

DCR-SX33E/SX34E/SX43/SX43E/SX44/ SX44E/SX53E/SX63/SX63E

SERVICE MANUAL

Ver. 1.2 2010.03

Revised-2

Replace the previously issued
SERVICE MANUAL 9-852-734-12
with this Manual.



Photo: DCR-SX43/Silver

LEVEL 3

*US Model
Canadian Model
AEP Model
UK Model
North European Model
E Model
Australian Model
Chinese Model
Korea Model
Argentine Model
Brazilian Model*

Check the SERVICE NOTE (LEVEL 2) before the service.

DIGITAL VIDEO CAMERA RECORDER

SONY®

The components identified
by mark Δ or dotted line with
mark Δ are critical for safety.
Replace only with part number
specified.

Les composants identifiés par
une marque Δ sont critiques
pour la sécurité.
Ne les remplacer que par une
pièce portant le numéro spécifié.

Revision History

| Ver. | Date | History | Contents | S.M. Rev. issued |
|------|---------|--------------------------|---|------------------|
| 1.0 | 2010.01 | Official Release | — | — |
| 1.1 | 2010.02 | Revised-1 (A1 09-458) | <ul style="list-style-type: none"> • Correction of ELECTRICAL PARTS LIST MS-428 board is added from LEVEL 2. Page 2-2 • Correction of others Page 2-1, 2-3 • Correction of SCHEMATIC DIAGRAMS MS-428 board is added from LEVEL 2. Changes in accordance with the moving of MS-428 board. Page 6-7, 6-10 • Correction of others Page 6-3, 6-5, 6-8, 6-9, 6-14, 6-18 • Correction of PRINTED WIRING BOARDS MS-428 board is added from LEVEL 2. Page 6-21 • Correction of others Page 6-19, 6-20 | Yes |
| 1.2 | 2010.03 | Revised-2 (A2 09-516) | <ul style="list-style-type: none"> • Correction of SCHEMATIC DIAGRAMS Page 6-3, 6-8 | Yes |

Caution

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.
Dispose of used batteries according to the instructions.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK \triangle OR DOTTED LINE WITH MARK \triangle ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

**ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE \triangle SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
 - Keep the temperature of the soldering iron around 270°C during repairing.
 - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
 - Be careful not to apply force on the conductor when soldering or unsoldering.

Unleaded solder

Boards requiring use of unleaded solder are printed with the leadfree mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



LF : LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
Soldering irons using a temperature regulator should be set to about 350°C.
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

2. REPAIR PARTS LIST

NOTE:

- XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "***" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- CAPACITORS:**
 uF: μ F
 uH: μ H
- COILS**
 uH: μ H
- RESISTORS**
 All resistors are in ohms.
 METAL: metal-film resistor
 METAL OXIDE: Metal Oxide-film resistor
 F: nonflammable
- SEMICONDUCTORS**
 In each case, u: μ , for example:
 uA...: μ A..., uPA..., μ PA...,
 uPB..., μ PB..., uPC..., μ PC...,
 uPD..., μ PD...

When indicating parts by reference number, please include the board name.

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
 Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
 Ne les remplacer que par une pièce portant le numéro spécifié.

Caution

Danger of explosion if battery is incorrectly replaced.
 Replace only with the same or equivalent type.
 Dispose of used batteries according to the instructions.

Note: Replace the battery holder (BH7301) together when replacing the lithium storage battery (BT7301) on the MS-428 board. (The battery holder removed once cannot be used again.)
 When mounting these parts, mount new battery holder first and attach new lithium battery next.

2-2. ELECTRICAL PARTS LIST

| Ref. No. | Part No. | Description | Ref. No. | Part No. | Description | | | | |
|----------|--------------|--|----------|--------------|--------------------------------|------|-----|------|--|
| | A-1751-652-A | DA-049 BOARD, COMPLETE (SERVICE) (SX43/SX43E/SX44/SX44E/SX63/SX63E) | C4727 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V | |
| | A-1760-126-A | DA-049 BOARD, COMPLETE (SERVICE) (SX33E/SX34E/SX53E) ***** | C4728 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V | |
| | | < CAPACITOR > | C4729 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V | |
| | | | C4730 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V | |
| | | | C4732 | 1-165-875-11 | CERAMIC CHIP | 10uF | 10% | 10V | |
| | | | * C4733 | 1-112-298-91 | CERAMIC CHIP | 1uF | 10% | 16V | |
| | | | * C4734 | 1-112-298-91 | CERAMIC CHIP | 1uF | 10% | 16V | |
| | | | C4735 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V | |
| C2901 | 1-127-988-81 | CERAMIC CHIP | 0.015uF | 10% | 16V | | | | |
| C2902 | 1-127-988-81 | CERAMIC CHIP | 0.015uF | 10% | 16V | | | | |
| C2903 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | | | | |
| C2904 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| C2905 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | | | | |
| C2906 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V | | | | |
| C2907 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V | | | | |
| * C2909 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| * C2910 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| C2911 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V | | | | |
| * C2915 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| C2916 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V | | | | |
| C2919 | 1-100-567-81 | CERAMIC CHIP | 0.01uF | 10% | 25V | | | | |
| * C2920 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| C2921 | 1-112-717-91 | CERAMIC CHIP | 1uF | 10% | 6.3V | | | | |
| C2922 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V | | | | |
| C2923 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V | | | | |
| * C2924 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| * C2926 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| * C2927 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| C2928 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V | | | | |
| C2929 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V | | | | |
| * C2930 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| * C2932 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| C4002 | 1-164-935-11 | CERAMIC CHIP | 470PF | 10% | 50V | | | | |
| C4004 | 1-164-935-11 | CERAMIC CHIP | 470PF | 10% | 50V | | | | |
| C4608 | 1-165-875-11 | CERAMIC CHIP | 10uF | 10% | 10V | | | | |
| C4609 | 1-165-875-11 | CERAMIC CHIP | 10uF | 10% | 10V | | | | |
| C4610 | 1-165-875-11 | CERAMIC CHIP | 10uF | 10% | 10V | | | | |
| * C4611 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| * C4612 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| C4613 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | | | | |
| C4614 | 1-164-937-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | | | | |
| C4702 | 1-127-715-11 | CERAMIC CHIP | 0.22uF | 10% | 16V | | | | |
| * C4704 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| * C4705 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| C4706 | 1-165-989-11 | CERAMIC CHIP | 10uF | 10% | 6.3V | | | | |
| * C4707 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| C4708 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| C4710 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| * C4711 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| * C4712 | 1-114-582-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | | | | |
| * C4713 | 1-112-298-91 | CERAMIC CHIP | 1uF | 10% | 16V | | | | |
| C4715 | 1-112-746-11 | CERAMIC CHIP | 4.7uF | 10% | 6.3V | | | | |
| C4716 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V | | | | |
| C4719 | 1-100-581-81 | CERAMIC CHIP | 0.0047uF | 10% | 50V | | | | |
| C4720 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| C4721 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| C4722 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| C4723 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| C4724 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| C4726 | 1-165-908-11 | CERAMIC CHIP | 1uF | 10% | 10V | | | | |
| | | | | | < CONNECTOR > | | | | |
| | | | CN4002 | 1-779-327-51 | CONNECTOR, FFC/FPC 6P | | | | |
| | | | CN4003 | 1-818-803-21 | CONNECTOR, BOARD TO BOARD 100P | | | | |
| | | | CN4004 | 1-779-327-51 | CONNECTOR, FFC/FPC 6P | | | | |
| | | | CN4007 | 1-580-056-21 | PIN, CONNECTOR (SMD) 3P | | | | |
| | | | CN4009 | 1-815-794-13 | CONNECTOR (MULTIPLE) | | | | |
| | | | CN4010 | 1-778-506-21 | PIN, CONNECTOR (PC BOARD) 2P | | | | |
| | | | | | < DIODE > | | | | |
| | | | D4002 | 8-719-056-36 | DIODE 015AZ12-TPL3 | | | | |
| | | | * D4603 | 6-502-629-01 | DIODE 1SS420 (TL3SONY.F) | | | | |
| | | | * D4703 | 6-502-629-01 | DIODE 1SS420 (TL3SONY.F) | | | | |
| | | | * D4704 | 6-502-629-01 | DIODE 1SS420 (TL3SONY.F) | | | | |
| | | | * D4705 | 6-502-629-01 | DIODE 1SS420 (TL3SONY.F) | | | | |
| | | | * D4706 | 6-502-629-01 | DIODE 1SS420 (TL3SONY.F) | | | | |

