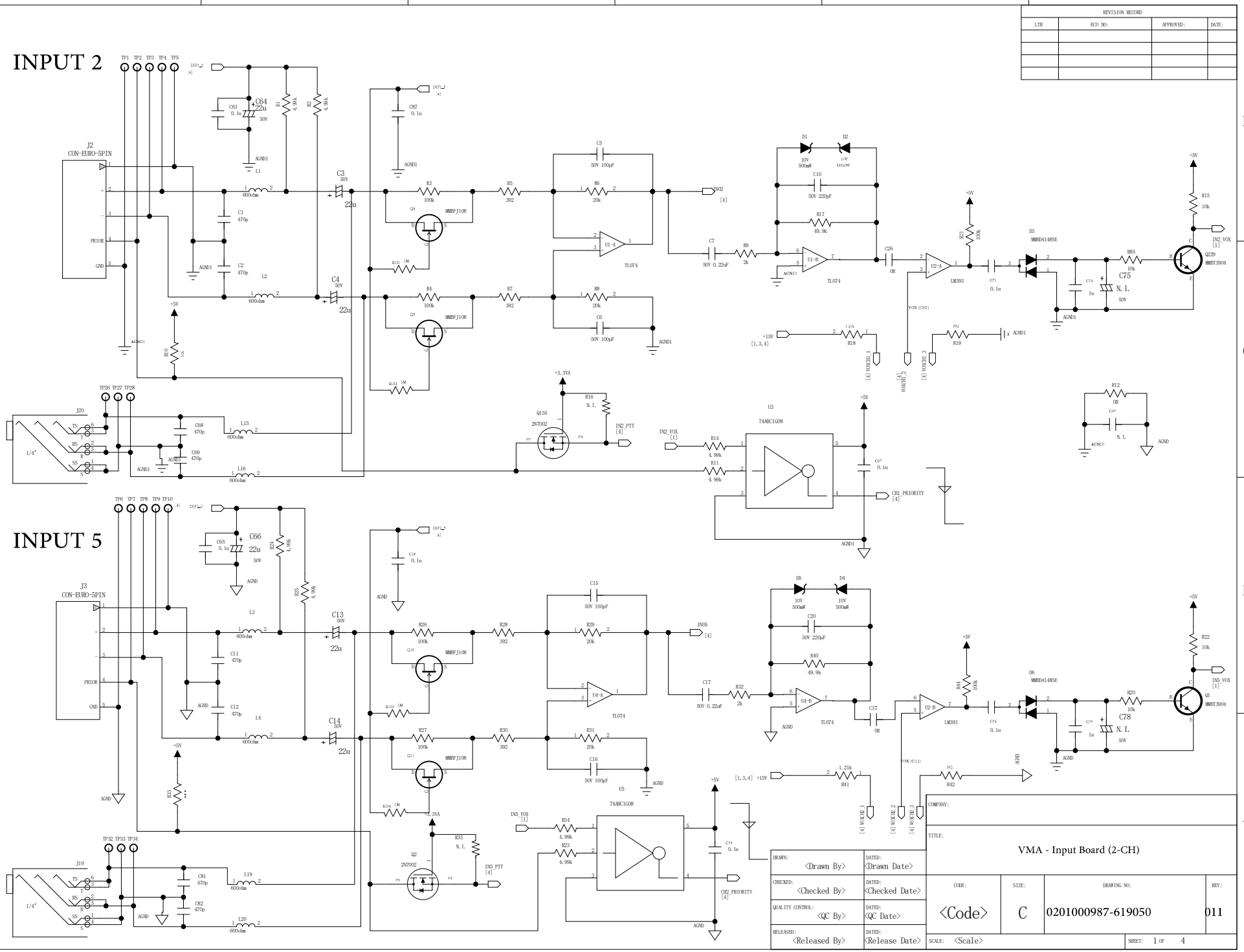
CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - Front Input (2-CH)			
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: C	DRAWING NO: 0201000987-619050	REV: 011
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>		SHEET: 1 OF 1	


INPUT 2
INPUT 5
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
VMA - Input Board (2-CH)
<Drawn By>
<Drawn Date>
<Checked By>
<Checked Date>
<QC By>
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0201000987-619050
011
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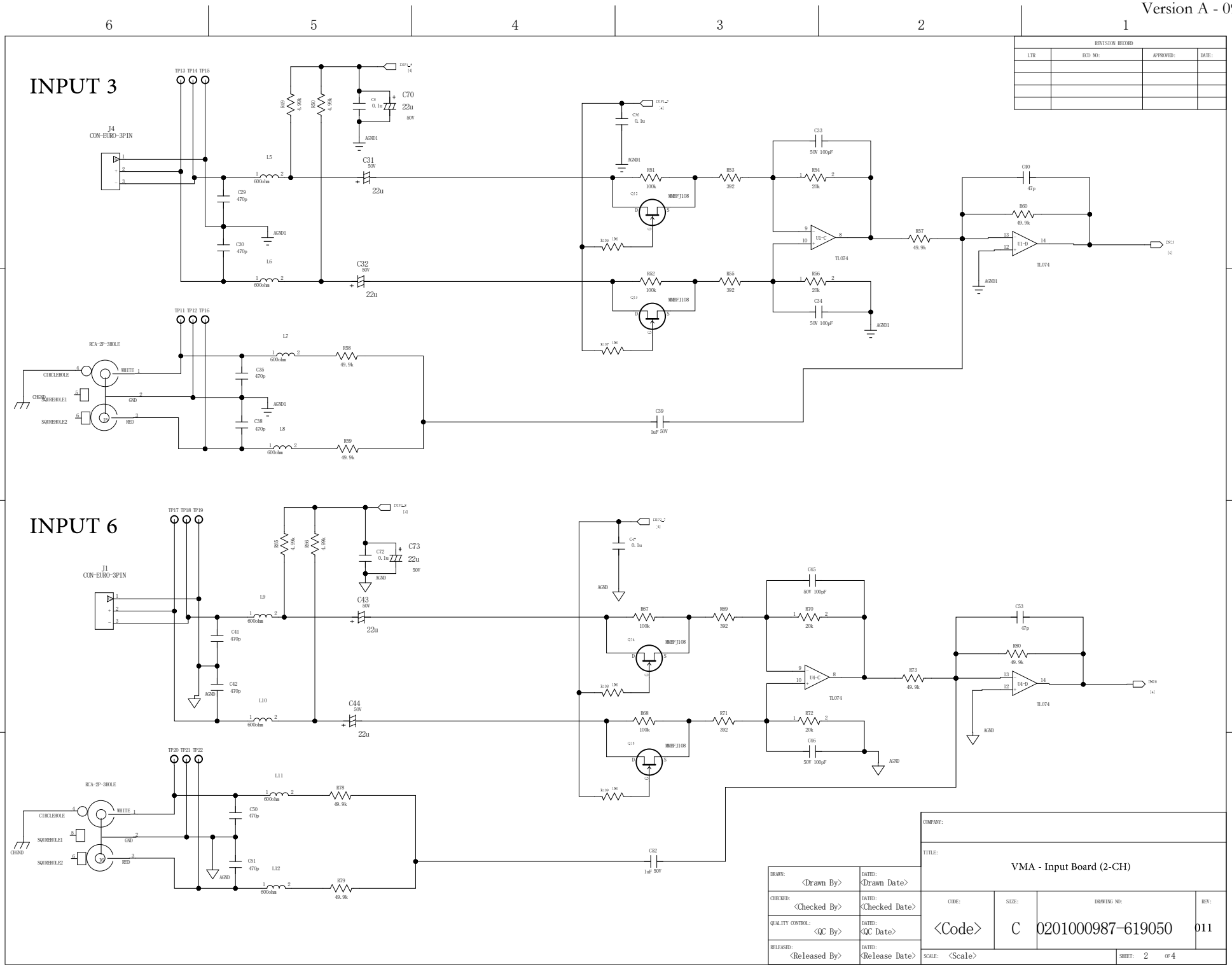
1 OF 4


INPUT 3
INPUT 6
J4
CON-EURO-3PIN
J1
CON-EURO-3PIN
RCA-2P-3HOLE
C1RCLEHOLE
SQUREHOLE1
SQUREHOLE2
CHGND
WHITE
GND
RED
TL074
MMBFJ108
REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
COMPANY:
TITLE:
VMA - Input Board (2-CH)
DRAWN:
<Drawn By>
DATED:
<Drawn Date>
CHECKED:
<Checked By>
DATED:
<Checked Date>
QUALITY CONTROL:
<QC By>
DATED:
<QC Date>
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DATED:
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SIZE:
C
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0201000987-619050
REV:
011
SCALE:
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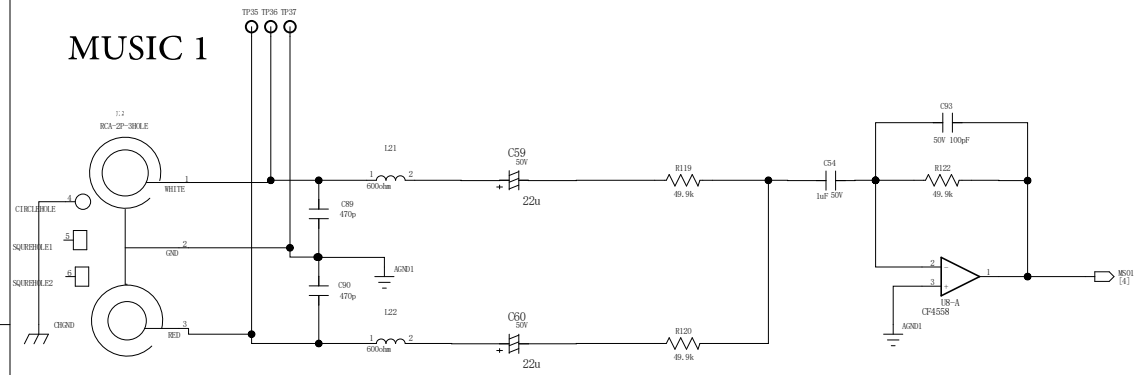
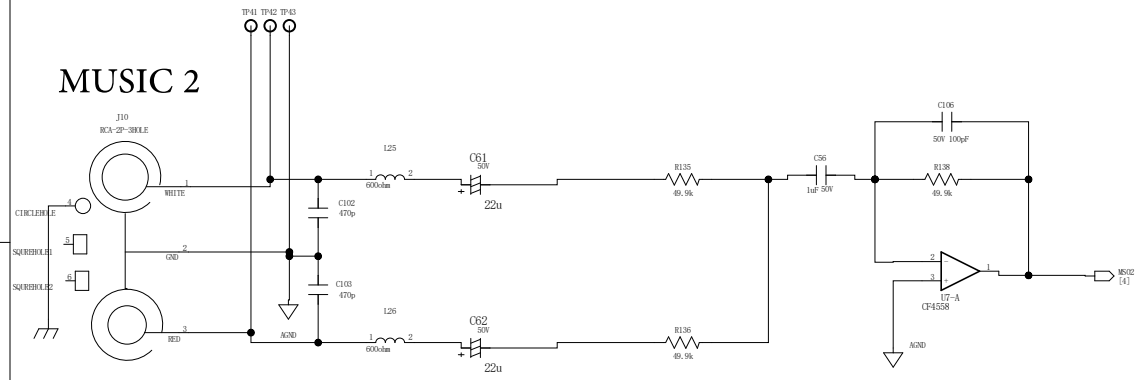
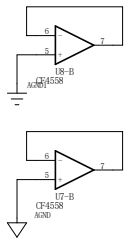
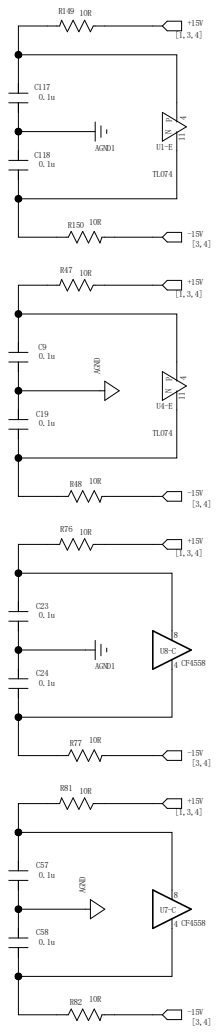
SHEET:
2
OF 4

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



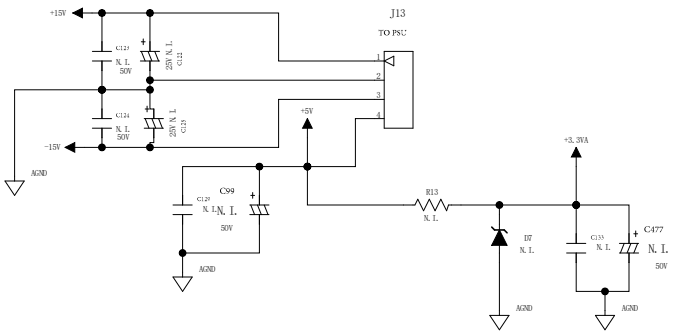


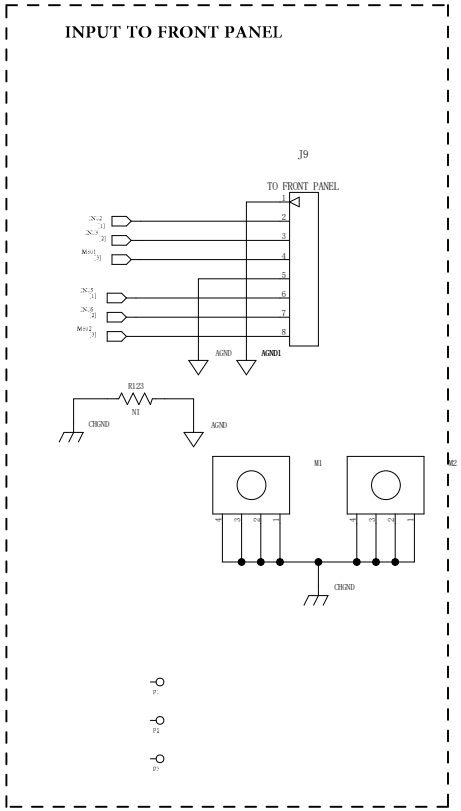


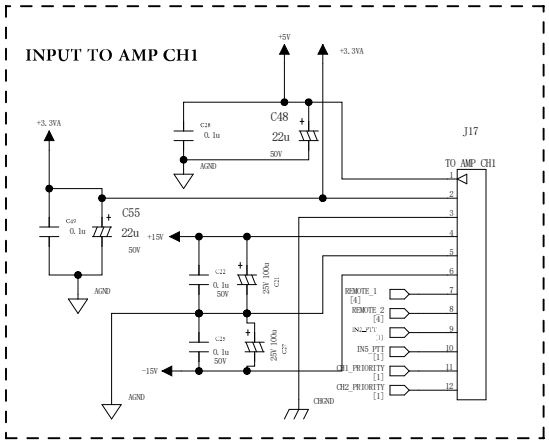


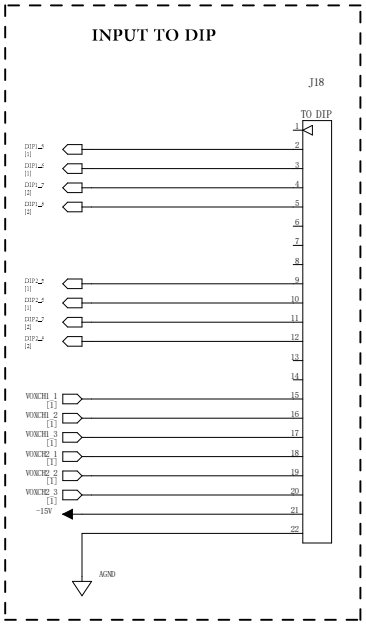
DRAWN: <Drawn By>	DATED: <Drawn Date>	COMPANY:			
CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - Input Board (2-CH)			
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: C	DRAWING NO: 0201000987-619050	REV: 011
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>		SHEET: 3 OF 4	