| Ref. No. | Part No. | Description |
|----------|--------------|-------------------------------|
| | | < FUSE > |
| △ F001 | 1-523-133-31 | FUSE (1.4A/50V) |
| △ F002 | 1-523-133-31 | FUSE (1.4A/50V) |
| △ F003 | 1-523-133-31 | FUSE (1.4A/50V) |
| △ F004 | 1-523-128-31 | FUSE (0.25A/50V) |
| △ F005 | 1-523-128-31 | FUSE (0.25A/50V) |
| | | < FERRITE BEAD > |
| FB4002 | 1-400-833-21 | SMD EMI FERRITE |
| FB4005 | 1-400-927-31 | BEAD, FERRITE (1005) |
| FB4006 | 1-400-927-31 | BEAD, FERRITE (1005) |
| FB4601 | 1-400-915-21 | INDUCTOR (EMI FERRITE) (2012) |
| | | < IC > |
| * IC2901 | 6-710-463-01 | IC NN12922A-BB |
| IC4701 | 6-808-414-01 | IC MB44C017ABGF-G-ERE1 |
| * IC4702 | 6-712-910-01 | IC NJM2878F4-46 (TE2) |
| * IC4901 | 6-714-858-01 | IC MB95005ABGL-G-125-ERE1 |
| | | < COIL > |
| * L2902 | 1-481-425-21 | INDUCTOR 10uH |
| * L2903 | 1-481-425-21 | INDUCTOR 10uH |
| * L2905 | 1-481-425-21 | INDUCTOR 10uH |
| L4701 | 1-457-696-11 | INDUCTOR 4.7uH |
| L4702 | 1-457-696-11 | INDUCTOR 4.7uH |
| L4703 | 1-457-696-11 | INDUCTOR 4.7uH |
| L4704 | 1-457-696-11 | INDUCTOR 4.7uH |
| * L4706 | 1-457-858-11 | INDUCTOR 4.7uH |
| * L4708 | 1-457-647-11 | INDUCTOR 100uH |
| L4712 | 1-469-549-21 | INDUCTOR 1uH |
| L4714 | 1-469-549-21 | INDUCTOR 1uH |
| L4715 | 1-469-549-21 | INDUCTOR 1uH |
| | | < TRANSISTOR > |
| Q2901 | 8-729-056-75 | TRANSISTOR MCH3211-TL-E |
| * Q4001 | 6-552-399-01 | TRANSISTOR DSA300100L |
| * Q4002 | 6-552-354-01 | TRANSISTOR DRC3144E0L |
| * Q4003 | 6-552-397-01 | TRANSISTOR DSC300100L |
| Q4601 | 8-729-043-60 | TRANSISTOR CPH6102-TL-E |
| * Q4602 | 6-552-354-01 | TRANSISTOR DRC3144E0L |
| * Q4603 | 6-552-123-01 | TRANSISTOR ECH8652-S-TL-H |
| Q4702 | 6-550-533-01 | TRANSISTOR MCH5819-TL-E |
| * Q4704 | 6-552-397-01 | TRANSISTOR DSC300100L |
| Q4705 | 8-729-055-88 | TRANSISTOR MCH3406-TL-E |
| * Q4706 | 6-552-397-01 | TRANSISTOR DSC300100L |
| * Q4707 | 6-552-323-01 | TRANSISTOR DMA904010L |
| Q4708 | 6-550-791-01 | TRANSISTOR SSM3J15FV (TL3S) |
| * Q4709 | 6-552-354-01 | TRANSISTOR DRC3144E0L |
| * Q4901 | 6-552-334-01 | TRANSISTOR DMG964030L |
| | | < RESISTOR > |
| R2901 | 1-218-971-11 | METAL CHIP 33K 5% 1/16W |
| R2902 | 1-218-961-11 | METAL CHIP 4.7K 5% 1/16W |
| R2903 | 1-218-961-11 | METAL CHIP 4.7K 5% 1/16W |
| R2904 | 1-218-973-11 | METAL CHIP 47K 5% 1/16W |
| R2909 | 1-218-971-11 | METAL CHIP 33K 5% 1/16W |
| R2910 | 1-218-971-11 | METAL CHIP 33K 5% 1/16W |
| R2911 | 1-218-985-11 | METAL CHIP 470K 5% 1/16W |
| R2912 | 1-218-985-11 | METAL CHIP 470K 5% 1/16W |

| Ref. No. | Part No. | Description |
|----------|--------------|-------------------------------|
| R2913 | 1-218-941-81 | METAL CHIP 100 5% 1/16W |
| R2914 | 1-218-941-81 | METAL CHIP 100 5% 1/16W |
| R2915 | 1-216-295-91 | SHORT CHIP 0 |
| R4001 | 1-218-977-11 | METAL CHIP 100K 5% 1/16W |
| R4004 | 1-218-933-11 | METAL CHIP 22 5% 1/16W |
| R4005 | 1-218-947-11 | METAL CHIP 330 5% 1/16W |
| R4006 | 1-218-953-11 | METAL CHIP 1K 5% 1/16W |
| R4008 | 1-218-989-11 | METAL CHIP 1M 5% 1/16W |
| R4010 | 1-218-945-11 | METAL CHIP 220 5% 1/16W |
| R4013 | 1-218-953-11 | METAL CHIP 1K 5% 1/16W |
| R4603 | 1-216-797-11 | METAL CHIP 10 5% 1/10W |
| R4604 | 1-218-953-11 | METAL CHIP 1K 5% 1/16W |
| R4605 | 1-218-961-11 | METAL CHIP 4.7K 5% 1/16W |
| R4708 | 1-208-927-11 | METAL CHIP 47K 0.5% 1/16W |
| R4715 | 1-218-965-11 | METAL CHIP 10K 5% 1/16W |
| R4739 | 1-220-874-81 | METAL CHIP 15 0.5% 1/16W |
| R4747 | 1-218-977-11 | METAL CHIP 100K 5% 1/16W |
| R4748 | 1-218-969-11 | METAL CHIP 22K 5% 1/16W |
| R4749 | 1-208-927-11 | METAL CHIP 47K 0.5% 1/16W |
| R4750 | 1-208-935-11 | METAL CHIP 100K 0.5% 1/16W |
| R4751 | 1-208-711-11 | METAL CHIP 15K 0.5% 1/16W |
| R4755 | 1-218-969-11 | METAL CHIP 22K 5% 1/16W |
| R4756 | 1-218-977-11 | METAL CHIP 100K 5% 1/16W |
| R4757 | 1-218-941-81 | METAL CHIP 100 5% 1/16W |
| R4911 | 1-245-604-11 | METAL CHIP 10M 5% 1/16W |
| R4913 | 1-208-893-11 | METAL CHIP 1.8K 0.5% 1/16W |
| R4915 | 1-208-703-11 | METAL CHIP 6.8K 0.5% 1/16W |
| R4917 | 1-218-953-11 | METAL CHIP 1K 5% 1/16W |
| R4929 | 1-218-985-11 | METAL CHIP 470K 5% 1/16W |
| R4930 | 1-218-989-11 | METAL CHIP 1M 5% 1/16W |
| R4933 | 1-208-927-11 | METAL CHIP 47K 0.5% 1/16W |
| R4934 | 1-208-935-11 | METAL CHIP 100K 0.5% 1/16W |
| R4935 | 1-218-949-11 | METAL CHIP 470 5% 1/16W |
| R4954 | 1-218-967-11 | METAL CHIP 15K 5% 1/16W |
| R4957 | 1-218-965-11 | METAL CHIP 10K 5% 1/16W |
| R4958 | 1-218-965-11 | METAL CHIP 10K 5% 1/16W |
| | | < COMPOSITION CIRCUIT BLOCK > |
| RB2902 | 1-234-376-11 | RES, NETWORK 2.2K (1005X4) |
| RB2905 | 1-234-723-21 | RES, NETWORK 75 (1005X4) |
| RB4701 | 1-234-377-21 | RES, NETWORK 4.7K (1005X4) |
| RB4702 | 1-242-962-21 | RES, NETWORK 82 (1005X4) |
| RB4901 | 1-234-378-21 | RES, NETWORK 10K (1005X4) |
| RB4902 | 1-234-375-21 | RES, NETWORK 1K (1005X4) |
| RB4905 | 1-234-380-21 | RES, NETWORK 47K (1005X4) |
| | | < VARISTOR > |
| VD4005 | 1-802-078-11 | VARISTOR (SMD) |
| VD4010 | 1-802-078-11 | VARISTOR (SMD) |
| VD4012 | 1-802-078-11 | VARISTOR (SMD) |
| VD4016 | 1-802-078-11 | VARISTOR (SMD) |
| | | < VIBRATOR > |
| X4901 | 1-781-525-11 | VIBRATOR, CRYSTAL (32.768kHz) |

| Ref. No. | Part No. | Description |
|----------|--------------|--|
| | A-1751-592-A | MS-428 BOARD, COMPLETE (SX33E/SX43/SX43E) |
| | A-1751-593-A | MS-428 BOARD, COMPLETE (SX53E/SX63/SX63E) |
| | A-1751-594-A | MS-428 BOARD, COMPLETE (SX34E/SX44/SX44E) ***** |
| | | (BT7301 is not included in MS-428 complete board.) |
| | | < BATTERY HOLDER > |
| △ BH7301 | 1-756-615-61 | HOLDER, BATTERY (Note) |
| | | < BATTERY > |
| △ BT7301 | 1-756-134-12 | BATTERY, STORAGE, LITHIUM (Note) |
| | | < CAPACITOR > |
| * C7304 | 1-112-298-91 | CERAMIC CHIP 1uF 10% 16V (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| * C7305 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| * C7306 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| * C7307 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| | | < CONNECTOR > |
| CN7301 | 1-821-500-11 | CONNECTOR, FPC (ZIF) 45P |
| CN7302 | 1-822-837-21 | CARD CONNECTOR |
| | | < DIODE > |
| D7301 | 6-501-216-01 | DIODE CL-271HR-C-TS |
| | | < CONTACT TERMINAL > |
| ET001 | 1-780-729-12 | CONTACT TERMINAL (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| | | < FERRITE BEAD > |
| FB7301 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB7302 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB7303 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB7304 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB7305 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB7306 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB7307 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| FB7308 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| * FB7309 | 1-481-300-11 | INDUCTOR, FERRITE BEAD (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| FB7310 | 1-469-580-21 | INDUCTOR, FERRITE BEAD (1005) |
| | | < IC > |
| * IC7301 | 6-714-699-01 | IC THGVS4G7D8EBAI0 (16GB) (SX53E/SX63/SX63E) |
| * IC7301 | 6-714-700-01 | IC THGVS4G5D2EBAI4 (4GB) (SX34E/SX44/SX44E) |
| | | < RESISTOR > |
| R7301 | 1-218-941-81 | METAL CHIP 100 5% 1/16W |
| R7302 | 1-218-941-81 | METAL CHIP 100 5% 1/16W |

| Ref. No. | Part No. | Description |
|----------|--------------|--|
| R7303 | 1-220-169-11 | METAL CHIP 75 5% 1/16W |
| R7304 | 1-220-169-11 | METAL CHIP 75 5% 1/16W |
| R7305 | 1-220-169-11 | METAL CHIP 75 5% 1/16W |
| R7306 | 1-218-941-81 | METAL CHIP 100 5% 1/16W |
| R7307 | 1-218-990-81 | SHORT CHIP 0 |
| R7309 | 1-218-941-81 | METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7310 | 1-218-941-81 | METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7311 | 1-218-941-81 | METAL CHIP 100 5% 1/16W |
| R7312 | 1-218-990-81 | SHORT CHIP 0 |
| R7313 | 1-218-941-81 | METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7314 | 1-218-941-81 | METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7315 | 1-218-941-81 | METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7316 | 1-220-169-11 | METAL CHIP 75 5% 1/16W |
| R7318 | 1-218-990-81 | SHORT CHIP 0 (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7320 | 1-218-941-81 | METAL CHIP 100 5% 1/16W |
| | A-1751-646-A | VC-587 BOARD, COMPLETE (SERVICE) (SX33E/SX43/SX43E) |
| | A-1751-647-A | VC-587 BOARD, COMPLETE (SERVICE) (SX34E/SX44/SX44E/SX53E/SX63/SX63E) ***** |
| | | (IC7801 is not supplied, but it is included in VC-587 complete board (service).) |
| | | < CAPACITOR > |
| * C1002 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C1006 | 1-112-717-91 | CERAMIC CHIP 1uF 10% 6.3V |
| C1010 | 1-112-717-91 | CERAMIC CHIP 1uF 10% 6.3V |
| C1102 | 1-112-717-91 | CERAMIC CHIP 1uF 10% 6.3V |
| C1103 | 1-165-908-11 | CERAMIC CHIP 1uF 10% 10V |
| C1106 | 1-112-746-11 | CERAMIC CHIP 4.7uF 10% 6.3V |
| C1201 | 1-164-866-11 | CERAMIC CHIP 47PF 5% 50V |
| C1202 | 1-164-866-11 | CERAMIC CHIP 47PF 5% 50V |
| * C1203 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C1204 | 1-164-937-11 | CERAMIC CHIP 0.001uF 10% 50V |
| * C1205 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| * C1206 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| * C1207 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| * C1208 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| * C1209 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| * C1211 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C1212 | 1-112-300-91 | CERAMIC CHIP 4.7uF 10% 10V |
| C1213 | 1-164-937-11 | CERAMIC CHIP 0.001uF 10% 50V |
| * C1214 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C1216 | 1-119-750-11 | TANTAL. CHIP 22uF 20% 6.3V |
| C1220 | 1-112-746-11 | CERAMIC CHIP 4.7uF 10% 6.3V |
| * C1221 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| * C1222 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| * C1224 | 1-114-582-11 | CERAMIC CHIP 0.1uF 10% 16V |
| C1225 | 1-127-820-11 | CERAMIC CHIP 4.7uF 10% 16V |
| C1227 | 1-165-908-11 | CERAMIC CHIP 1uF 10% 10V |
| C1228 | 1-119-750-11 | TANTAL. CHIP 22uF 20% 6.3V |
| C1231 | 1-112-746-11 | CERAMIC CHIP 4.7uF 10% 6.3V |

| Ref. No. | Part No. | Description | | | | |
|----------|--------------|-------------|------|------|-------|---|
| R7507 | 1-208-911-11 | METAL CHIP | 10K | 0.5% | 1/16W | (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7510 | 1-218-935-11 | METAL CHIP | 33 | 5% | 1/16W | |
| R7513 | 1-208-683-11 | METAL CHIP | 1K | 0.5% | 1/16W | R8912 1-218-965-11 METAL CHIP 10K 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7514 | 1-208-683-11 | METAL CHIP | 1K | 0.5% | 1/16W | R8913 1-218-990-81 SHORT CHIP 0 (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7523 | 1-218-961-11 | METAL CHIP | 4.7K | 5% | 1/16W | R8914 1-208-909-11 METAL CHIP 8.2K 0.5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7524 | 1-218-961-11 | METAL CHIP | 4.7K | 5% | 1/16W | R8915 1-218-990-81 SHORT CHIP 0 (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7527 | 1-218-948-11 | METAL CHIP | 390 | 5% | 1/16W | R8916 1-218-985-11 METAL CHIP 470K 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7528 | 1-218-948-11 | METAL CHIP | 390 | 5% | 1/16W | |
| R7543 | 1-218-933-11 | METAL CHIP | 22 | 5% | 1/16W | R8917 1-218-985-11 METAL CHIP 470K 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7544 | 1-218-933-11 | METAL CHIP | 22 | 5% | 1/16W | R8921 1-218-941-81 METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7545 | 1-218-933-11 | METAL CHIP | 22 | 5% | 1/16W | R8922 1-218-941-81 METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7546 | 1-218-953-11 | METAL CHIP | 1K | 5% | 1/16W | R8924 1-218-941-81 METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7555 | 1-218-953-11 | METAL CHIP | 1K | 5% | 1/16W | R8925 1-218-941-81 METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7557 | 1-218-977-11 | METAL CHIP | 100K | 5% | 1/16W | R8926 1-218-941-81 METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7562 | 1-218-941-81 | METAL CHIP | 100 | 5% | 1/16W | R8927 1-218-950-11 METAL CHIP 560 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7563 | 1-218-941-81 | METAL CHIP | 100 | 5% | 1/16W | R8928 1-218-941-81 METAL CHIP 100 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7564 | 1-218-941-81 | METAL CHIP | 100 | 5% | 1/16W | R8929 1-218-965-11 METAL CHIP 10K 5% 1/16W (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7565 | 1-218-941-81 | METAL CHIP | 100 | 5% | 1/16W | |
| R7566 | 1-218-990-81 | SHORT CHIP | 0 | | | < COMPOSITION CIRCUIT BLOCK > |
| R7580 | 1-218-941-81 | METAL CHIP | 100 | 5% | 1/16W | RB1001 1-234-378-21 RES, NETWORK 10K (1005X4) |
| R7581 | 1-218-938-11 | METAL CHIP | 56 | 5% | 1/16W | RB1002 1-234-400-21 CONDUCTOR, NETWORK (1005X4) |
| R7582 | 1-218-977-11 | METAL CHIP | 100K | 5% | 1/16W | RB1005 1-234-400-21 CONDUCTOR, NETWORK (1005X4) |
| R7583 | 1-218-977-11 | METAL CHIP | 100K | 5% | 1/16W | RB5401 1-234-380-21 RES, NETWORK 47K (1005X4) |
| R7587 | 1-218-939-11 | METAL CHIP | 68 | 5% | 1/16W | RB5402 1-234-383-21 RES, NETWORK 470K (1005X4) |
| R7614 | 1-220-169-11 | METAL CHIP | 75 | 5% | 1/16W | RB5403 1-234-375-21 RES, NETWORK 1K (1005X4) |
| R7617 | 1-218-953-11 | METAL CHIP | 1K | 5% | 1/16W | RB5404 1-234-379-21 RES, NETWORK 22K (1005X4) |
| R7618 | 1-218-941-81 | METAL CHIP | 100 | 5% | 1/16W | RB7502 1-234-375-21 RES, NETWORK 1K (1005X4) |
| R7620 | 1-218-973-11 | METAL CHIP | 47K | 5% | 1/16W | RB7504 1-234-375-21 RES, NETWORK 1K (1005X4) |
| R7625 | 1-220-169-11 | METAL CHIP | 75 | 5% | 1/16W | RB7507 1-234-378-21 RES, NETWORK 10K (1005X4) |
| R7626 | 1-220-169-11 | METAL CHIP | 75 | 5% | 1/16W | * RB7508 1-234-384-11 RES, NETWORK 1M (1005X4) |
| R7627 | 1-220-169-11 | METAL CHIP | 75 | 5% | 1/16W | RB7512 1-234-381-11 RES, NETWORK 100K (1005X4) |
| R7628 | 1-220-169-11 | METAL CHIP | 75 | 5% | 1/16W | RB7513 1-234-702-11 RES, NETWORK 68 (1005X4) |
| R7635 | 1-218-929-11 | METAL CHIP | 10 | 5% | 1/16W | RB7514 1-234-702-11 RES, NETWORK 68 (1005X4) |
| R7636 | 1-218-937-11 | METAL CHIP | 47 | 5% | 1/16W | RB7515 1-234-381-11 RES, NETWORK 100K (1005X4) |
| R7637 | 1-218-929-11 | METAL CHIP | 10 | 5% | 1/16W | RB7801 1-234-380-21 RES, NETWORK 47K (1005X4) |
| R7638 | 1-218-939-11 | METAL CHIP | 68 | 5% | 1/16W | RB8902 1-234-378-21 RES, NETWORK 10K (1005X4) (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7640 | 1-218-953-11 | METAL CHIP | 1K | 5% | 1/16W | < VIBRATOR > |
| R7641 | 1-218-990-81 | SHORT CHIP | 0 | | | X1201 1-814-072-21 QUARTZ CRYSTAL OSCILLATOR (24MHz) |
| R7642 | 1-218-990-81 | SHORT CHIP | 0 | | | * X7501 1-813-403-81 QUARTZ CRYSTAL OSCILLATOR (12MHz) |
| R7643 | 1-218-962-11 | METAL CHIP | 5.6K | 5% | 1/16W | * X8901 1-813-328-11 VIBRATOR, CRYSTAL (48MHz) (SX34E/SX44/SX44E/SX53E/SX63/SX63E) |
| R7644 | 1-218-961-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R7646 | 1-218-953-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R7649 | 1-218-965-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R7650 | 1-218-965-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R7861 | 1-218-933-11 | METAL CHIP | 22 | 5% | 1/16W | |
| R7867 | 1-218-953-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R7904 | 1-218-977-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R8903 | 1-218-965-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R8904 | 1-218-990-81 | SHORT CHIP | 0 | | | |
| R8906 | 1-218-990-81 | SHORT CHIP | 0 | | | |
| R8907 | 1-218-965-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R8908 | 1-218-990-81 | SHORT CHIP | 0 | | | |
| R8909 | 1-218-965-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R8910 | 1-218-965-11 | METAL CHIP | 10K | 5% | 1/16W | |

6. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

THIS NOTE IS COMMON FOR SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS
(In addition to this, the necessary note is printed in each block)

For Schematic Diagrams

- All capacitors are in μF unless otherwise noted. pF : $\mu\mu\text{F}$. 50 V or less are not indicated except for electrolytics and tantalums.
- Chip resistors are 1/10 W unless otherwise noted. $\text{k}\Omega=1000 \Omega$, $\text{M}\Omega=1000 \text{k}\Omega$.
- Caution when replacing chip parts.
New parts must be attached after removal of chip.
Be careful not to heat the minus side of tantalum capacitor, Because it is damaged by the heat.
- Some chip part will be indicated as follows.



- Constants of resistors, capacitors, ICs and etc with XX indicate that they are not used.
In such cases, the unused circuits may be indicated.
- Parts with ★ differ according to the model/destination.
Refer to the mount table for each function.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Signal name
XEDIT → EDIT PB/XREC → PB/REC
- : non flammable resistor
- : fusible resistor
- : panel designation
- : B+ Line
- : B- Line
- : IN/OUT direction of (+, -) B LINE.
- : adjustment for repair.