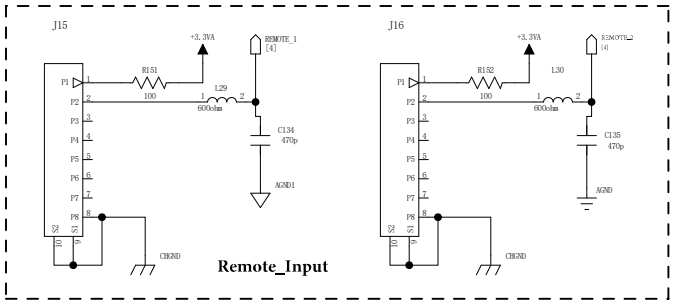
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



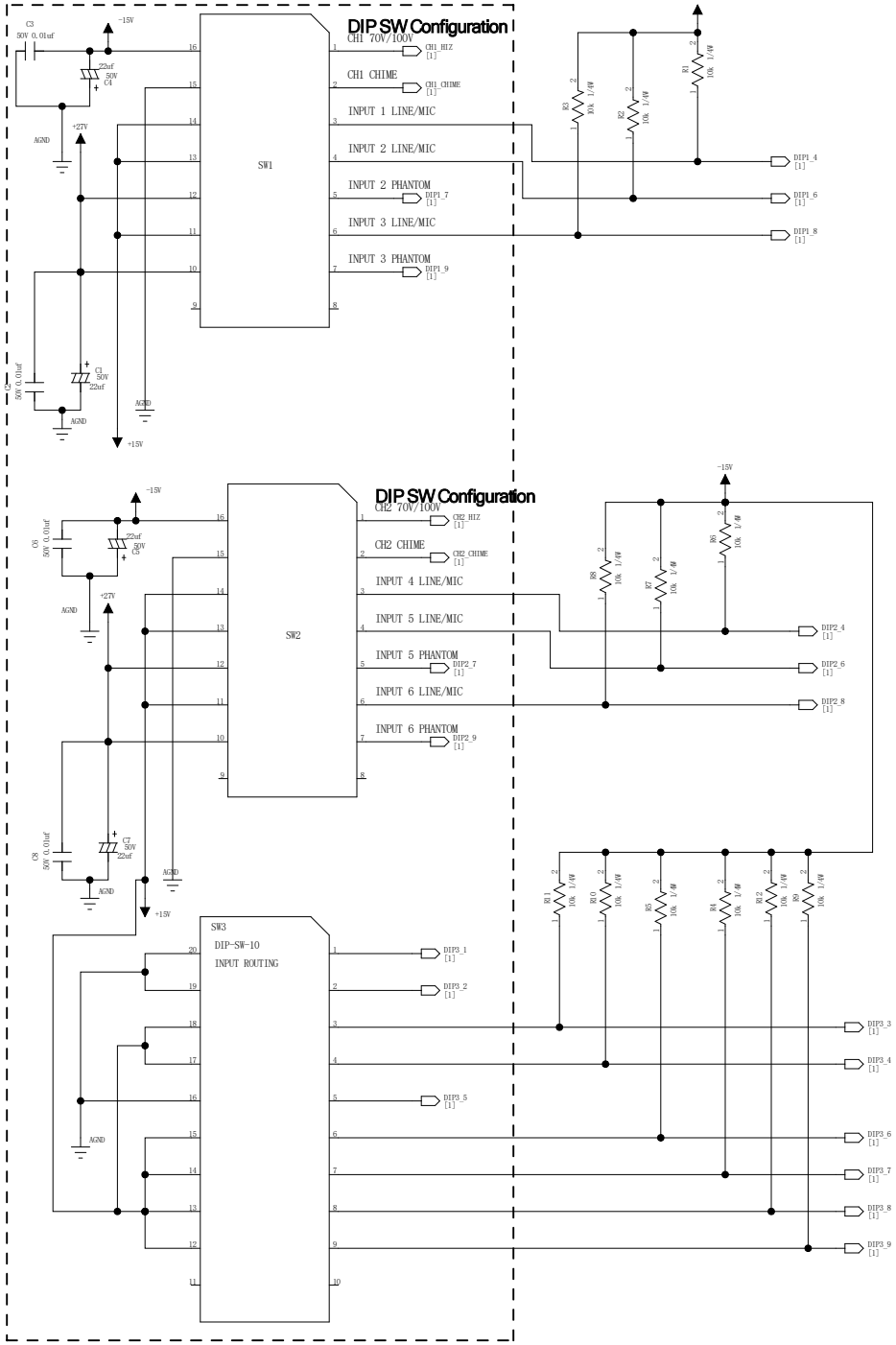


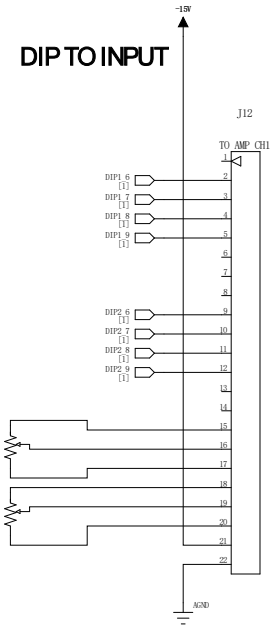


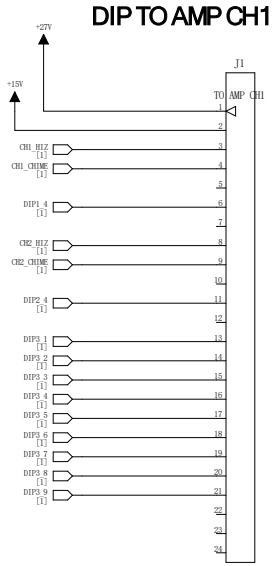




DRAWN: <Drawn By>	DATED: <Drawn Date>	COMPANY:			
CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - Input Board (2-CH)			
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: C	DRAWING NO: 0201000987-619050	REV: 011
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>		SHEET: 4 4 OF	







REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

COMPANY:			
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DRAWN: <Drawn By>	DATED: <Drawn Date>		
CHECKED: <Checked By>	DATED: <Checked Date>	CODE: <Code>	SIZE: C
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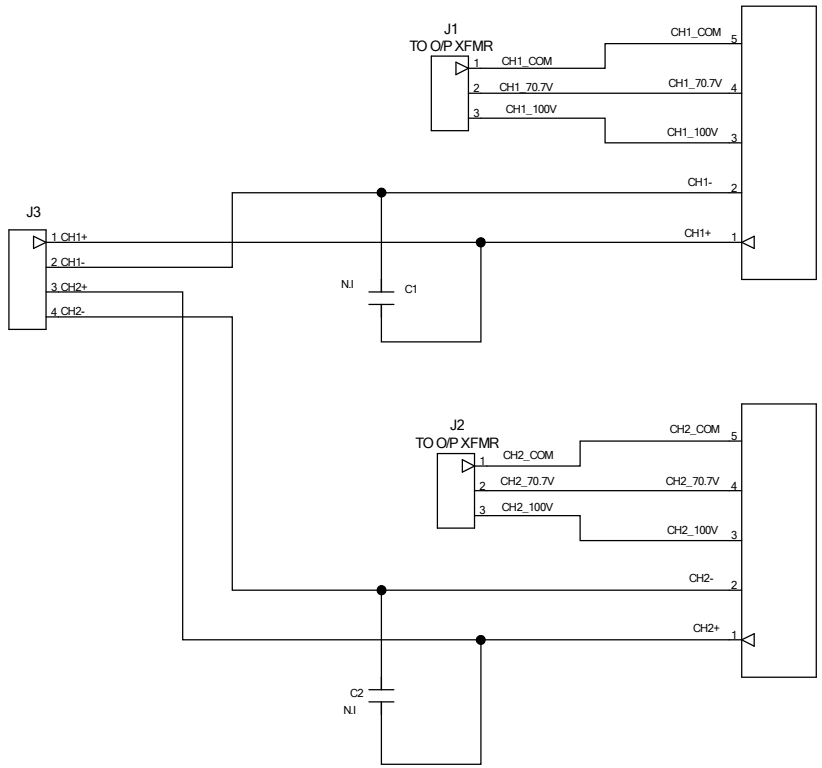
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



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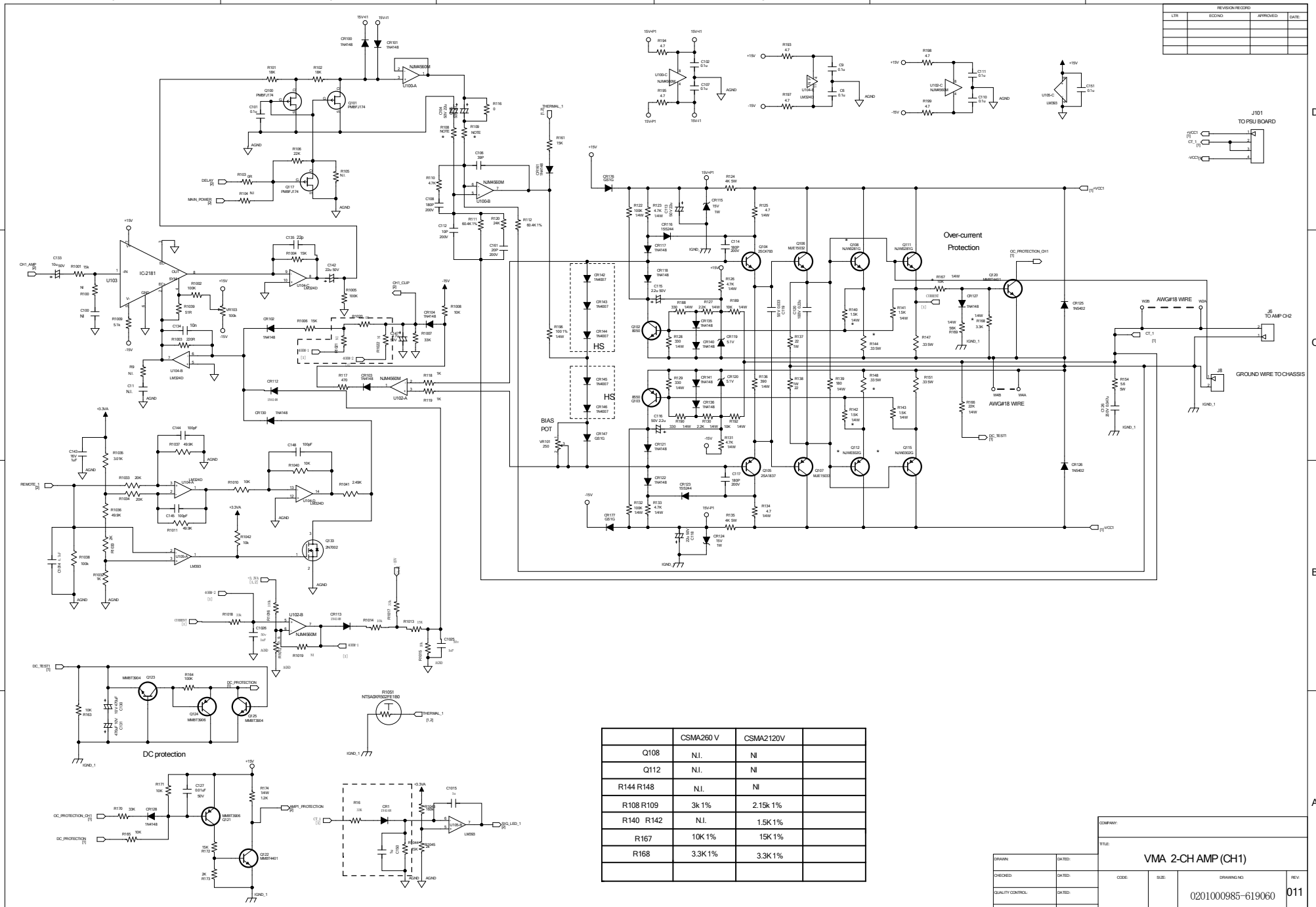
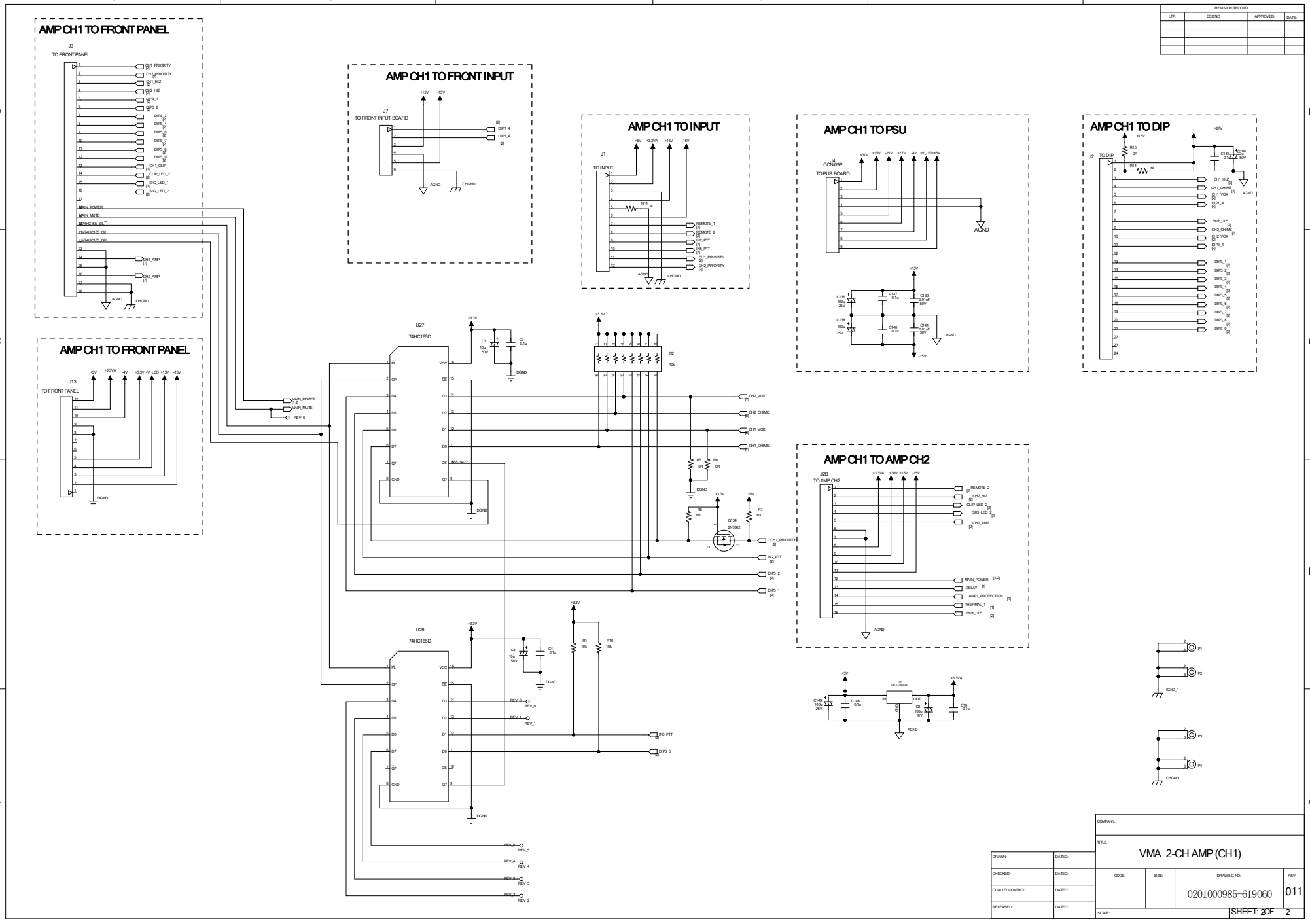
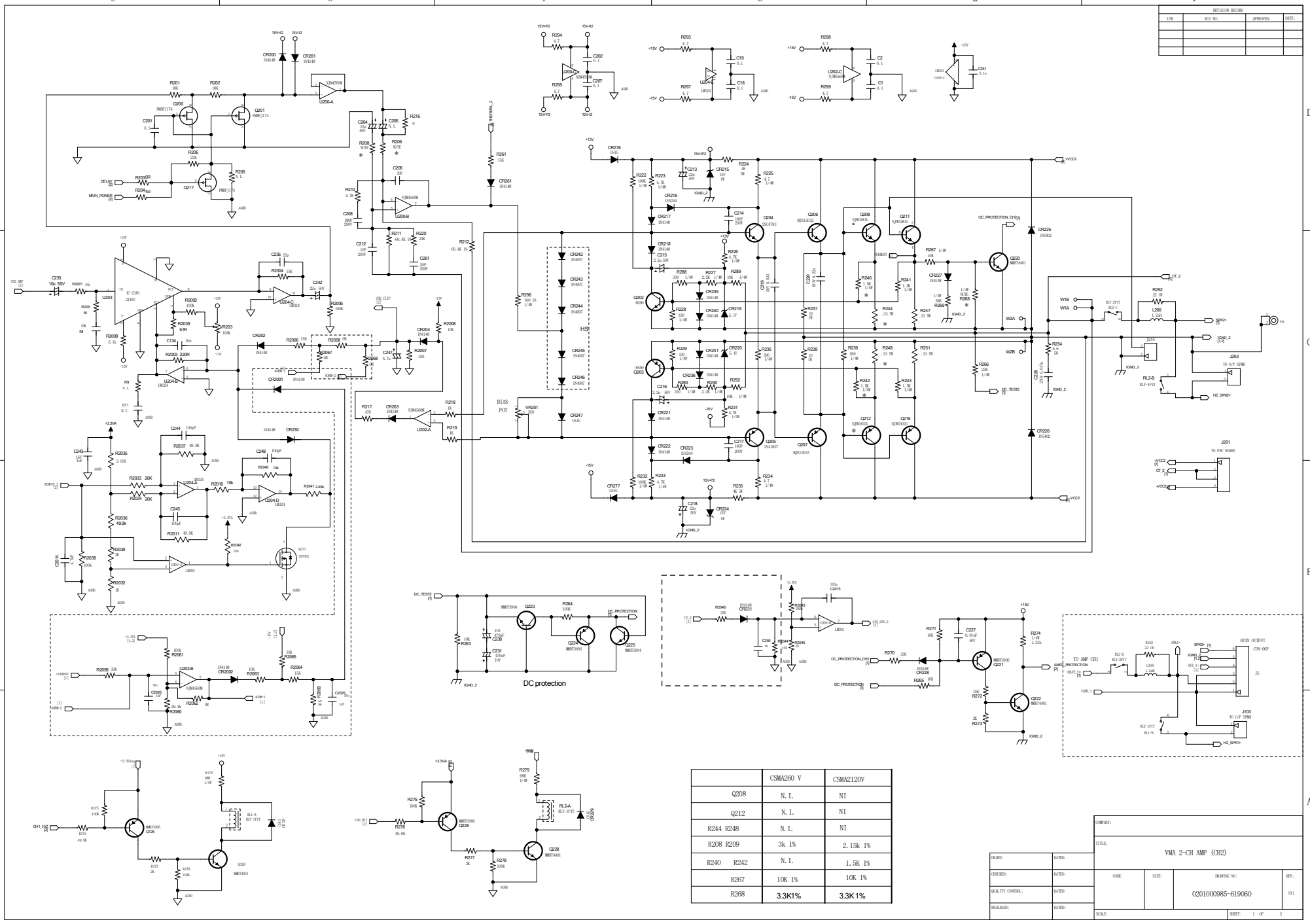
CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - SPEAKER OUTPUT (2-CH)			
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: B	DRAWING NO: 0201000988-619050	REV: 011
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>		SHEET: 1 OF 1	



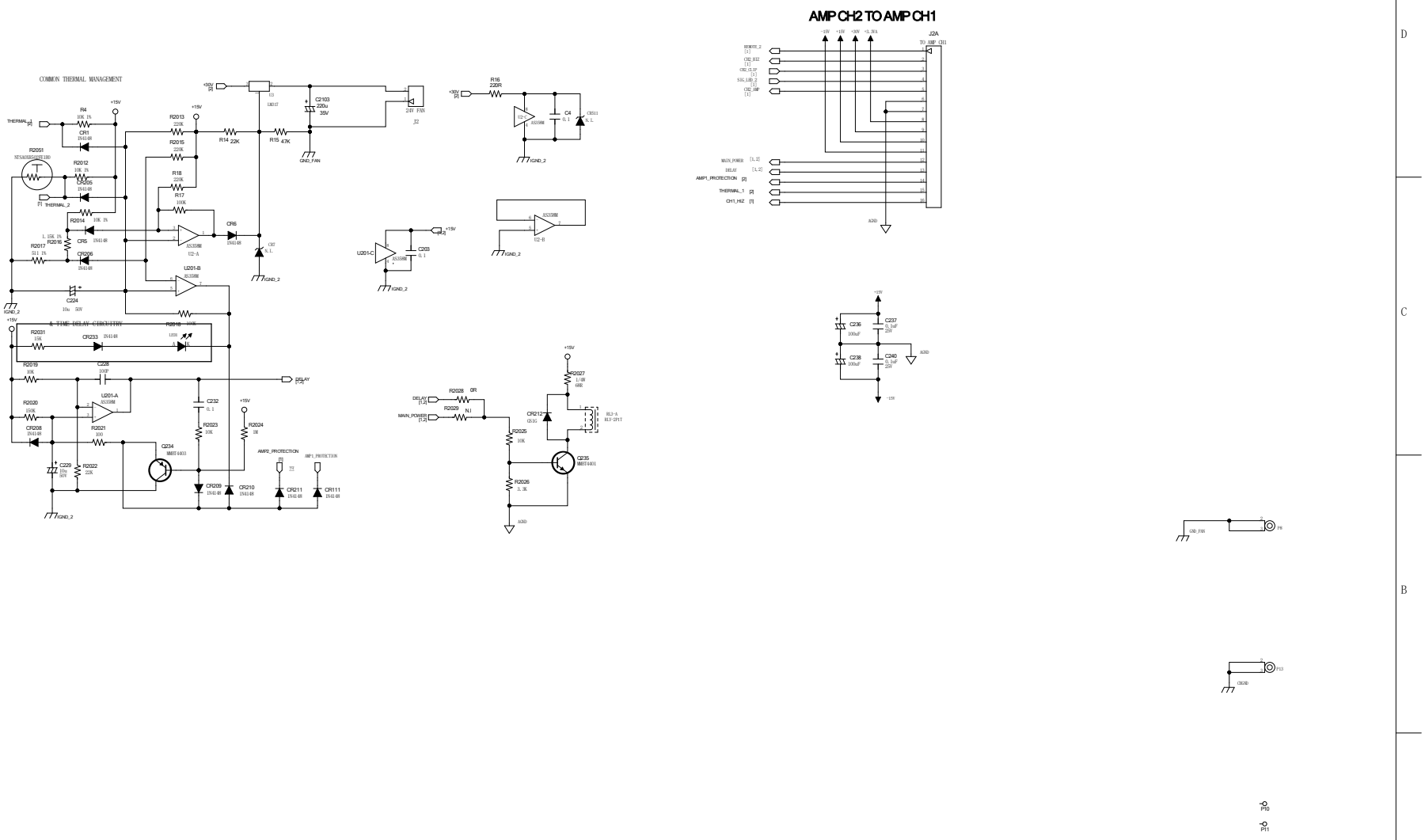
	CSMA260 V	CSMA2120V	
Q108	N.I.	NI	
Q112	N.I.	NI	
R144 R148	N.I.	NI	
R108 R109	3k 1%	2.15k 1%	
R140 R142	N.I.	1.5K 1%	
R167	10K 1%	15K 1%	
R168	3.3K 1%	3.3K 1%	

COMPANY:			
TITLE:	VMA 2-CH AMP (CH1)		
DRAWN:	DATED:	CODE:	SIZE:
CHECKED:	DATED:	DRAWING NO:	REV:
QUALITY CONTROL:	DATED:	0201000985-619060	011
RELEASED:	DATED:	SCALE:	SHEET 1 OF 2


AMP CH1 TO FRONT PANEL
AMP CH1 TO FRONT INPUT
AMP CH1 TO INPUT
AMP CH1 TO PSU
AMP CH1 TO DIP
AMP CH1 TO FRONT PANEL
AMP CH1 TO AMP CH2
U27
74HC165D
U28
74HC165D
VMA 2-CH AMP (CH1)
0201000985-619060
011
SHEET: 2OF 2



	CSMA260 V	CSMA2120V
Q208	N. I.	NI
Q212	N. I.	NI
R244 R248	N. I.	NI
R208 R209	3k 1%	2. 15k 1%
R240 R242	N. I.	1. 5K 1%
R267	10K 1%	10K 1%
R268	3.3K1%	3.3K1%


AMP CH2 TO AMP CH1
COMMON THERMAL MANAGEMENT
& TIME DELAY CIRCUITRY
J2A
TO AMP CH1
VMA 2-CH AMP (CH2)
<Code>
A1
0201000985-619060
011
SCALE: <Scale>
SHEET: 2of 2
<Drawn By>
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<Released By>
<Drawn Date>
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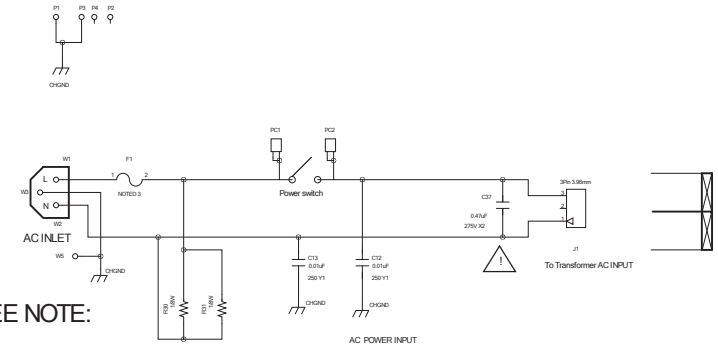
<Release Date>



SEE NOTE:

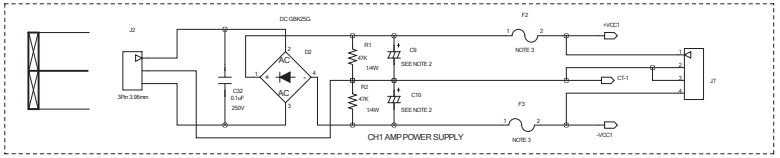
1. D3,R5,R6,C28,C29,C30,C31,C33,F8,F9,J10,J11 NO USE IN CSMA2260V,CSMA2120V

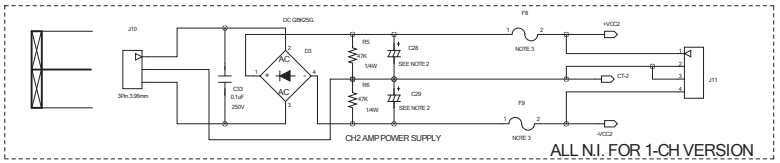
2.

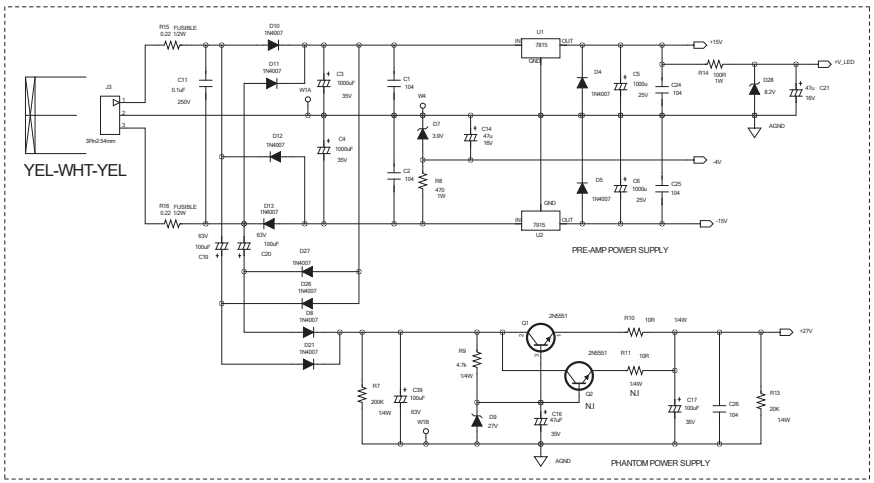
	CSMA160V	CSMA1120V	CSMA1240V	CSMA260V	CMA2120V
C9, C10 C28, C29	2200uF/50V P=10mm	3300uF/63V P=10mm	4700uF/87V P=10mm	2200uF/50V P=10mm	3300uF/63V P=10mm

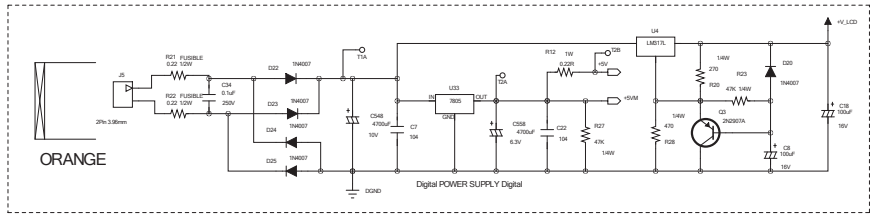
3.