Precautions for Replacement of Imager

- If the imager has been replaced, carry out all the adjustments for the camera section.
- As the imager may be damaged by static electricity from its structure, handle it carefully like for the MOS IC.
In addition, ensure that the receiver is not covered with dusts nor exposed to strong light.

When indicating parts by reference number, please include the board name.

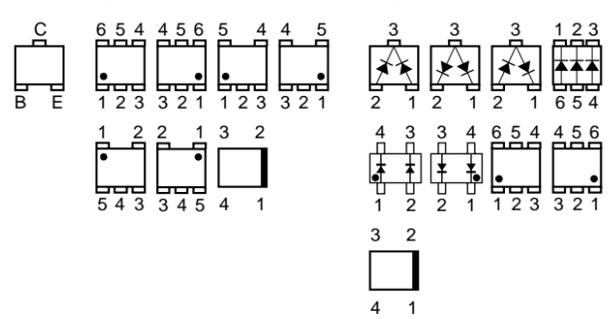
The components identified by mark \triangle or dotted line with mark \triangle are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque \triangle sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

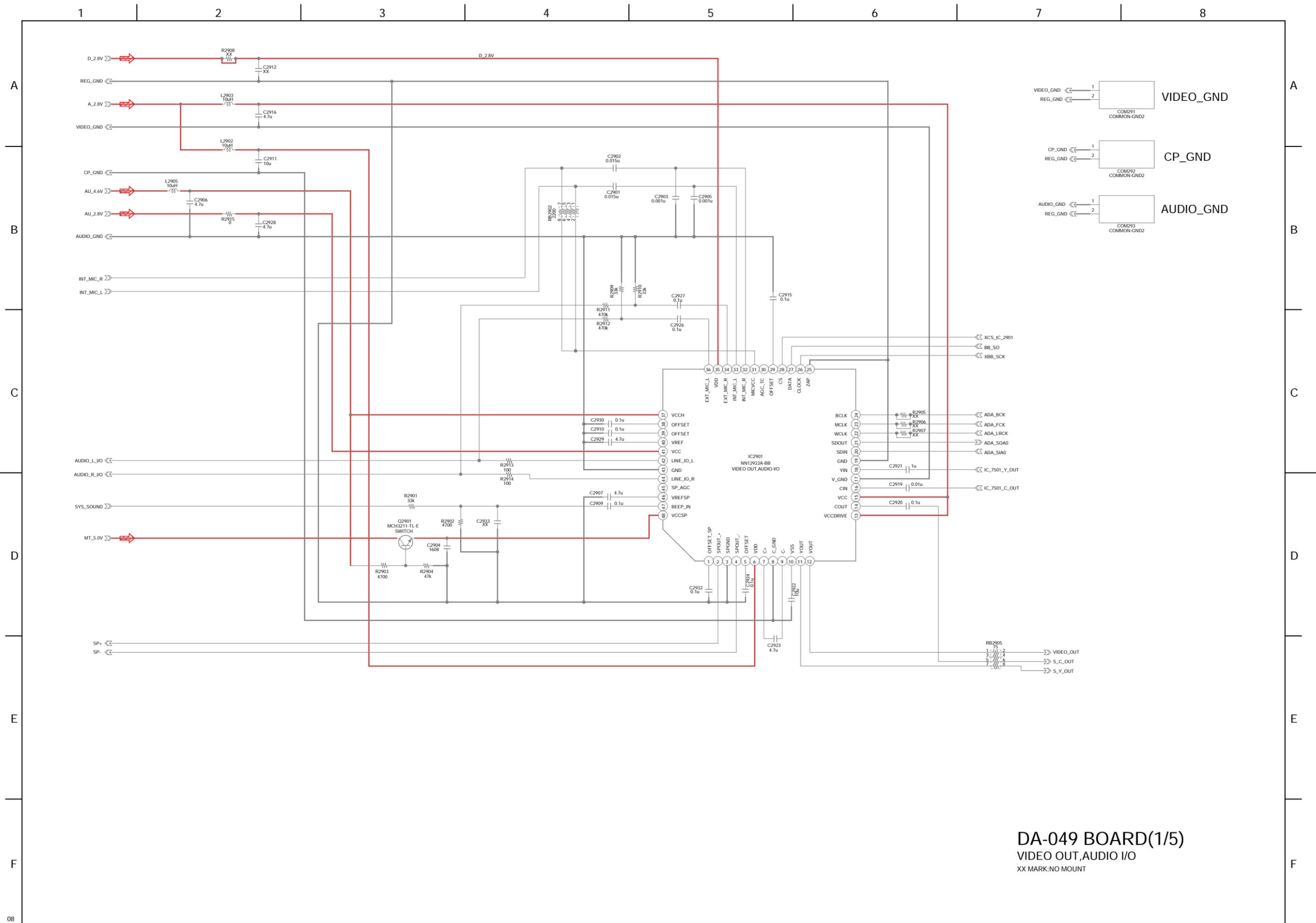
For Printed Wiring Boards

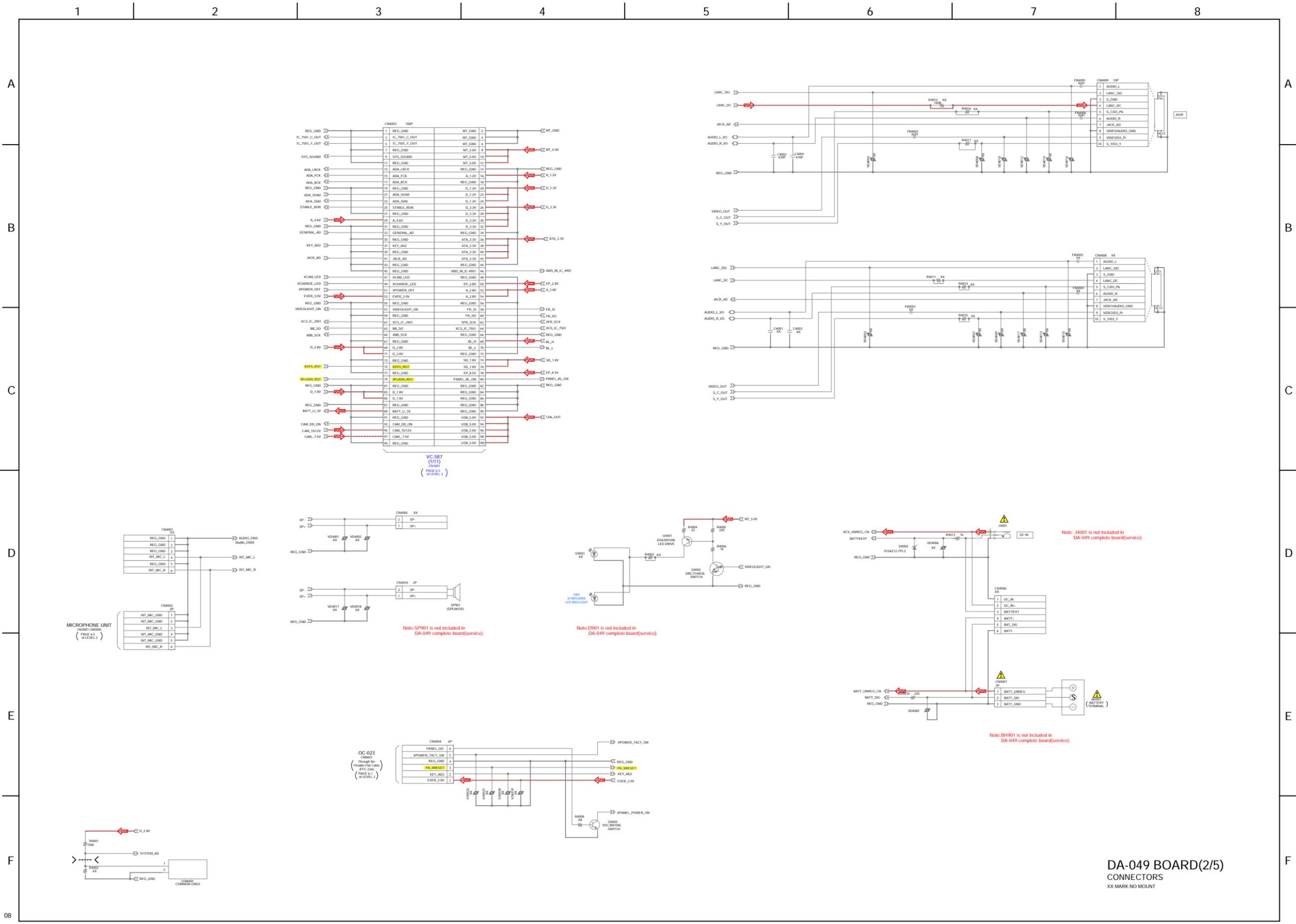
- : Uses unleaded solder.
- : Circuit board
- : Flexible board
- : Pattern from the side which enables seeing.
- : pattern of the rear side
(The other layers' patterns are not indicated)
- Through hole is omitted.
- There are a few cases that the part printed on diagram isn't mounted in this model.
- : panel designation

- Chip parts.