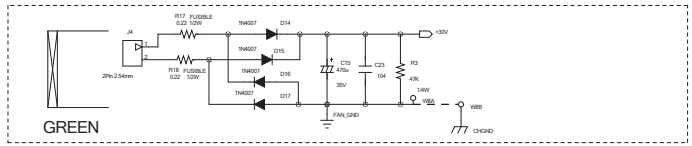
	CSMA160V	CSMA1120V	CSMA1240V	CSMA260V	CMA2120V
F2, F3 F8, F9	F4A/250V	F6.3A/250V	F8A/250V	F4A/250V	F6.3A/250V
F1 @230VAC	F5A/250V	F6.3A/250V	F8A/250V	F6.3A/250V	F8A/250V
F1 @120VAC	F6.3A/250V	F8A/250V	F10A/250V	F8A/250V	F10A/250V

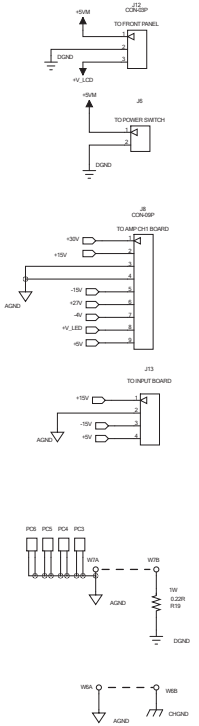








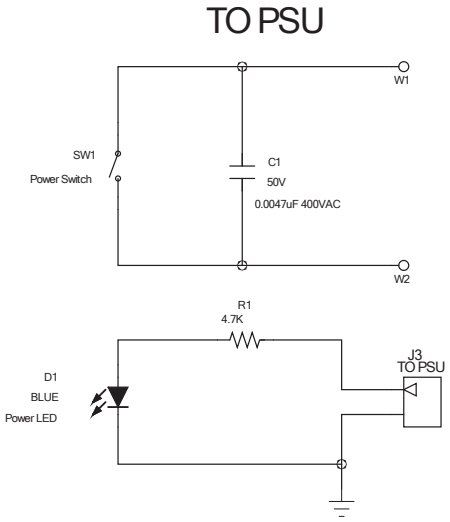




REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

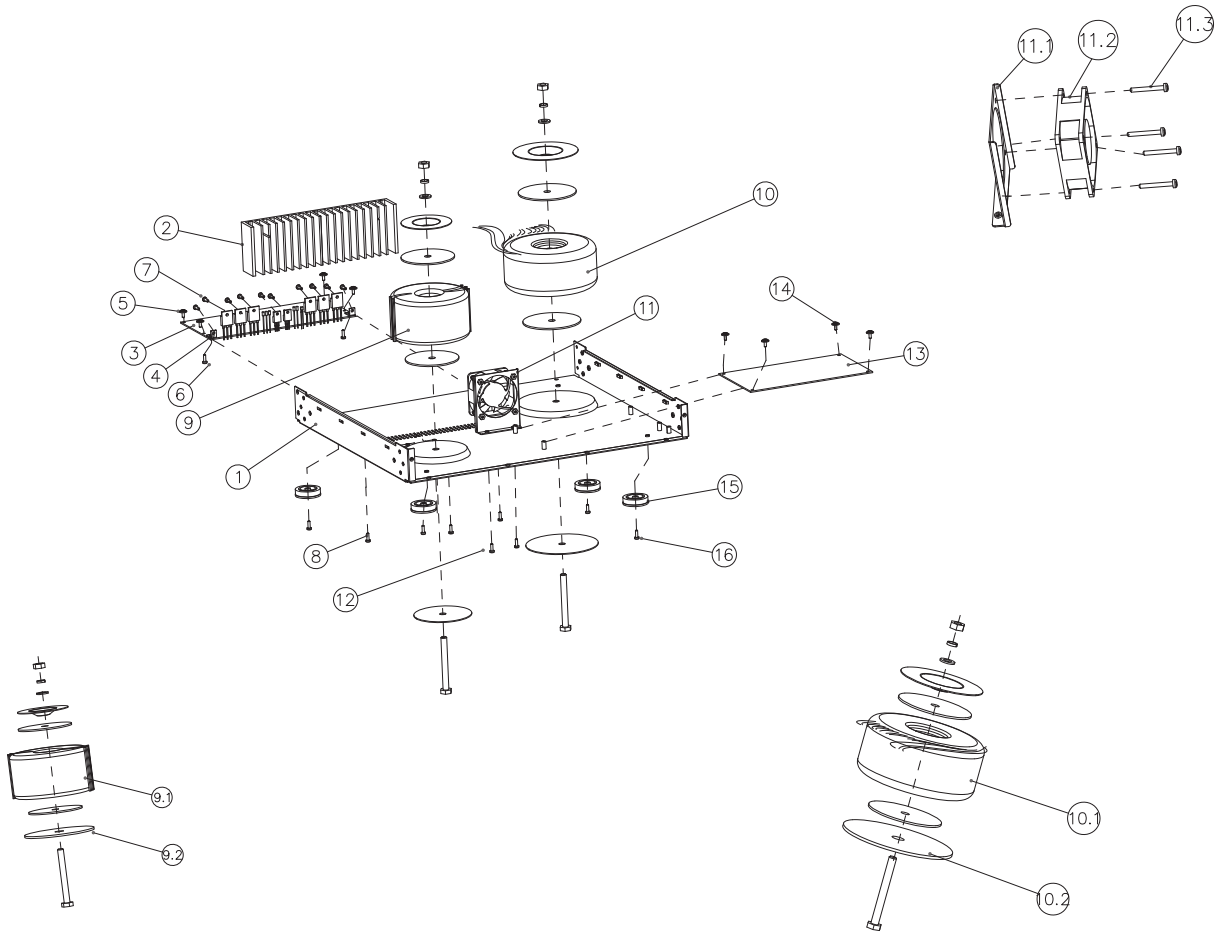
COMPANY:			
TITLE: CSMA160V/260V/1120V/2120V/1240V PSU			
CODE: 2015-11-13	SIZE:	DRAWING NO:	REV: 011
SCALE:		SHEET: OF	

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



DRAWN: <Drawn By>	DATED: <Drawn Date>	COMPANY:			
CHECKED: <Checked By>	DATED: <Checked Date>	TITLE: VMA - 2-CH POWER SWITCH			
QUALITY CONTROL: <QC By>	DATED: <QC Date>	CODE: <Code>	SIZE: B	DRAWING NO: 0201000987-619050	REV: 011
RELEASED: <Released By>	DATED: <Release Date>	SCALE: <Scale>		SHEET: 1 OF 1	

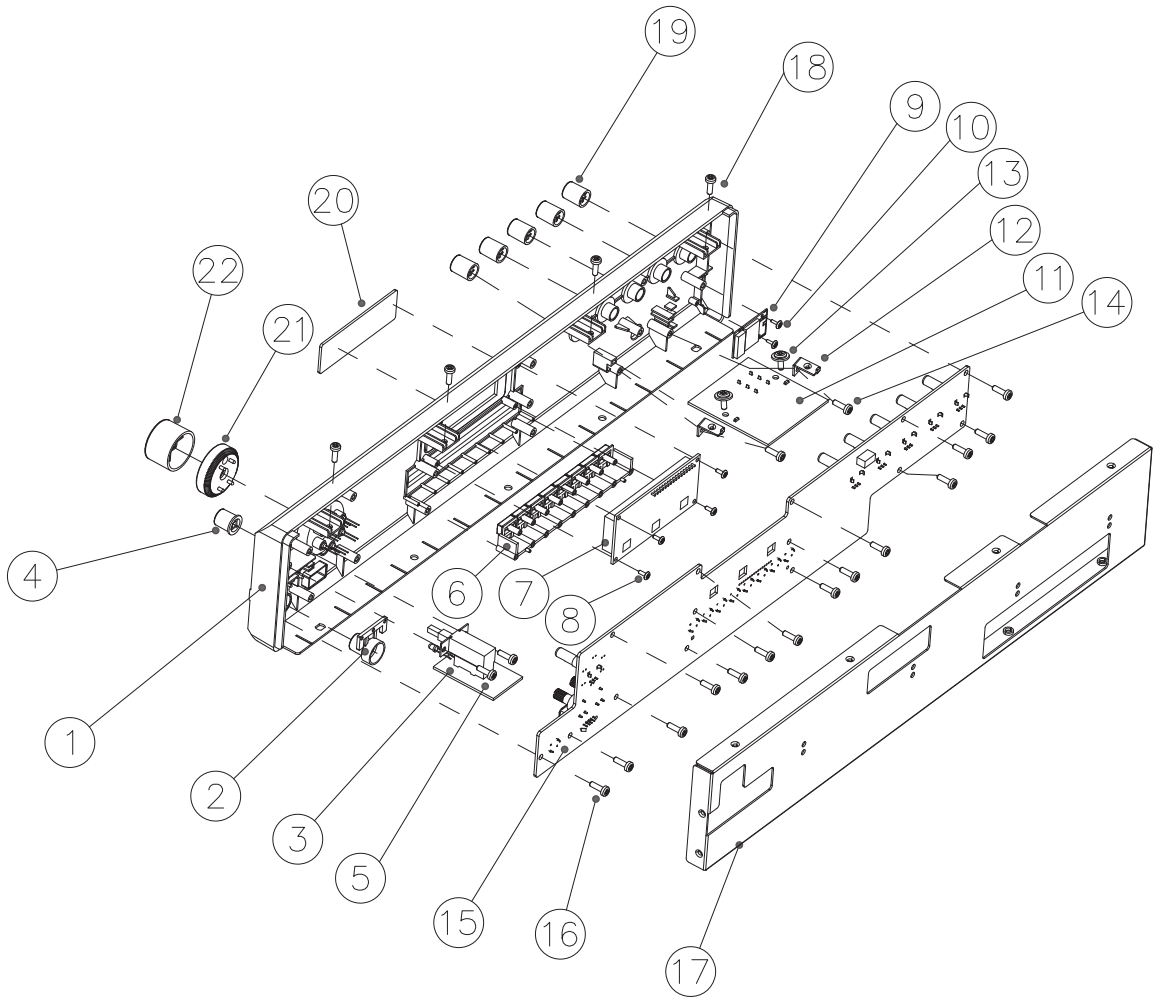
1 CHANNEL EXPLODE DRAWING



NO.		DESCRIPTION	NUMBER	
16		SCREW M3*12MM +P/H M/C ZINC BLACK	4	
15		FOOT PAD Φ35X9mm	4	
14		SCREW M3 X 6MM M/C +WASHER HEAD	4	
13		PCB MI ASSY 1-CH CSMA1240 V SERIES POWER BOARD	1	
12		SCREW M3*6MM PAN POZI BLACK	2	
11.3		SCREW M3*28MM PAN BLK ZINC	4	
11.2		FAN DC 60x20mm 24V	1	
11.1		FAN BRACKET SECC N NATURAL	1	
10.2		BIG GASKET SECC BLACK	1	
10.1			1	
9.2		SMALL GASKET SECC BLACK	1	
9.1				
8		SCREW M3*8MM +P/H M/C Z.BLK	3	
7		SCREW M3*10MM +P/B M/C ZINC WHITE	8	
6		SCREW M3*6MM PAN POZI BLACK	4	
5		SCREW M3 X 6MM M/C +WASHER HEAD	4	
4		HEADPHONE JACK FIX BRACKET SECC N NATURAL	2	
3		PCB MI ASSY 1-CH CSMA1240 V SERIES AMP BOARD	1	
2		HEATSINK 1 CHANNEL AL5052 ANODE BLACK	1	
1		BOTTOM CABINET 1 CHANNEL SECC BLACK	1	

UNSPECIFIED TORLANCE DECIMALS ANGULAR .X ±0.3 ±0.5° .XX ±0.15 .XXX ±0.10	APPROVALS	DATE	NAME
	DRN ZXJ	2016.01.10	
	CHK		DRAWING NO. Sb-001-002 / REV A
MATERIAL	SURFACE		
	COLOR		SIZE A4 / SCALE 1:1 / SHT 1 OF 1
FINISH	PART NUMBER		
	700CSMA1240EU-619		MODEL CSMA1240V

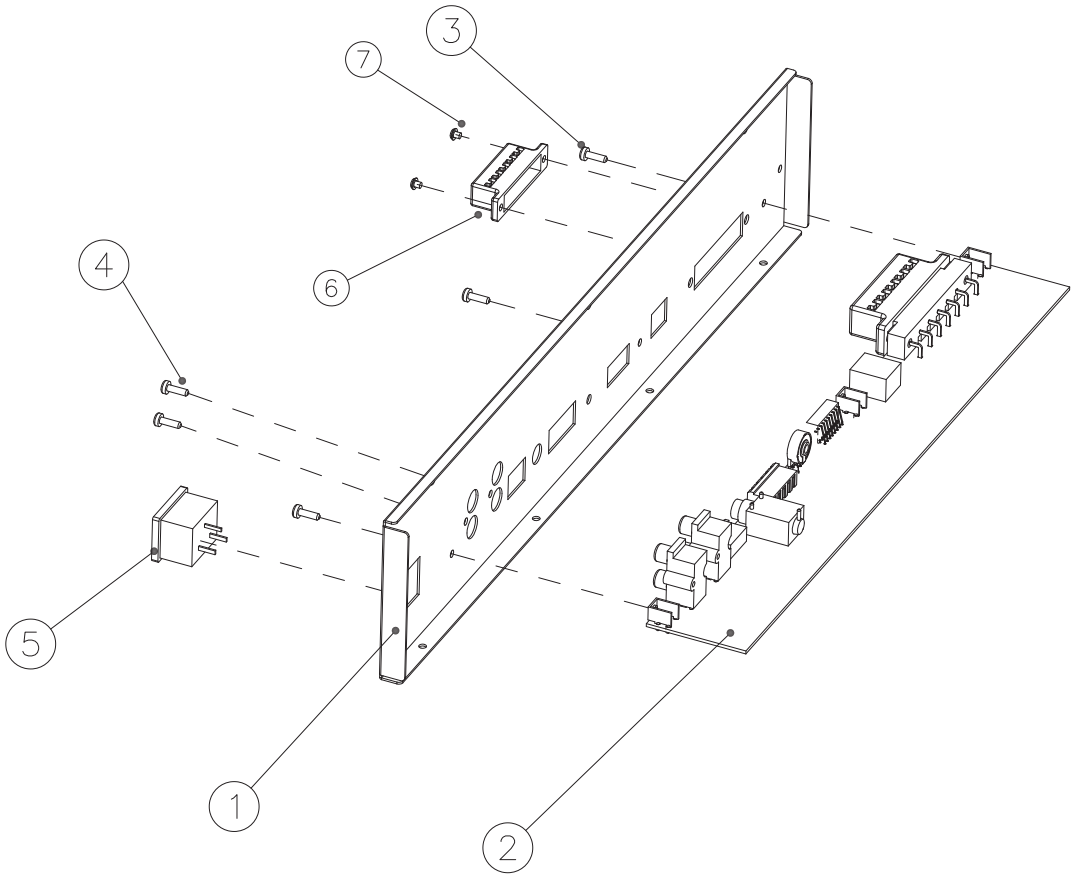
1 CHANNEL EXPLODE DRAWING



NO.		DESCRIPTION	NUMBER	
㉒		VOLUME KNOB ABS BLACK	1	
㉑		VOLUME LIGHT RING PMMA TRANSPARENT	1	
⑳		LCD LENS PMMA TRANSPARENT	1	
⑲		MIXER KNOB ABS BLACK	5	
⑱		SCREW M3*6MM PAN POZI BLACK	4	
⑰		SUB FRONT PANEL SECC N NATURAL	1	
⑯		SCREW M2.9x8mm S/T P/H ZINC BLK	14	
⑮		PCB MI ASSY 1-CH CSMA1240 V SERIES FRONT INPUT BOARD	1	
⑭		SCREW M2.9x8mm S/T P/H ZINC BLK	2	
⑬		SCREW M3 X 6MM M/C +WASHER HEAD	2	
⑫		HEADPHONE JACK FIX BRACKET SECC N NATURAL	2	
⑪		PHONE JACK 6.35mm TRS "RoHS""HaoYu"PJ-625C	1	
⑩		SCREW M1.5x5mm S/T P/H ZINC BLK	2	
⑨		BLUETOOTH AUDIO MODULE CSMA V SERIES "ROHS" "MCSLOGIC" MB8811C1B	1	
⑧		SCREW M2.0x6mm S/T P/H ZINC BLK	4	
⑦		LCD MODULE 16 CHAR X 2 LINE WITH BACKLIGHT "ROHS" CLOVER CV4162D-LW-ET-W2	1	
⑥		FUNCTION KEY ABS BLACK	1	
⑤		SCREW M2.9x8mm S/T P/H ZINC BLK	2	
④		POWER KNOB ABS BLACK	1	
③		POWER SWITCH SPST "ROHS" "INBOW" PS4-B120	1	
②		BLUETOOTH KNOB PC BLACK	1	
①		FRONT PANEL 1 CHANNEL	1	

UNSPECIFIED TORLANCE DECIMALS ANGULAR .X ±0.3 ±0.5° .XX ±0.15 .XXX ±0.10	APPROVALS	DATE	NAME
	DRN ZXJ	2016.01.10	
	CHK		DRAWING NO. Sb-001-002 / REV A
MATERIAL	SURFACE		SIZE A4 / SCALE 1:1 / SHT 1 OF 1
FINISH	COLOR		
	PART NUMBER		MODEL
	700CSMA1240EU-619		CSMA1240V

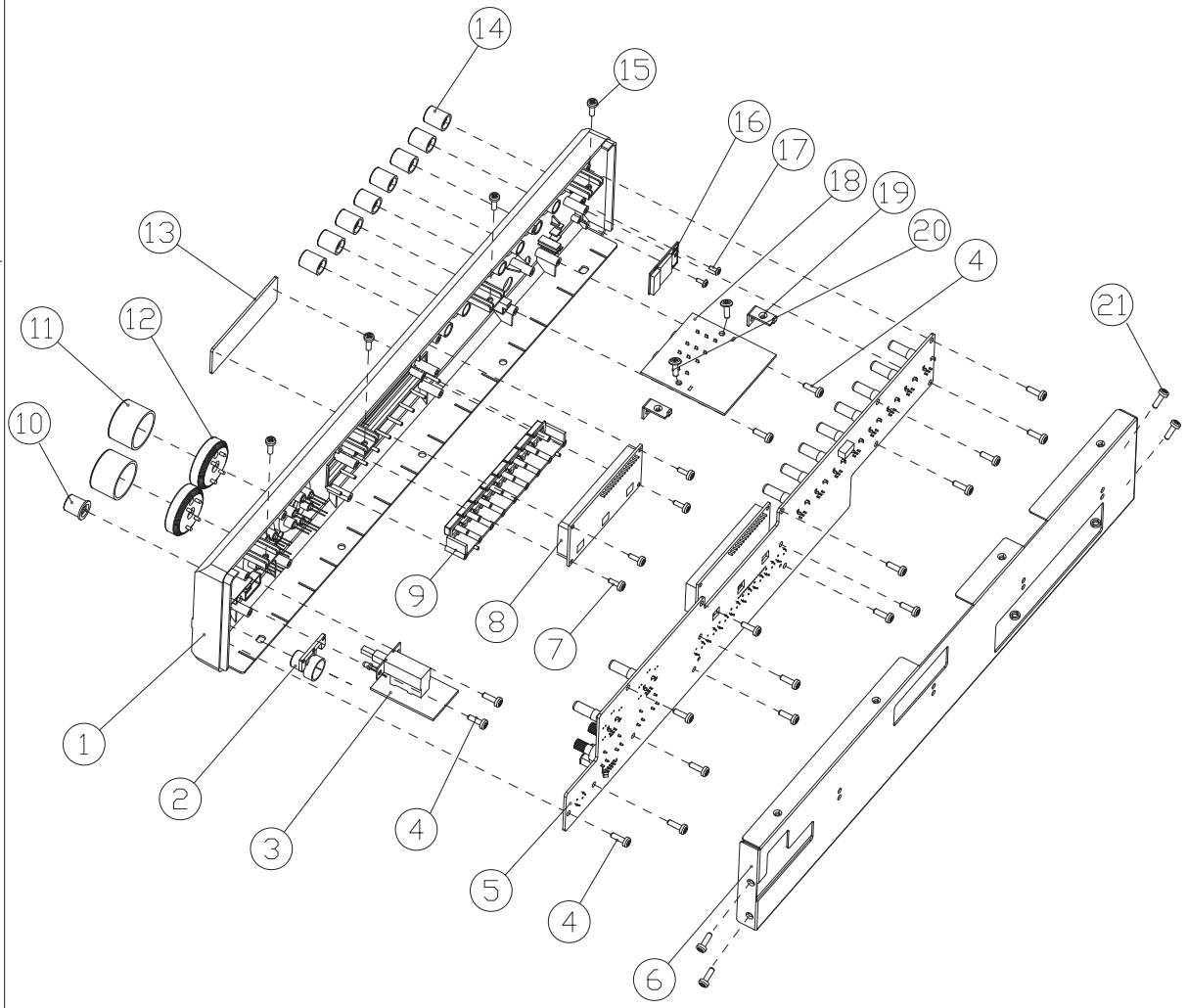
1 CHANNEL EXPLODE DRAWING



NO.		DESCRIPTION	NUMBER	
⑦		SCREW M3.5 X 8MM M/C +P/H NI	2	
⑥				
⑤		AC SOCKET IEC MALE 10A 250VAC 3PIN "ROHS" "RONGFENG" SS-120-E-4.8-V0(400-286-00)	1	
④		SCREW M2.9x8mm S/T P/H ZINC BLK	2	
③		SCREW M3*6MM PAN POZI BLACK	3	
②		PCB MI ASSY 1-CH CSMA1240 V SERIES INPUT BOARD	1	
①		REAR PANEL 1 CHANNEL SECC BLACK VMA1240V	1	

UNSPECIFIED TORLANCE DECIMALS ANGULAR .X ±0.3 ±0.5° .XX ±0.15 .XXX ±0.10	APPROVALS	DATE	NAME
	DRN ZXJ	2016.01.10	
	CHK		DRAWING NO. Sb-001-002 / REV A
MATERIAL	SURFACE		
	COLOR		SIZE A4 / SCALE 1:1 / SHT 1 OF 1
FINISH	PART NUMBER		
	700CSMA1240EU-619		MODEL CSMA1240V

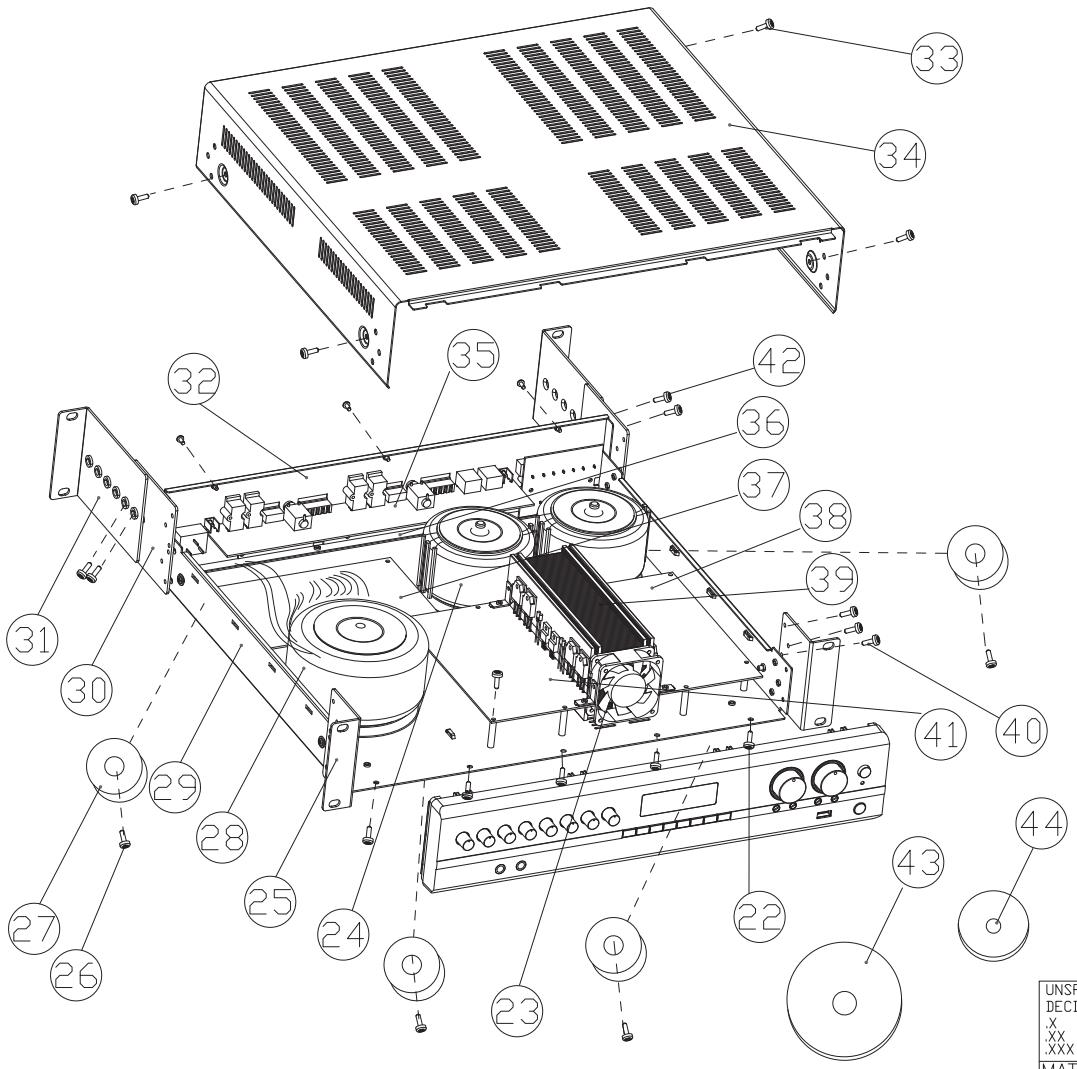
2 CHANNEL EXPLODE DRAWING



NO.		DESCRIPTION	NUMBER	
㉑		SCREW M3*8MM CNSK POZI BLACK REV.A "ROHS"	4	
⑳		SCREW M3*6MM PAN POZI BLACK REV.A "ROHS"	23	
⑲		HEADPHONE JACK FIX BRACKET SECC N NATURAL	2	
⑱		PCB MI ASSY 2-CH VMA2120/260 FRONT INPUT	1	
⑰		SCREW M1.5x5mm S/T P/H ZINC BLK REV.A	2	
⑯		BLUETOOTH AUDIO MODULE CSMA V SERIES	1	
⑮		SCREW M3 X 6MM M/C +WASHER HEAD BLK "ROH	4	
⑭		MIXER KNOB ABS BLACK REV.A "ROHS"	8	
⑬		LCD LENS PMMA TRANSPARENT REV.A W	1	
⑫		VOLUME LIGHT RING PMMA TRANSPARENT REV.A	2	
⑪		VOLUME KNOB ABS BLACK REV.A "ROHS"	2	
⑩		POWER KNOB ABS BLACK REV.A "ROHS"	1	
⑨		FUNCTION KEY ABS BLACK REV.A	1	
⑧		LCD MODULE 16 CHAR X 2 LINE WITH BACKLI	1	
⑦		SCREW M2.0x6mm S/T P/H ZINC BLK REV.A "	4	
⑥		SUB FRONT PANEL SECC N NATURAL REV.B	1	
⑤		PCB MI ASSY 2-CH VMA2120/260 FRONT PANEL	1	
④		SCREW M2.9x8mm S/T P/H ZINC BLK REV.A	22	
③		PCB MI ASSY 2-CH VMA2120/260 PWR-SW BOARD	1	
②		BLUETOOTH KNOB PC BLACK REV.A W/LASER REV.A	1	
①		FRONT PANEL 2 CHANNEL ABS BLACK VMA2120V REV.A W/ARTWORK REV.A "ROHS"	1	

UNSPECIFIED TORLANCE DECIMALS ANGULAR .X ±0.3 ±0.5° .XX ±0.15 .XXX ±0.10	APPROVALS	DATE	NAME 619 2 CHANNEL 2120 EU
	DRN SUNNY	2016.09.15	
	CHK		DRAWING NO. / REV A
MATERIAL	SURFACE		
	COLOR		SIZE A4 / SCALE 1:1 / SHT 1 OF 2
FINISH	PART NUMBER		
	700CSMA2120EU-619		MODEL VMA2120EU