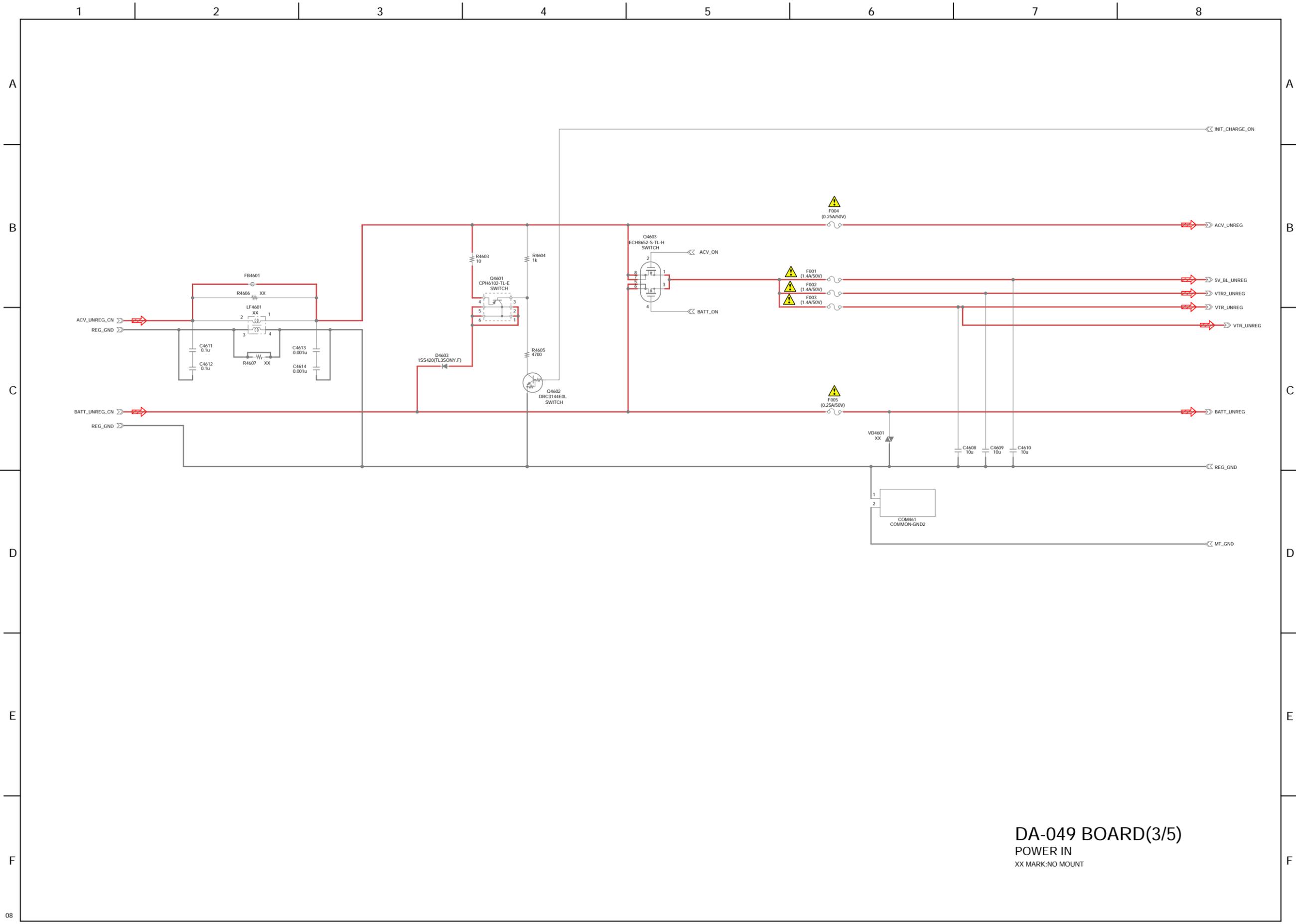


6-1. SCHEMATIC DIAGRAMS

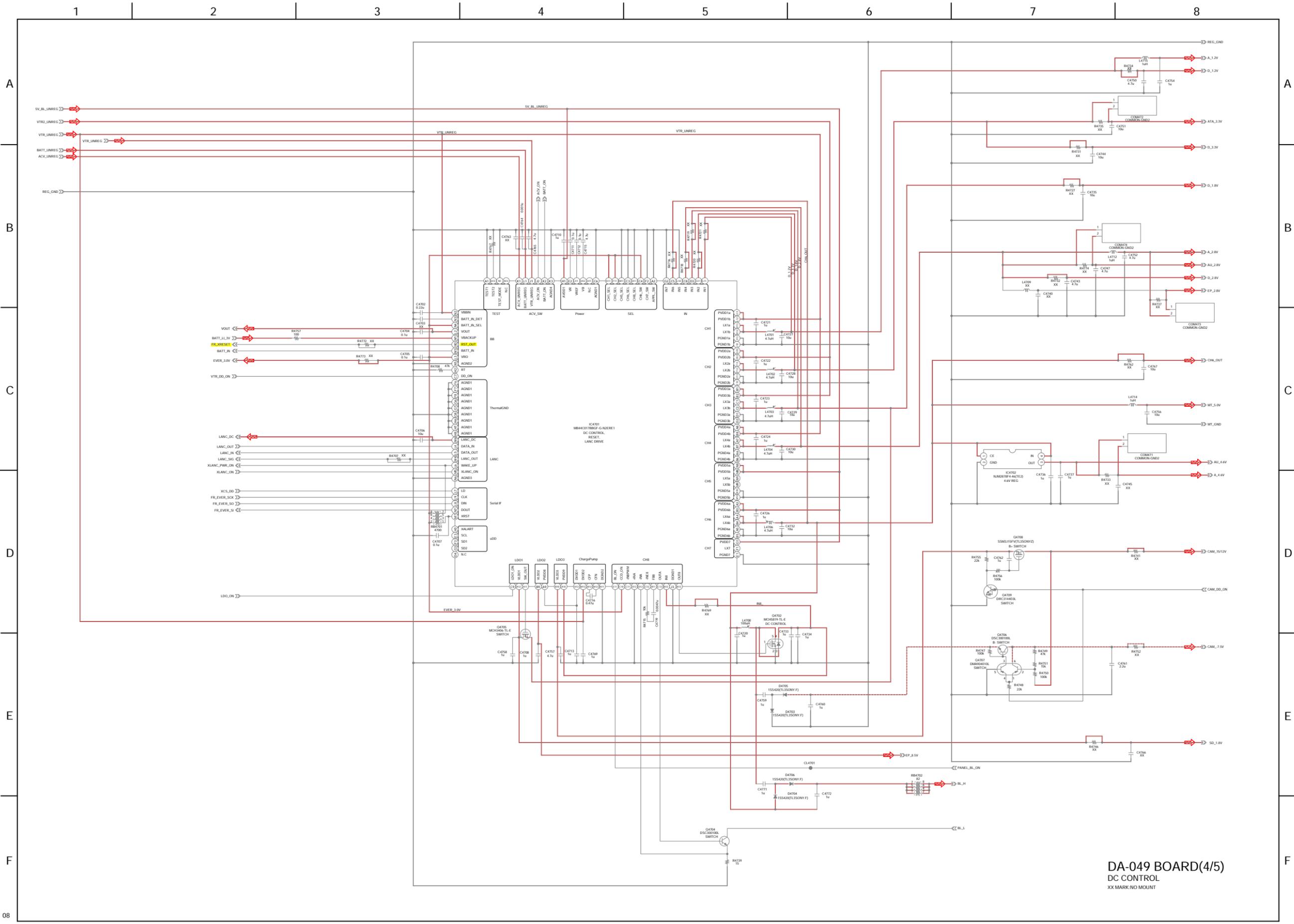




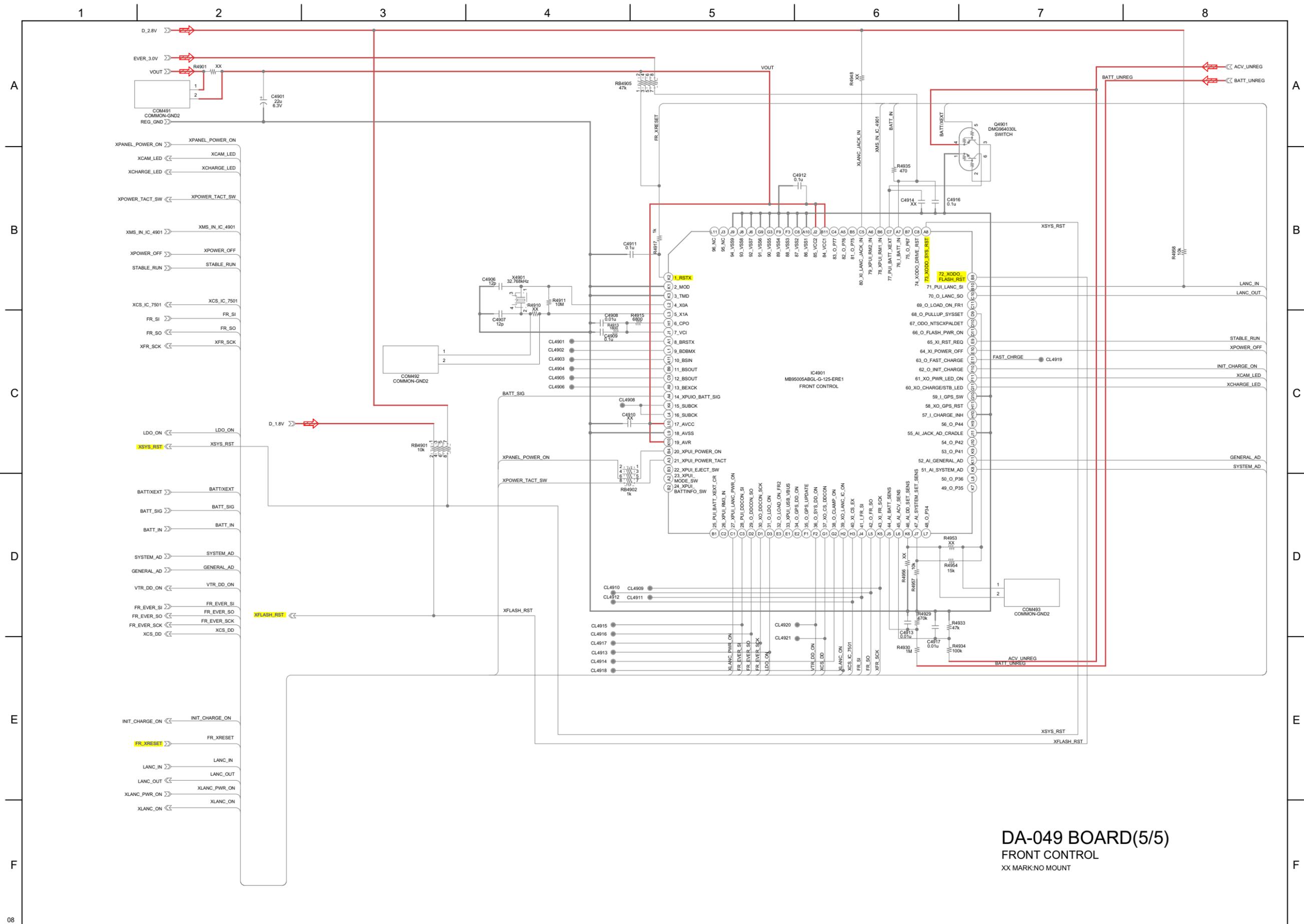
DA-049 BOARD(2/5)
 CONNECTORS
 XX MARK:NO MOUNT