2 CHANNEL EXPLODE DRAWING



NO.		DESCRIPTION	NUMBER	
44		SMALL GASKET SECC BLACK REV.A "ROHS"	2	
43		BIG GASKET SECC BLACK REV.A "ROHS"	1	
42		SCREW M6*14mm +P/H M/C ZINC COLOR	4	
41		PCB MI ASSY 2-CH VMA2120 CH2-AMP BOARD	1	
40		SCREW M3*8MM +P/H M/C Z.BLK REV.A	12	
39		HEATSINK 2 CHANNEL AL5052 ANODE BLACK	1	
38		PCB MI ASSY 2-CH VMA2120 CH1-AMP BOARD	1	
37		PCB MI ASSY 2-CH VMA2120 PSU BOARD	1	
36		PCB MI ASSY 2-CH VMA2120/260 DIP BOARD	1	
35		PCB MI ASSY 2-CH VMA2120/260 INPUT BOARD	1	
34		TOP COVER SECC BLACK REV.A "ROHS"	1	
33		SCREW M4 X 8MM M/C +WASHER HEAD BLK "ROHS"	4	
32		REAR PANEL 2 CHANNEL SECC BLACK VMA2120V	1	
31		REAR ANGLE BRACKET SECC BLACK REV.A	2	
30		REAR PLAT BRACKET SECC BLACK REV.B "ROHS"	2	
29		BOTTOM CABINET 2 CHANNEL SECC BLACK REV.B	1	
28		X'FORMER PW TOROIDAL VMA2120 230V EU	1	
27		FOOT PAD Φ35X9mm REV.A "ROHS" RA-35(S)	4	
26		SCREW M3 X 10MM M/C +WASHER HEAD NI PLT	4	
25		FRONT ANGLE BRACKET SECC BLACK REV.A	2	
24		X'FORMER OUTPUT TOROIDAL 120W 70V/100V	2	
23		FAN DC 60x20mm 24V 0.13A 3.5W 4500RPM	1	
22		SCREW M4 X 8MM M/C +B/H BLK "ROHS"	5	

UNSPECIFIED TORLANCE DECIMALS ANGULAR .X ±0.3 ±0.5° .XX ±0.15 .XXX ±0.10	APPROVALS	DATE	NAME: 619 2 CHANNEL 2120 EU
	DRN SUNNY	2016.09.15	
	CHK		DRAWING NO. / REV: A
MATERIAL	SURFACE		
	COLOR		SIZE: A4 / SCALE: 1:1 / SHT: 20F2
FINISH	PART NUMBER: 700CSMA2120EU-619		MODEL: VMA2120EU

Bill of Materials - VMA SERIES

Bill of Materials		
Ref ID	Description	QTY
1	LINE CORD IEC EU 10A 250V L=2000MM "I-SHENG" V246C30161220000	1
2	LEFT EPE 501X160X125mm REV.B	1
3	RIGHT EPE 501X160X125mm REV.B	1
4	CARTON BOX 532X524X182mm VMA SERIES REV.A W/ARTWORK REV.A	1
5	FRONT ANGLE BRACKET SECC BLACK REV.A	2
6	REAR PLAT BRACKET SECC BLACK REV.B	2
7	REAR ANGLE BRACKET SECC BLACK REV.A	2
8	SCREW M3*8MM +P/H M/C Z.BLK REV.A	12
9	SCREW M6*14mm +P/H M/C ZINC COLOR REV.A	4
10	SPRING WASHER M6 DIN7980 REV.A	4
11	WASHER M6 FOR BOLTS ISO7089 REV.A	4
12	POLYBAG THK=0.01MM REV.A	2
13	POLYBAG 200X120 X0.1mm REV.A	2
14	POLYBAG 150X100 X0.06mm REV.A	4
15	PROTECTIVE COVER 619 VMA	1
16	EPE SHEET 451X352X166mm REV.A	1
17	POLYBAG 650X550 X0.06mm REV.A	1
18	LABEL 101X76mm SELF ADHESIVE WHITE PAP	1
19	LABEL 41X15mm SELF ADHESIVE WHITE PAP	1
20	DESSICANT BAG 10g NON-DMF	1
21	POLYTROPYLENE YELLOW PACKING BAND (FOR M/C SEALER)	0.3
22	FILM PROTECTIVE W=450MM	0.3
23	STRAP CONNECTOR STEEL	0.125
24	CORNER PAPER PULP 5 LAYERS L=1250MM	0.125
25	CORNER PAPER PULP 5 LAYERS L=800MM	0.125
26	PALLET PLYWOOD 1155X1110X144MM REV.A	0.031
27	INSTRUCTION GUIDE ALL VMA SERIES REV.A	1
28	POLYBAG 240X170 X0.06mm REV.A	1
29	MALE PLUG CONNECTOR 3 PINS 5.0P GREEN "DEGSON" 2EDGK-5.0-03P-14-1000AH	1
30	MALE PLUG CONNECTOR 5 PINS 5.0P GREEN "DEGSON" 2EDGK-5.0-05P-14-1000AH	1
31	FINAL ASSY VMA160 230V EU VER 1-CH MIXER-AMPLIFIER 60W	1
32	SUB FINAL ASSY VMA160 230V EU VER 1-CH MIXER-AMPLIFIER 60W	1
33	CABLE ASSY FFC 28 PINS P=1.0 L=110mm DIFFERENT SIDE FOR CONDUCTIVE "LWX" FC128-110-B1-44-88_WX	1
34	CABLE ASSY FFC 10 PINS P=1.0 L=280mm SAME SIDE FOR CONDUCTIVE "HONGJIAN" HJ-GH-0058	1
35	X'FORMER PW TOROIDAL 230V VMA160 EU "Eaglerise" "H0120-0652"	1
36	X'FORMER OUTPUT TOROIDAL 60W 70V/100V VMA160/VMA260 "GLORIA" TD-22-0060A	1
37	LCD MODULE 16 CHAR X 2 LINE WITH BACKLIGHT CLOVER CV4162D-LW-ET-W2	1
38	HEADER 16PIN P=2.5MM HOUSING ST "LWX" S01-A2501-WV16A-LHE	1
39	BLUETOOTH AUDIO MODULE CSMA V SERIES "MCSLOGIC" MB8811C1B	1
40	AC SOCKET IEC MALE 10A 250VAC 3PIN "RONGFENG" SS-120-E-4.8-VO(400-286-00)	1
41	FRONT PANEL 1 CHANNEL ABS BLACK VMA 1600V REV.A W/ARTWORK REV.A	1
42	FUNCTION KEY ABS BLACK REV.A W/ARTWORK REV.A	1
43	POWER KNOB ABS BLACK REV.A	1
44	BLUETOOTH KNOB PC BLACK REV.A W/LASER REV.A	1
45	VOLUME LIGHT RING PMMA TRANSPARENT REV.A	1
46	LCD LENS PMMA TRANSPARENT REV.A W/ARTWORK REV.A	1
47	VOLUME KNOB ABS BLACK REV.A	1
48	MIXER KNOB ABS BLACK REV.A	5
49	BOTTOM CABINET 1 CHANNEL SECC BLACK REV.B	1
50	TOP COVER SECC BLACK REV.A	1

51	SUB FRONT PANEL SECC N NATURAL REV.B	1
52	HEADPHONE JACK FIX BRACKET SECC N NATURAL REV.A	2
53	BIG GASKET SECC BLACK REV.A	1
54	SMALL GASKET SECC BLACK REV.A	1
55	FOOT PAD Φ35X9mm REV.A RA-35(S)	4
56	SCREW M4 X 8MM M/C +WASHER HEAD BLK	4
57	SCREW M4 X 8MM M/C +B/H BLK	5
58	SCREW M3*8MM CNSK POZI BLACK REV.A	4
59	SCREW M3*6MM PAN POZI BLACK REV.A	18
60	SCREW M3*8MM +P/H M/C Z.BLK REV.A	15
61	SCREW M3 X 10MM M/C +WASHER HEAD NI PLT	4
62	SCREW M2.9x8mm S/T P/H ZINC BLK REV.A	20
63	SCREW M1.5x5mm S/T P/H ZINC BLK REV.A	2
64	SCREW M2.0x6mm S/T P/H ZINC BLK REV.A	4
65	FUSE 5*20MM GLASS FAST-ACTING LO BK CAP 4A 250V VDE/CQC/UL/PSE/CCC "BETTER" 5211400200	2
66	FUSE 5*20MM GLASS FAST-ACTING LO BK CAP 5A 250V VDE/CQC/UL/PSE/CCC "BETTER" 5211500200	1
67	SCREW M3.5 X 8MM M/C +P/H NI	2
68	SCREW M3*8mm PPH INT LCK W/WASHER SS REV.A	9
69	REAR PANEL 1 CHANNEL SECC BLACK VMA1600V REV.A/ ARTWORK REV.B	1
70	HEAT SHRINKABLE TUBE DIA 35.0MM BLACK	0.06
71	CABLE TIE BLACK L100 X W2.5 GT-100M "KANG YANG"	13
72	LABEL 25X22.5mm SELF ADHESIVE WHITE PAP REV.B	1
73	619 60W 70V/100V M8*65	1
74	619 60W 70V/100V M8	1
75	619 60W 70V/100V M8*17*1.2	2
76	619 60W 70V/100V M8*2.5	1
77	619 60W 70V/100V 75*8.5*2.0	2
78	619 60W 70V/100V 70*8.5*1.0	1
79	LABEL 16X13MM SELF ADHESIVE COPPER PAP REV.A	1
80	CABLE ASSY UL1015 AWG16 1PIN L=100MM YELLOW-GREEN "HONGJIAN" HJ-GH-0051	1
81	HEAT SHRINKABLE TUBE DIA. 6.0MM BLACK	0.06
82	LABEL GROUND DIA 10MM	1
83	LABEL BLANK #223 12*30MM	2
84	CABLE ASSY UL1672 AWG16 1PIN L=100MM BROWN "NANGUDI" "A576-1609-07-02-1"	1
85	CABLE ASSY UL1672 AWG16 1PIN L=100MM BLUE "NANGUDI" "A576-1609-07-01-1"	1
86	MOVEABLE BUSHING NYLON6 "KANG YANG" (KG-010C)	0.1
87	SCREW M3 X 6MM M/C +WASHER HEAD BLK	4
88	FOAM SHEET WITH 3M ADHESIVE FOR LCD MODULE REV.A	1
89	619 230V M8*65	1
90	619 230V M8	1
91	619 230V Φ8*17*1.2	2
92	619 230V Φ8*2.5	1
93	619 230V 74*8.5*2.0	2
94	619 230V 72*8.5*1.2	1
95	PCB MI ASSY 1-CH VMA1240/1120/160 FRONT PANEL (MCU) BOARD	1
96	CABLE ASSY UL2651 AWG26 L=100MM 16PIN P=2.5mm/2.0mm WHITE "HONGJIAN" HJ-GH-0067	1
97	CABLE ASSY UL1007 AWG22 3PIN P=2.54mm L=500mm "HONGJIAN" HJ-GH-0065	1
98	CABLE ASSY UL2854 AWG26 5PIN P=2.0MM L=480mm WITH GND SHIELD "LWX" WI-GC-K10-9826B	1
99	CABLE ASSY UL2651 AWG26 8 PINS P=2.0MM L=150MM "HONGJIAN" HJ-GH-0068	1
100	POT 25A10K MONO 9MM L=25MM TH "IDEL" R09122N-FB25B7-25A103	5
101	LED RED D=3MM NO-HOLDER MT-204RD "BRIGHTLED" BL-B4541T-AT	3
102	LED GREEN 3MM RND HI-BRI "KINGBRIGHT" L-34FGDK	3

103	USB A-TYPE CONNECTOR 4PIN DIP "ZHONG ZHOU" USB-901H-GT-BW	1
104	CRYSTAL OSC 12MHZ HC49 CL18PF 50PPM "UTECH" HC-49/S	1
105	CONN 10PIN FLAT FLEX P=1.0MM DIP TH WITH LOCK "HONGJIAN"	1
106	POT 50KB 3LEAD "IDEL" RX10020N-TS18B7-B503	2
107	CONN 28PIN FLAT FLEX P=1.0MM DIP TH WITH LOCK "FPC10SST28007""HONGJIAN"	1
108	CONN HEADER 2P 2.54MM MALE CRMP TOP ENTRY PCB "SHI YIN"25001SSWT0281PT	1
109	LABEL 30.5X10.5mm SELF ADHESIVE WHITE PAP	3
110	POT 10K 25A MONO 9MM L=25MM VERT TH "IDEL" R09122N-FB25B7-25A103	1
111	PCB SMD ASSY 1-CH VMA1240/1120/160 FRONT PANEL (MCU) BOARD	1
112	RES SMD 0603 1/16W 1% 510R	3
113	RES SMD 0603 1/16W 1% 110K T&R "FENG HUA" RC-03K1103FT	1
114	RES SMD 0603 1/16W 1% 12.7K T&R "FENG HUA"	3
115	RES SMD 0603 1/10W 1% 221K	6
116	RES SMD 0603 1/10W 1% 2.74K	5
117	RES SMD 0603 1/16W 1% 3.3M T&R	1
118	RES SMD 0603 1/16W 1% 681K	1
119	RES SMD 0603 1/16W 1% 750K T&R	1
120	RES SMD 0603 1/16W 1% 1.2K	1
121	RES SMD 0603 1/16W 1% 2.2K	5
122	RES SMD 0603 1/16W 1% 4.7K	1
123	RES SMD 0603 1/16W 1% 560R	2
124	RES SMD 0603 1/16W 1% 5.6K	1
125	RES SMD 0603 1/16W 1% 8.2K	1
126	RES SMD 0603 1/16W 5% 0R	20
127	RES SMD 0603 1/16W 5% 10K	29
128	RES SMD 0603 1/10W 1% 20K T&R	1
129	RES SMD 0603 1/10W 5% 270R	4
130	RES SMD 0603 1/10W 1% 33R	5
131	RES SMD 0603 1/10W 1% 75R	2
132	RES SMD 0603 1/10W 1% 100K	10
133	RES SMD 0603 1/10W 1% 1K5	1
134	RES SMD 0603 1/10W 1% 16.2K	1
135	RES SMD 0603 1/10W 1% 2K	3
136	RES SMD 0603 1/10W 1% 3K	1
137	RES SMD 0603 1/10W 1% 33.2K T&R	2
138	RES SMD 0603 1/10W 1% 4.75K	3
139	RES SMD 0603 1/10W 1% 47.5K	3
140	RES SMD 0603 1/10W 1% 4.99K	5
141	RES SMD 0603 1/10W 1% 49.9K	1
142	RES SMD 0603 1/10W 1% 6.19K T&R	1
143	RES SMD 0603 1/10W 5% 22R	2
144	RES SMD 0603 1/10W 5% 47R	11
145	RES SMD 0603 1/10W 5% 100R	1
146	RES SMD 0603 1/10W 5% 220R	37
147	RES SMD 0603 1/10W 5% 1K	3
148	RES SMD 0603 1/10W 5% 1M	5
149	RES SMD 0603 1/10W 5% 15K	2
150	RES SMD 0603 1/10W 5% 470R	4
151	RES SMD 1206 1/4W 1% 2.2K	1
152	CAP SMD CER 4.7UF 10% 16V 0805 X7R	5
153	CAP SMD CER 47PF 5% 50V 0603 COG	7
154	CAP SMD CER 68PF 5% 50V 0603 NPO	4