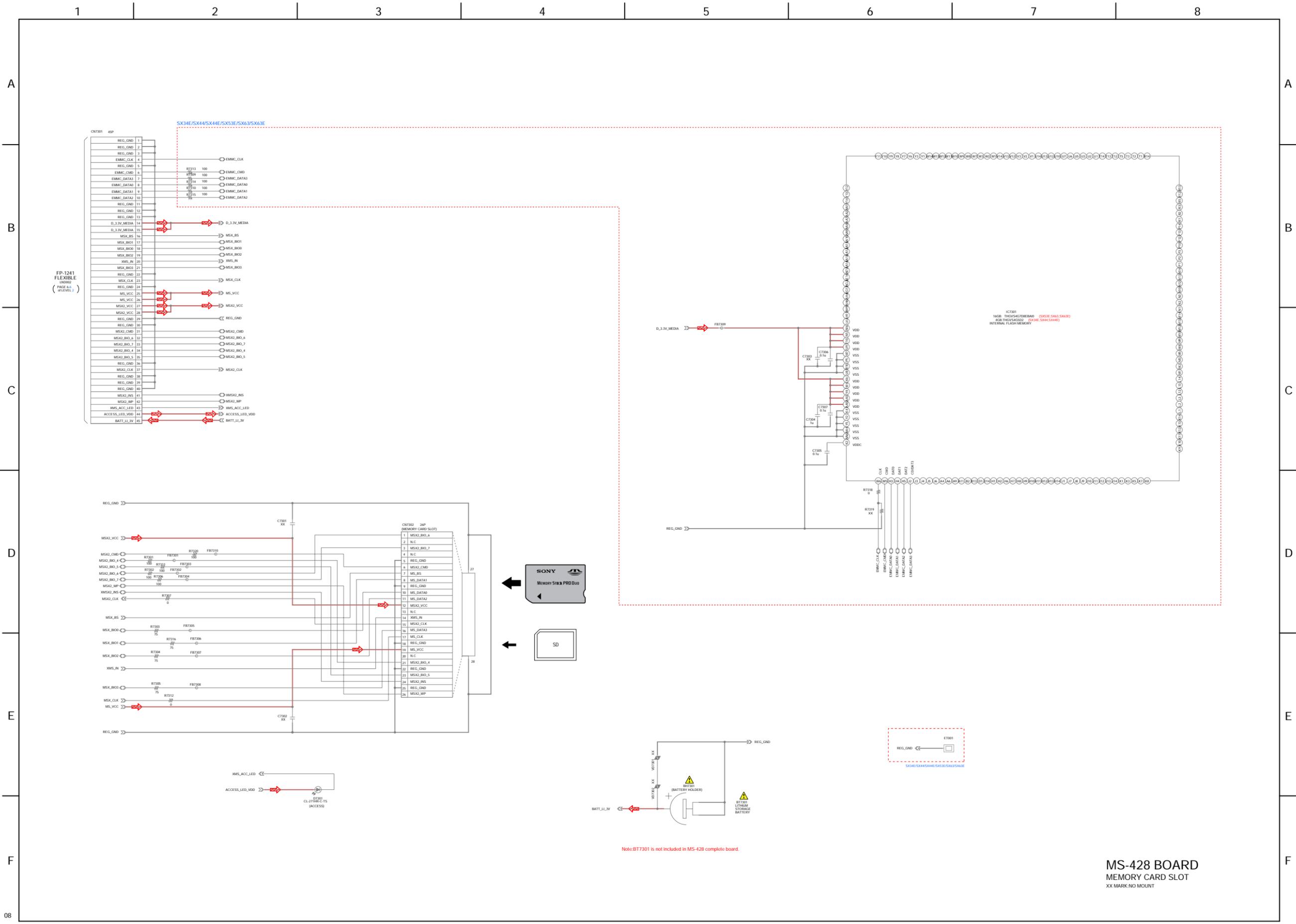
DA-049 BOARD(3/5)
POWER IN
 XX MARK:NO MOUNT

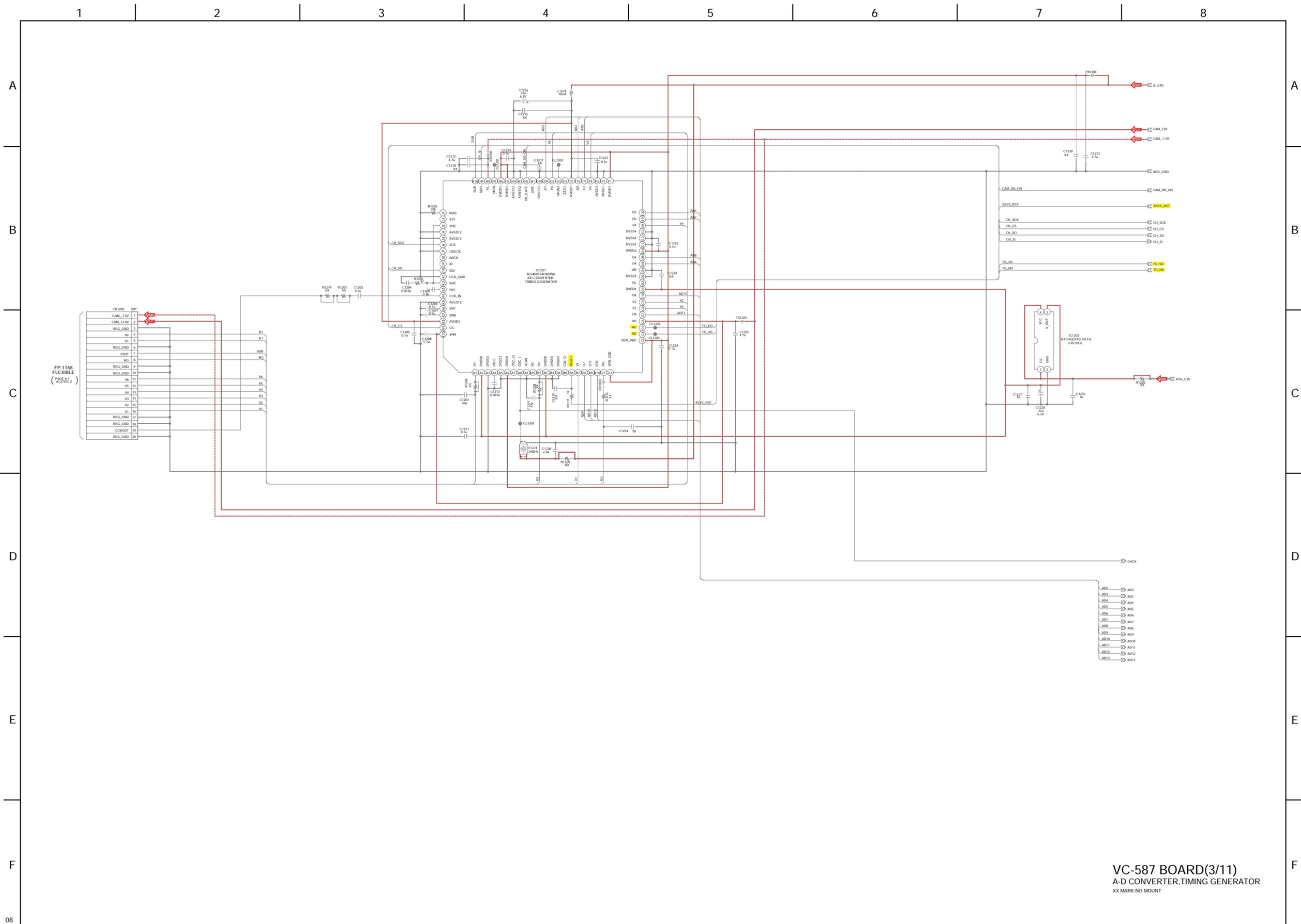


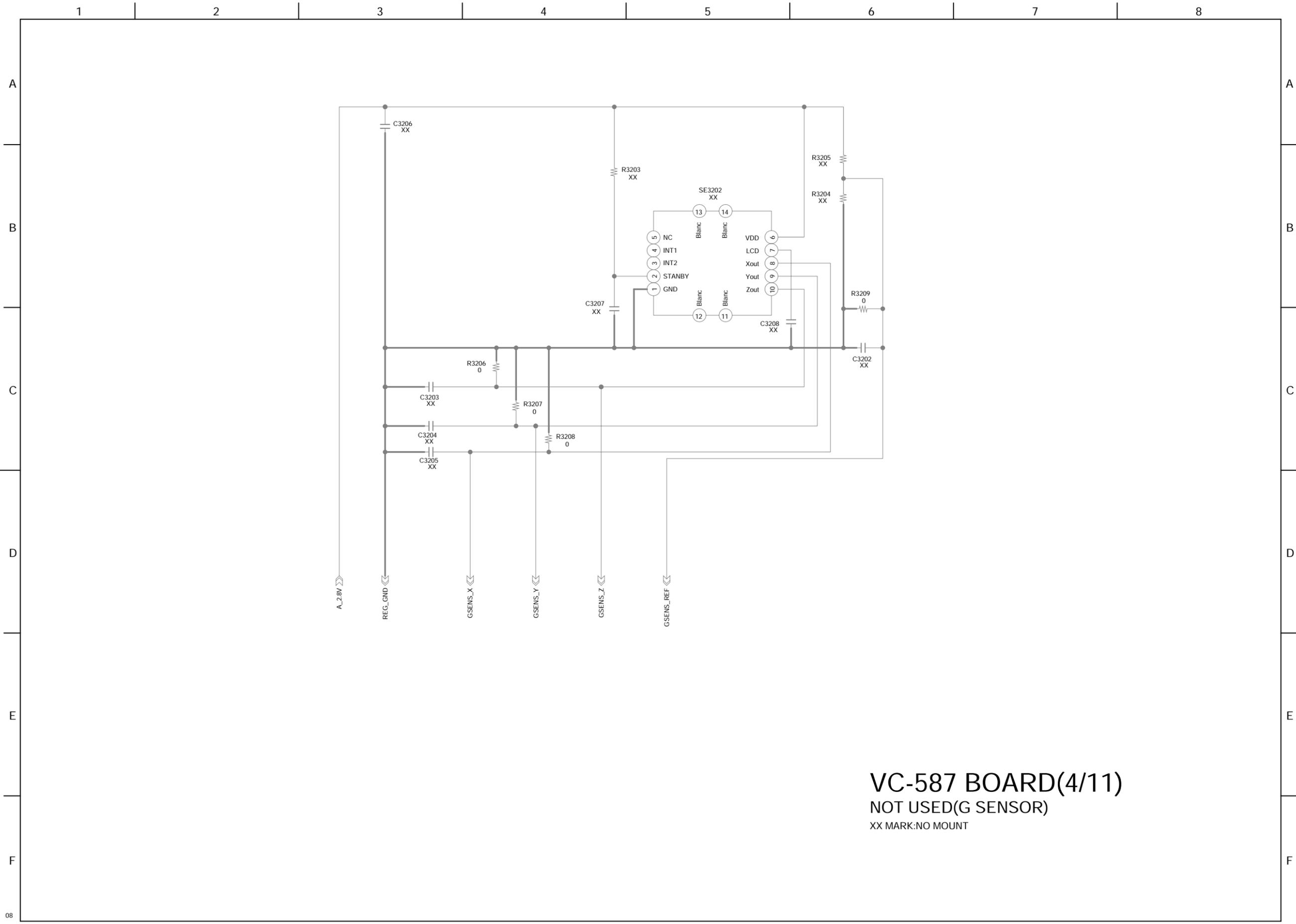
DA-049 BOARD(4/5)
DC CONTROL
XX MARK-NO MOUNT



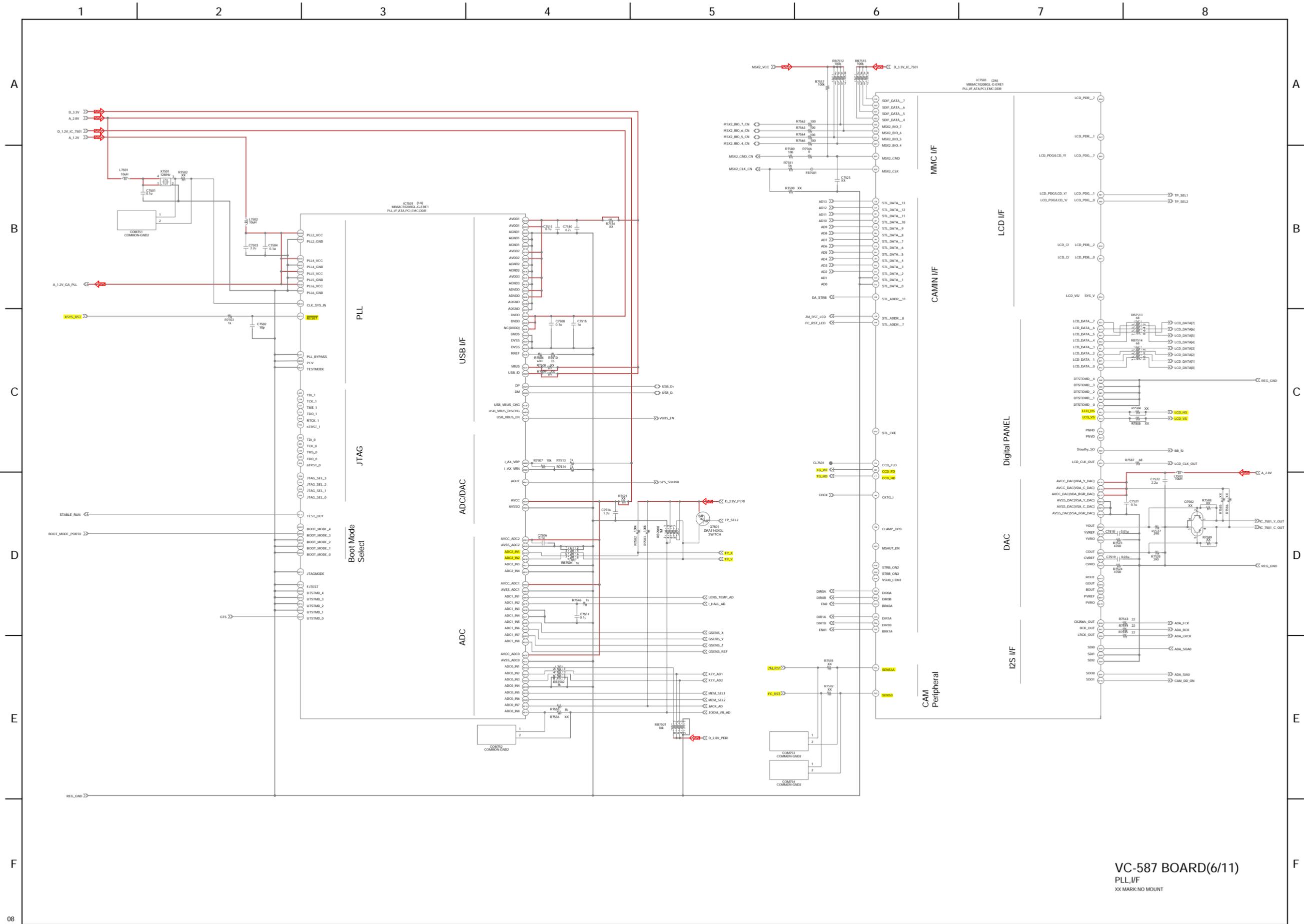
DA-049 BOARD(5/5)
 FRONT CONTROL
 XX MARK:NO MOUNT