155	CAP SMD CER 100PF 5% 50V 0603 C0G	6
156	CAP SMD CER 1000PF 10% 50V 0603 X7R	25
157	CAP SMD CER 0.01UF 10% 50V 0603 X7R	3
158	CAP SMD CER 22PF 5% 50V 0603 COG	3
159	CAP SMD CER 33pF 10% 50V 0603 X7R	2
160	CAP SMD CER 1UF 10% 16V 0603 X5R	7
161	CAP SMD CER 10UF 20% 25V 0603 X5R	3
162	CAP SMD CER 680PF 10% 50V 0603 X7R	1
163	CAP SMD CER 0.22uF 10% 50V 0603 X5R	1
164	CAP SMD CER 0.1UF +80%/-20% 50V 0603 Y5V	54
165	CAP SMD ELEC 100UF 20% 50V 8*10.5MM VEJ	3
166	CAP SMD ELEC 22UF 20% 16V 5*5.4MM "LELON" VEJ220M1CTR-0505	1
167	CAP SMD ELEC 10UF 20% 16V BI-POLAR 5*5.4MM "FUJICON" CN1C100M-CRD 54	12
168	CAP SMD CER 100uF 20% 6.3V 1206 X5R	7
169	CAP SMD ELEC 100UF 20% 6.3V 5*5.4MM "FUJICON" CSOJ101M-CRD54	2
170	IC AS4C4M16SA-6TIN SMD 54-PIN TSOP II 64Mb SDRAM "ALLIANCE"AS4C4M16SA-6TIN	1
171	IC NJM13700 SMD DMP16 DUAL OTA "JRC" NJM13700M	1
172	IC TL074 SO-14 LOW NOISE JFET QUAD OPAMP "ST" TL074CDT	2
173	IC CF4558 SMD DUAL OP-AMP SOP8 T&R "SEMICO" CF4558CB	3
174	IC LM393DR SMD 8-PIN SOIC DUAL DIFFERNTIAL COMPARATORS "TI"LM393DR	1
175	DIODE SCHOTTKY BAT54C SMD SOT-23 0.2A/30V COMMON CATHODE "SEMTECH" "BAT54C	1
176	TRANS MMBT3904L SOT-23 NPN B.E.C 40VCEO 0.2A "ON SEMI" MMBT3904LT1G	2
177	TRANS MOSFET 2N7002 SOT-23 N-CHAN 60V 7R5 "FAIRCHILD" 2N7002	3
178	FET MMBFJ108 SMD SUPERSOT-3 N-CH 25V IDSS=80MA "FAIRCHILD"MMBFJ108	1
179	TRANS 3906 SOT-23 PNP "ONSEMI" MMBT3906LT1G	3
180	FERRITE BEAD SMD 0603 600 OHM 2A "TAI-TECH" HCB1608KF-601T20	3
181	FERRITE BEAD SMD 0603 330 OHM 2A "TAI-TECH" HCB1608KF-331T20	2
182	FERRITE BEAD SMD 0603 220 OHM 2A "TAI-TECH" HCB1608KF-221T20	1
183	Surface Mount Tactile SW 1P1T 50MA/12V VER H=5MM Wah Shun TD-03XA	9
184	IC V809R-LF SOT23-3 2.63V Reset Circuit "Power Source" V809R-LF	1
185	IC AIC1747-33GX3A SMD SOT89-3P LDO VREG 3.3V 300mA "AIC" AIC1747-33GX3A	1
186	IC CJC5357 SMD 16-PIN TSSOP 96KHZ 24BIT 2-CH ADC "CSC" CJC5357	1
187	IC BX8805 SMD 128PIN TQFP MCU "MCSLOGIC" "BX8805"	1
188	IC PCM1781 SSOP16 24BIT 192KHZ AUDIO STERDO DAC "TI" PCM1781DBQR	1
189	IC SERIAL FLASH KH25L1606E SOP-8 16M BIT "MACRONIX"KH25L1606EM2I-12G	1
190	IC XE6206 -1.2V SMD SOT89-3P LDO VREG 1.2V 300mA "MICRONE"XE6206A12PG	1
191	LED BLUE 0603 "EVERLIGHT" 19-21/BHC-AP1Q2/3T	1
192	IC LRC099-04AT1G SMD 4-CH ESD PROTECTION DIODES ARRAY TSOP-6 "LRC" LRC099-04AT1G	1
193	RES SMD 0603 1/16W 5% 120R	1
194	TRANS NTR4101PT1G SOT-23 P-MOSFET -20V 3.2A "ON SEMI" NTR4101PT1G	1
195	DIODE 1SS352 SMD SOD-323 0.1A/85V "SEMTECH" 1SS352	1
196	PCB 2L2S FR4 R5 HAL FRONT PANEL VMA 1-CH	1
197	CAP SMD CER 47uF 20% 6.3V 0805 X5R "ROHS "	5
198	FERRITE SMD 200 ohms@100MHZ 0603 "FCM1608KF-201T05"500mA	1
199	CAP SMD CER 22PF 5% 50V 0603 NPO	2
200	CAP SMD CER 220pF 10% 50V 0603 X7R	13
201	FERRITE SMD 1k ohms@100MHZ 0603 "FCM1608KF-102T05" 500mA	4
202	PCB MI ASSY 1-CH VMA1600 AMP BOARD	1
203	TRIMMER 1/10W 30% 250 B VERTICAL "TOKYO DENSHI" RM-065	1
204	TRIMMER 1/10W 30% 100K B VERTICAL "TOKYO DENSHI" RM-065	1
205	RES CEMENT 5W SQM +-5% 0.33R "SHIMENG" 1SQ050M00JR330	2
206	RES MO 1W 5% 22R TAPE	1

207	RES MO 5WS 5% 2.2K TAPE	2
208	RES MO 5WS 5% 5.6R	1
209	CAP RAD POLY 0.047UF 10% 250V P=10MM 11.5X8.5X4MM(WXHXT) "MATRONIC" MER	1
210	THERMISTOR 5K 1% NTC "VISHAY" NTCLE203E3502FBO	1
211	DIODE 1N5402 DO-27 3A/200V TAPE "DC" 1N5402	2
212	DIODE 1SS244 DO-34 T&R "ROHM" 1SS244	2
213	DIODE 1N4007 DO-41 1A/1000V T&R "DC" 1N4007	5
214	TRANS 8550C TO-92 PNP 1.5A/25V "SEMTECH" 8550C	1
215	TRANS 8050C TO-92 NPN 1.5A/25V "SEMTECH" 8050C	1
216	TRANS 2SC4793 TO-220NIS NPN 1A/230V "TOSHIBA" 2SC4793	2
217	TRANS 2SA1837 TO-220NIS PNP 1A/230V "TOSHIBA" 2SA1837	2
218	TRANS NJW0281G TO-3P NPN 15A/250V "ON SEMI" NJW0281G	1
219	TRANS NJW0302G TO-3P PNP 15A/250V "ON SEMI" NJW0302G	1
220	INDUCTOR RAD 1.3UH 20% 30T P=10.2MM "EASE HOUSE" EI0310NL	1
221	RELAY 1P1T 12VDC 10A TV-5 UL/TUV/S PCB MOUNT "MASSUSE" ME-7-012-HL	2
222	HEADER 2PIN P=3.96MM ST S01-VH02AV2_YS	1
223	HEADER 4PIN P=3.96MM ST HJ-PT-003	1
224	HEADER 9 PINS 2.5MM ST "LWX"S01-XH09A_YS	1
225	CONN 28PIN FLAT FLEX P=1.0MM DIP TH WITH LOCK "FPC10SST28007""HONGJIAN"	1
226	IC V2181 SIP-8 Ultra-Low Noise Voltage Controlled Amp "COOLAUDIO" V2181	1
227	HEADER LATCHING BOX DUAL ROW 16 WAY 2.54 IDC "LWX" S02-JN2542X8_WW	1
228	CABLE ASSY UL1015 AWG16 2PIN P=3.96MM (BLACK-RED) L=350MM "HONGJIAN" HJ-GH-0072	1
229	CABLE ASSY UL1015 AWG16 1 PIN Red L=110mm "HONGJIAN" HJ-GH-047	1
230	CABLE ASSY UL1015 AWG16 1 PIN BLACK L=210mm "HONGJIAN" HJ-GH-046	1
231	FIBRE HIGH TEMP. TUBE WHITE ID=1.0	0.205
232	INSULATOR 25x20x0.1mm MICA REV.A	2
233	HEATSINK 1 CHANNEL 60V AL5052 ANODE BLACK REV.A	1
234	HEADPHONE JACK FIX BRACKET SECC N NATURAL REV.A	2
235	SCREW M3*6MM PAN POZI BLACK REV.A	4
236	SCREW M3*10MM +P/B M/C ZINC WHITE	8
237	GND CONTACT PLATE	4
238	LABEL 30.5X10.5mm SELF ADHESIVE WHITE PAP	3
239	TAPE THERMAL TRANSFER 0.5X8X18MM REV.A00 (0032610)	2
240	CONN HEADER 2P 2.54MM MALE CRMP TOP ENTRY PCB "SHI YIN"25001SSWT0281PT	1
241	LED RED D=3MM NO-HOLDER MT-204RD "BRIGHTLED" BL-B4541T-AT	1
242	CAP RAD ELEC 470UF 20% 10V T&R 10*12.5MM P=5MM "JAMICONTKP471M1AGBCR	2
243	PCB AI RADIAL ASSY 1-CH VMA1600 AMP BOARD	1
244	CAP RAD ELEC 100UF 20% 25V P=2.5MM 6.3*11MM T&R "JAMICON"SKP101M1EE11ME2 (220-011-00/220-011-02)	4
245	CAP RAD ELEC 10UF 20% 50V P=2.5MM 5*11MM 85*C "KSC" GS	3
246	CAP RAD ELEC 22UF 20% 50V P=2.5MM 5*11MM 85*C "KSC" GS	5
247	CAP RAD ELEC 2.2UF 20% 50V P=2.5MM 5*11MM 85*C "KSC" GS	2
248	CAP RAD ELEC 4.7uF 20% 50V P=2.5mm 5*11mm 105*C T&R "KSC" GL	1
249	PCB SMD ASSY 1-CH VMA1600 AMP BOARD	1
250	RES SMD 0603 1/16W 1% 1.15K	1
251	RES SMD 0603 1/10W 1% 220R	1
252	RES SMD 0603 1/10W 1% 100R "ROHS	1
253	RES SMD 1206 1/4W 1% 100R	1
254	RES SMD 1206 1/4W 1% 100K T&R "HKR" RCT06 100K FLF	2
255	RES SMD 0603 1/16W 5% 150K	1
256	RES SMD 0603 1/10W 1% 18K	2
257	RES SMD 0603 1/10W 5% 1M	1
258	RES SMD 0603 1/16W 5% 220K	3

259	RES SMD 1206 1/4W 1% 220R	1
260	RES SMD 0603 1/10W 1% 2K	4
261	RES SMD 0603 1/16W 1% 3.3K	1
262	RES SMD 0603 1/10W 1% 47K	1
263	RES SMD 0603 1/10W 1% 511R T&R	1
264	RES SMD 1206 1/8W 5% 68R	2
265	CAP SMD CER 20pF 5% 200V 1206 NPO	1
266	RES SMD 0603 1/16W 5% 10K	18
267	RES SMD 0603 1/16W 5% 160K	1
268	RES SMD 0603 1/16W 5% 0R	5
269	RES SMD 0603 1/16W 5% 22K	3
270	RES SMD 0603 1/10W 5% 4.7K	2
271	RES SMD 0603 1/16W 1% 60.4K	2
272	RES SMD 0603 1/16W 1% 470R	1
273	RES SMD 0603 1/10W 1% 1K	3
274	RES SMD 0603 1/16W 5% 24K	1
275	RES SMD 1206 1/4W 5% 4.7R	2
276	RES SMD 1206 1/4W 1% 2.2K	2
277	RES SMD 1206 1/4W 5% 4.7K	4
278	RES SMD 1206 1/4W 5% 390R	1
279	RES SMD 2512 1W 5% 22R	2
280	RES SMD 1206 1/4W 5% 180R	1
281	RES SMD 1206 1/4W 5% 1.5K	2
282	RES SMD 1206 1/4W 1% 15K	2
283	RES SMD 1206 1/4W 1% 10K	3
284	RES SMD 1206 1/4W 5% 56K	1
285	RES SMD 1206 1/4W 1% 1.21K	1
286	RES SMD 1206 1/4W 5% 330R	4
287	RES SMD 0603 1/10W 1% 33K	3
288	RES SMD 0603 1/16W 5% 4.7R	6
289	RES SMD 0603 1/10W 5% 15K	5
290	RES SMD 1206 1/4W 5% 22K	1
291	RES SMD 1206 1/4W 5% 3.3K "FENG HUA"	1
292	RES SMD 0603 1/10W 1% 100K	8
293	RES SMD 0603 1/16W 1% 2.49K	1
294	RES SMD 0603 1/10W 1% 49.9K	4
295	RES SMD 0603 1/10W 1% 51R	1
296	RES SMD 0603 1/10W 5% 20K T&R "HK	2
297	RES SMD 0603 1/10W 1% 3.01K T&R	1
298	CAP SMD CER 0.1UF +80%/-20% 50V 0603 Y5V	16
299	CAP SMD CER 10PF 5% 200V 1206 NPO	1
300	CAP SMD CER 180pF 5% 200V 1206 NPO	3
301	CAP SMD CER 0.22uF 10% 100V 1206 X7R	1
302	CAP SMD CER 0.01UF 10% 50V 0603 X7R	5
303	CAP SMD CER 39pF 5% 50V 0603 NPO	1
304	CAP SMD CER 0.033uF 10% 50V 0603 X7R	1
305	CAP SMD CER 22PF 5% 50V 0603 NPO	1
306	CAP SMD CER 1UF 10% 16V 0603 X5R	1
307	CAP SMD CER 100pF 5% 50V 0603 NPO	4
308	IC 74HC165D SMD SO16 8-BIT PARALLEL-IN/SERIAL-OUT SHIFT REGSTER "PHILIPS" 74HC165D	1
309	IC LM1117S-3.3V-3L SMD SOT-223 LDO VREG 3.3V 1A "HTC" LM1117S-3.3V-3L	1
310	IC AS358MTR-E1 SMD SO-8 DUAL OPAMP "BCD" AS358MTR-E1	2

311	IC NJM4560M SMD SO-8 DUAL OPAMP "JRC" NJM4560M	2
312	IC LM393DR SMD 8-PIN SOIC DUAL DIFFERNTIAL COMPARATORS "TI"LM393DR	1
313	IC TL074 SO-14 LOW NOISE JFET QUAD OPAMP "ST" TL074CDT	1
314	DIODE LL4148 SMD SOD80 "VISHAY" LL4148	27
315	DIODE GS1G M4 SMD DO-214AC 1A/400V "DC" GS1G	5
316	DIODE ZENER SML4744A SMD SMA 5% 15V 1W "EIC" SML4744A	2
317	DIODE ZENER MM1Z5231B SMD SOD123 5% 5.1V 500MW "SEMTECH"MM1Z5231B	2
318	TRANS MMBF5462 SOT23 JFET P-CHANNEL 40V "FAIRCHILD" MMBF5462	1
319	TRANS MOSFET 2N7002 SOT-23 N-CHAN 60V 7R5 "FAIRCHILD" 2N7002	2
320	TRANS MMBT4401 SOT23 NPN "ON SEMI" MMBT4401LT1G (311-001-00)	4
321	TRANS MMBT3904L SOT-23 NPN B.E.C 40VCEO 0.2A "ON SEMI" MMBT3904LT1G	2
322	TRANS 3906 SOT-23 PNP "ONSEMI" MMBT3906LT1G	3
323	TRANS MMBT4403 SOT-23 PNP "ON SEMI" MMBT4403LT1G (311-002-00)	1
324	PCB 2L2S FR4 R5 HAL AMP VMA 1-CH	1
325	CAP SMD CER 1UF 10% 50V 0603 X7R	1
326	RES SMD 0603 1/10W 1% 15K	1
327	JFET PMBFJ174 SOT23 P-CH "PHILIPS" PMBFJ174	2
328	RES SMD 0603 1/10W 1% 3K	2
329	CAP SMD CER 4.7uF 10% 25V 0805 X5R "AVX" 08053D475KAT2A	1
330	PCB MI ASSY 1-CH VMA1240/1120/160 FRONT INPUT BOARD	1
331	HEADER 8PIN P=2.0mm ST "LW" S01-PH08AV0_YS	1
332	PHONE JACK 6.35mm TRS "HaoYu"PJ-625C	1
333	PCB AI RADIAL ASSY 1-CH VMA1240/1120/160 FRONT INPUT BOARD	1
334	CAP RAD EL 22UF 20% 50V P=2.5MM 5X11MM T&R "FENG HUA"8220LFM0511WPN081A	4
335	PCB SMD ASSY 1-CH VMA1240/1120/160 FRONT INPUT BOARD	1
336	CAP SMD CER 100pF 5% 100V 0603 NPO	2
337	CAP SMD CER 470PF 10% 100V 0603 X7R	2
338	CAP SMD CER 0.1UF +80%/-20% 50V 0603 Y5V	3
339	IC CF4558 SMD DUAL OP-AMP SOP8 T&R "SEMICO" CF4558CB	1
340	FERRITE BEAD SMD 0603 600 OHM 2A "TAI-TECH" HCB1608KF-601T20	2
341	RES SMD 0603 1/10W 5% 1M	2
342	RES SMD 0603 1/10W 1% 100K	2
343	RES SMD 0603 1/10W 1% 392R	2
344	RES SMD 0603 1/10W 5% 20K	2
345	FET MMBFJ108 SMD SUPERSOT-3 N-CH 25V IDSS=80MA "FAIRCHILD"MMBFJ108	2
346	PCB MI ASSY 1-CH VMA1240/1120/160 INPUT BOARD	1
347	HEADER 2PIN P=3.96MM ST S01-VH02AV2_YS	1
348	SWICTH DIP 8PIN RIGHT ANGLE "TACLEX" DA-08-V	1
349	TRIMMER 0.033W 20% 10K RIGHT ANGLE PLUS TYPE ADJUST HOLE "IDEAL"WH06510N-B103	1
350	CABLE ASSY UL2651 AWG28 2*8 PINS L=460mm IDC CONNECTING "LWX""WI-GC-K10-10510"	1
351	HEADER 5PIN P=2.0MM ST	1
352	HEADER Euro block 3PIN P=5.0MM RT GREEN "DEGSON" 2EDGRC-5.0-03P-14-100AH	1
353	HEADER Euro block 5PIN P=5.0MM RT GREEN "DEGSON" 2EDGRC-5.0-05P-14-100AH	1
354	PHONE JACK 6.35mm TRS "HaoYu"PJ-625C	1
355	PCB TERMINAL "MOSTLY STRONG" PCB-2 (M3)	3
356	NETWORK SOCKET SINGLE PORT RJ45 CONNECTOR W/ SHIELD RIGHT ANGLE "TACLEX" 8508-B011	1
357	TERMINAL BLOCK 5P PITCH=9.52mm RT WITH FLANGE "WELINK" U112-5-I05-21A0000	1
358	RCA JACK 2 POLE TOP RED/BOTTOM WHITE PCB MOUNT GOLD ZUANBAOAVR41-2N02-DRC0-T0	2
359	HEADER 3 PINS 3.96MM ST "LWX"S01-VH03AV2_YS	1
360	PCB AI RADIAL ASSY 1-CH VMA1240/1120/160 INPUT BOARD	1
361	CAP RAD EL 22UF 20% 50V P=2.5MM 5X11MM T&R "FENG HUA"8220LFM0511WPN081A	11
362	CAP RAD ELEC 100UF 20% 25V P=2.5MM 6.3*11MM 85*C "KSC" GS	2

363	PCB SMD ASSY 1-CH VMA1240/1120/160 INPUT BOARD	1
364	CAP SMD CER 470PF 10% 100V 0603 X7R	11
365	CAP SMD CER 0.1UF +80%/-20% 50V 0603 Y5V	13
366	CAP SMD CER 100PF 5% 50V 0603 NPO	7
367	CAP SMD CER 1UF 10% 50V 0603 X7R	1
368	CAP SMD CER 0.01uF 10% 50V 0603 X7R	1
369	CAP SMD CER 47PF 5% 50V 0603 COG	1
370	CAP SMD CER 0.22uF 10% 50V 0603 X5R	1
371	CAP SMD CER 220pF 10% 50V 0603 X7R	1
372	DIODE 1N4148W SMD SOD-123 FAST SWITCHING "SEMTECH" 1N4148W	1
373	DIODE ZENER MMSZ5240B 10V 500MW SOD-123 SMD "SEMTECH" MM1Z5240B	2
374	FERRITE BEAD SMD 0603 600 OHM 2A "TAI-TECH" HCB1608KF-601T20	11
375	IC LM393DR SMD 8-PIN SOIC DUAL DIFFERNTIAL COMPARATORS "TI"LM393DR	1
376	IC TL074 SO-14 LOW NOISE JFET QUAD OPAMP "ST" TL074CDT	2
377	RES SMD 0603 1/10W 1% 4.99K	4
378	RES SMD 0603 1/10W 1% 3K	1
379	RES SMD 0603 1/10W 1% 1K	3
380	RES SMD 0603 1/10W 1% 100K	8
381	RES SMD 0603 1/10W 1% 68R	1
382	RES SMD 0603 1/10W 1% 392R	6
383	RES SMD 0603 1/10W 1% 49.9K	8
384	RES SMD 0603 1/16W 5% 200K	1
385	RES SMD 0603 1/10W 1% 10R	2
386	RES SMD 0603 1/10W 5% 20K	6
387	RES SMD 0603 1/10W 5% 1M	6
388	RES SMD 0603 1/16W 5% 0R	1
389	RES SMD 0603 1/10W 1% 33.2K T&R	1
390	FET MMBFJ108 SMD SUPERSOT-3 N-CH 25V IDSS=80MA "FAIRCHILD"MMBFJ108	6
391	TRANS MMBT3904L SOT-23 NPN B.E.C 40VCEO 0.2A "ON SEMI" MMBT3904LT1G	1
392	TRANS 3906 SOT-23 PNP "ONSEMI" MMBT3906LT1G	2
393	PCB 2L9S FR4 R5 HAL PWR-SW/INPUT/F-INPUT VMA 1-CH	1
394	RES SMD 0603 1/10W 5% 100R	1
395	RES SMD 0603 1/16W 5% 10K	7
396	PCB MI ASSY 2-CH VMA2120/260 PWR-SW BOARD	1
397	CAP RAD CER Y2 4700PF 20% 250VAC P=7.5MM JY UL/CSA/TUV JY12F472ML7TN	1
398	LED BLUE DIFFUSED ROUND D3X5.2MM "KINGBRIGHT" L-34PBD-A	1
399	CABLE ASSY UL1007 AWG26 2PIN P=2.5 L=150mm "GUANLI" GL-201605171601L	1
400	CABLE ASSY UL1672 AWG16 1PIN BROWN L=750MM "GUANLI" GL-201605171501L	2
401	POWER SWITCH SPST 8A 250V "INBOW" PS5A-04-Y2	1
402	PCB SMD ASSY 2-CH VMA2120/260 PWR-SW BOARD	1
403	RES SMD 0603 1/10W 5% 4.7K	1
404	PCB MI ASSY 1-CH VMA1600 POWER BOARD	1
405	CAP RAD CER Y1/X1 1000PF 20% 250/400VAC P=10MM Y5U VDE/CQC/UL "EASYGATHER" DCF102MY5UG0M350	2
406	CAP RAD X2 0.47UF 10% 275VAC P=22.5MM 26.5*17*8.5MM(WXHXT) "MATRONIC"A10MX2474K275A10	1
407	CAP RAD ELEC 1000UF 20% 25V P=5MM 10*20MM 105*C "KSC" SK	2
408	CAP RAD ELEC 4700UF 20% 16V 13*25MM P=5MM	1
409	CAP RAD ELEC 470UF 20% 35V P=5MM 10*20MM 105C LOW ESR "JAMICON"TLR471M1VG20	1
410	CAP RAD ELEC 47UF 20% 25V P=2.5MM 5*11MM 105*C "KSC" SK	1
411	CONN HEADER 2P 2.54MM MALE CRMP TOP ENTRY PCB "SHI YIN"25001SSWT0281PT	1
412	HEADER 2PIN P=3.96MM ST S01-VH02AV2_YS	1
413	HEADER 4 PINS 3.96P "LWX" PIN2 VOID "S01-VH04ANC2V2-YS"	1
414	HEADER 3 PINS 3.96MM ST "LWX"S01-VH03AV2_YS	1

415	CONN HEADER 3P 2.54MM MALE CRMP TOP ENTRY PCB "SHI YIN"25001SSWT0381PT	2
416	DIODE BRIDGE GBJ2510 25A/1000V "MDD" GBJ2510	1
417	IC NJM7805FA TO-220F REG +5V 1.5A "JRC" NJM7805FA	1
418	IC NJM7815FA TO-220F REG +15V 1.5A "JRC" NJM7815FA	1
419	IC LM317LZ TO92 VOLTAGE REGULATOR 1.2-37V 100MA "NATIONAL"LM317LZ	1
420	IC NJM7915FA TO-220F REG -15V 1.5A "JRC" NJM7915FA	1
421	HEATSINK 16 X 17 X 45MM HOLE 18MM W/ STUD R.1	3
422	FUSE CLIP 5.2X20MM 10A 250V "WALTER" WL-210A	6
423	CAP RAD ELEC 2200UF 20% 50V P=10MM 22*27MM -40~+85C "KSC"EGSR228M1H01N27	2
424	SPADE 0.25" PC MNT 0.250X0.093 "TIANXING" TX7.731.0260A	2
425	CABLE ASSY UL1007 AWG22 9PINS P=2.5mm L=360mm "HONGJIAN" HJ-GH-0075	1
426	CABLE ASSY UL1015 105℃ AWG16 4 PINS P=3.96mm L=480mm "HONGJIAN"HJ-GH-0062	1
427	DIODE 1N4007 DO-41 1A/1000V T&R "DC" 1N4007	19
428	DIODE ZENER BZX79C27 DO-35 27V 1/2W T&R "SEMTECH" BZX79C27	1
429	DIODE ZENER 1N748A DO-35 3.9V 1/2W T&R "SEMTECH" 1N748A	1
430	RES FUSIBLE 1/2W 5% 0.22R TAPE "SHIMENG" 1FR002T52JR220	8
431	RES CF 1/4W 5% 680K TAPE	2
432	RES M.F 1/4W 1% 10K "SHIMENG"	1
433	RES MF 1/4W 1% 10R TAPE	2
434	RES MF 1/4W 1% 200K TAPE	1
435	RES MF 1/4W 1% 20K TAPE	1
436	RES MF 1/4W 1% 270R TAPE	1
437	RES MF REDUCED SIZE 1/4W 1% 470R D=1.7MM L=3.5MM "SHIMENG"	1
438	RES MO 1W 5% 470R FLAME-PROOF	1
439	RES CF 1/4W 5% 47K TAPE	5
440	TRANS 2N2907A TO-92 E.B.C PNP T&R "SEMTECH" 2N2907A	1
441	TRANS 2N5551 TO-92 NPN 600mA/160V T&R "Fairchild" 2N5551TF	2
442	CAP RAD EL 1000UF 20% 35VDC P=5MM 12.5*20MM T&R "FENG HUA"	2
443	CAP RAD ELEC 100UF 20% 35V P= 5MM 8*11.5MM 105*C T&B "Nover"RXSeries: 061041	1
444	CAP RAD E 47UF 20% 35V P=2.5MM 6*11MM T&R "JAMICON" SKP470M1VE11	1
445	CAP RAD ELEC 100uF 20% 16V P=2.5mm 5*11mm Tape "KSC"EGSU107M1C01D11	3
446	JUMPER WIRE D=0.6MM ROLL (WEIGHT IN G)	6
447	PCB 1L2S CEM-1 R5 POWER SUPPLY VMA 1-CH/2-CH	1
448	SCREW M3 X 8MM TAPTITE + BH / TYPE B NI	3
449	CAP RAD CER 0.1uF 20% 100V P=5mm Y5V TAPE	8
450	RES MF 1/4W 1% 100R TAPE	1
451	CAP RAD ELEC 100UF 20% 63V 105℃ 10*18MM P=5MM T&R "JAMICON" WGR101M1JG18M	2
452	DIODE ZENER 1N4738A DO-41 5% 8.2V 1W T&R "SEMTECH" 1N4738A	1
453	GND CONTACT PLATE	4
454	CAP RAD ELEC 1000UF 20% 16V 10*16MM P=5MM "FENG HUA" 8102LCM1016WPN0	1
455	CAP RAD E 100UF 20% 100V P=5MM 10*20MM "JAMICON" SKR101M2AG20	1
456	205 SOLDER TAB 5.2MM X 0.508MM	2
457	CABLE ASSY UL1015 AWG16 1PIN BLACK L=100mm "HONGJIAN" HJ-GH-0078	2
458	CABLE ASSY UL1015 AWG16 1PIN BLACK L=130mm "HONGJIAN" HJ-GH-0077	1
459	CABLE ASSY UL1015 AWG16 1PIN BLACK L=150mm "HONGJIAN" HJ-GH-0079	1