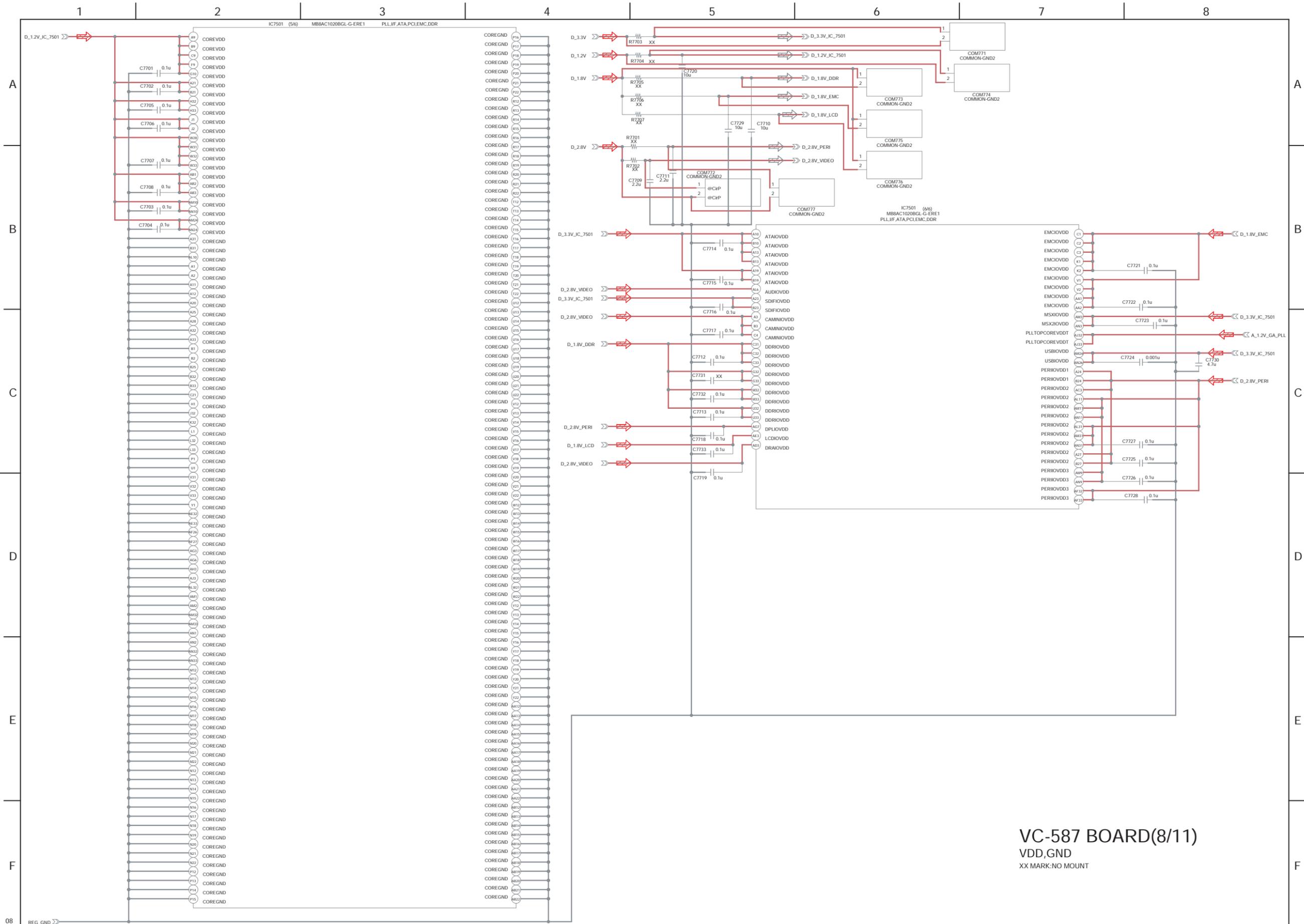


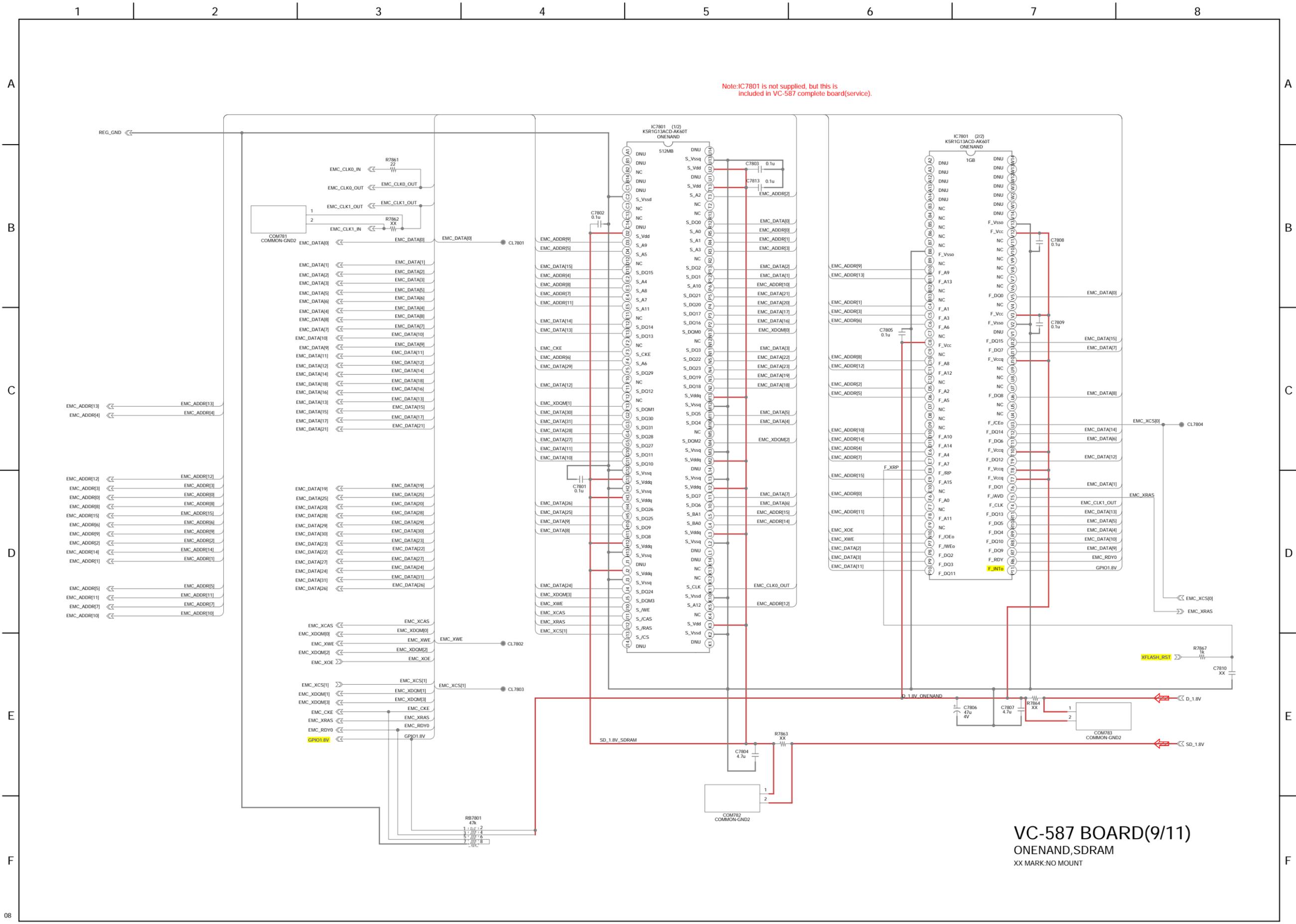


VC-587 BOARD(4/11)
 NOT USED(G SENSOR)
 XX MARK:NO MOUNT

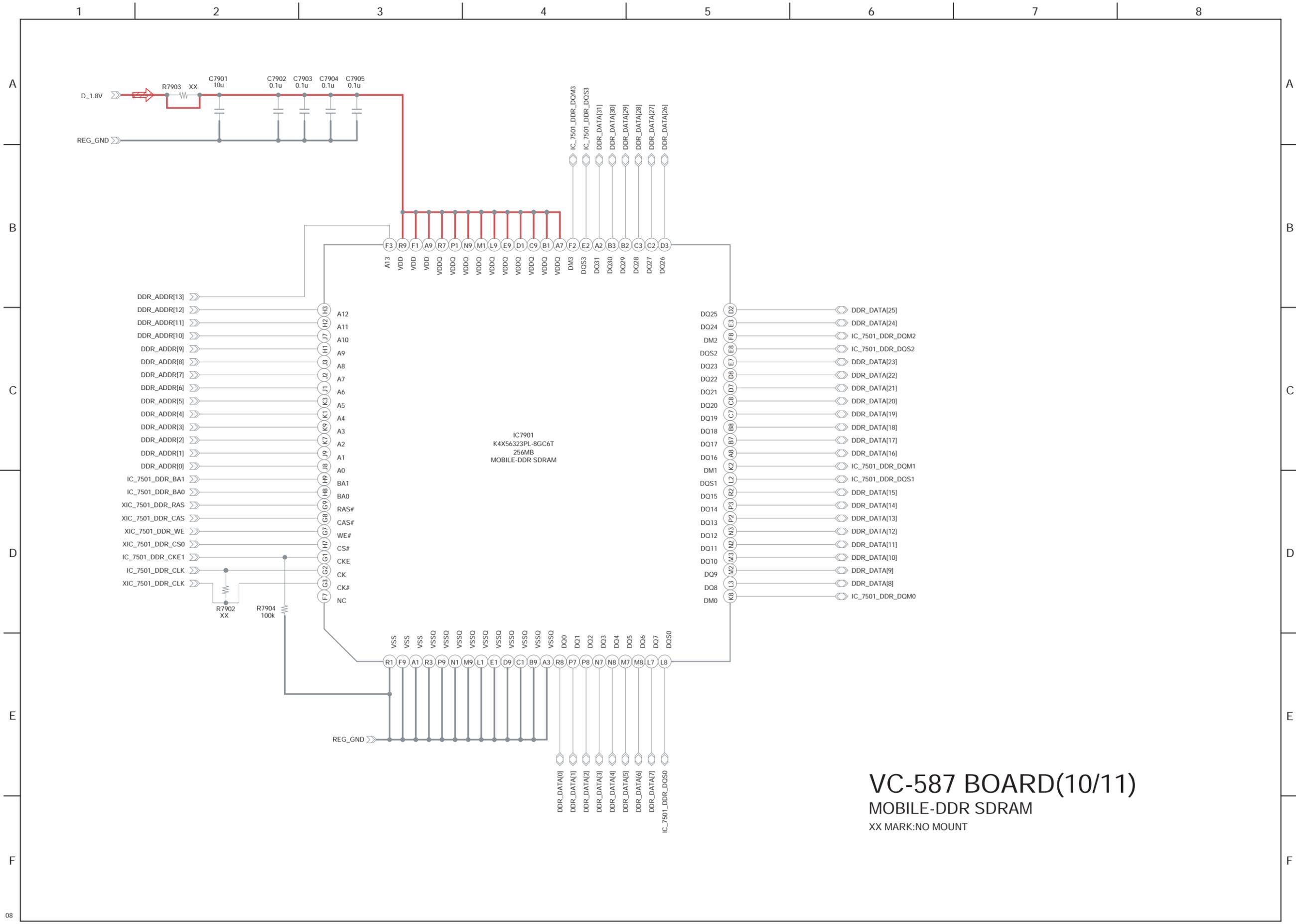


VC-587 BOARD(6/11)
PLL,I/F
XX MARK:NO MOUNT



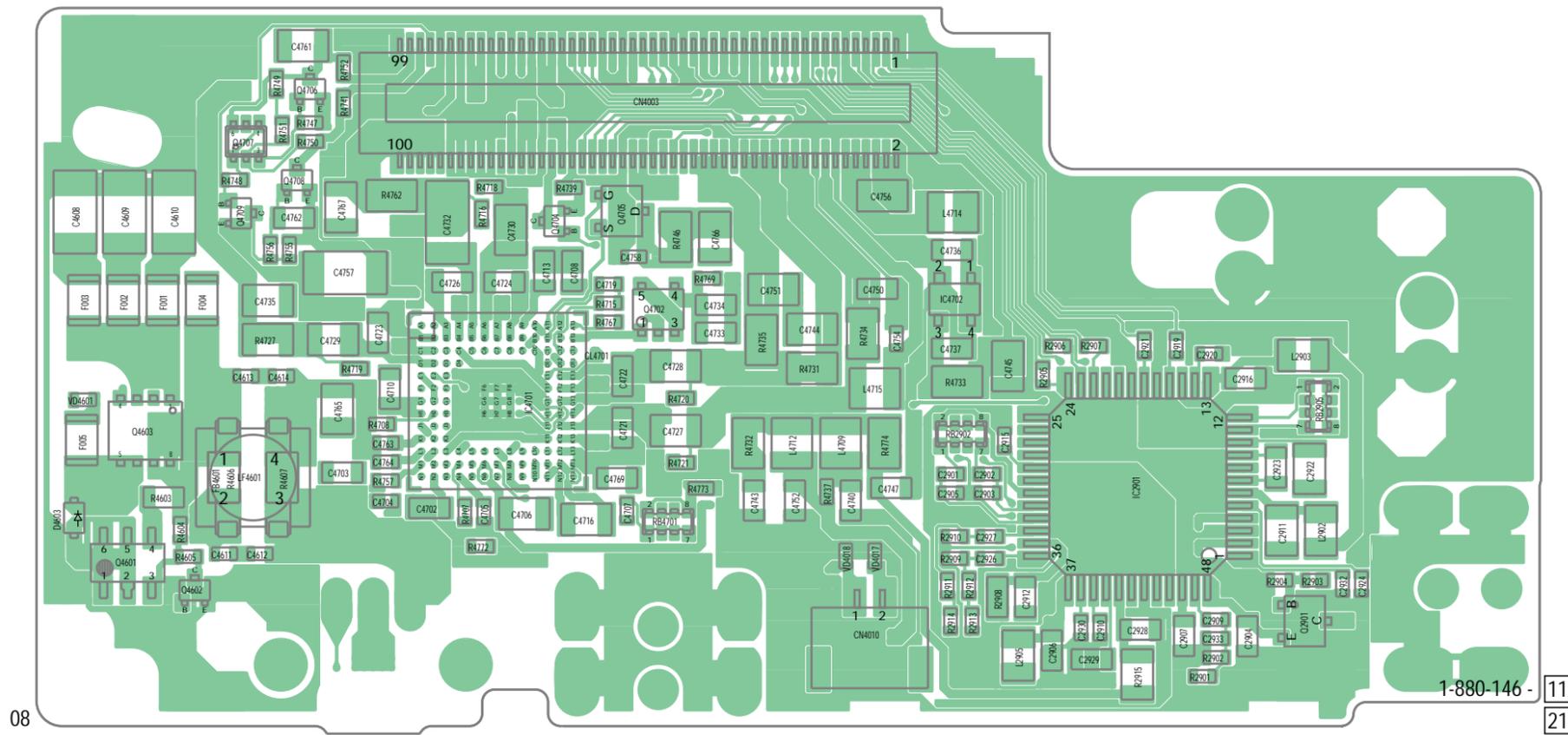


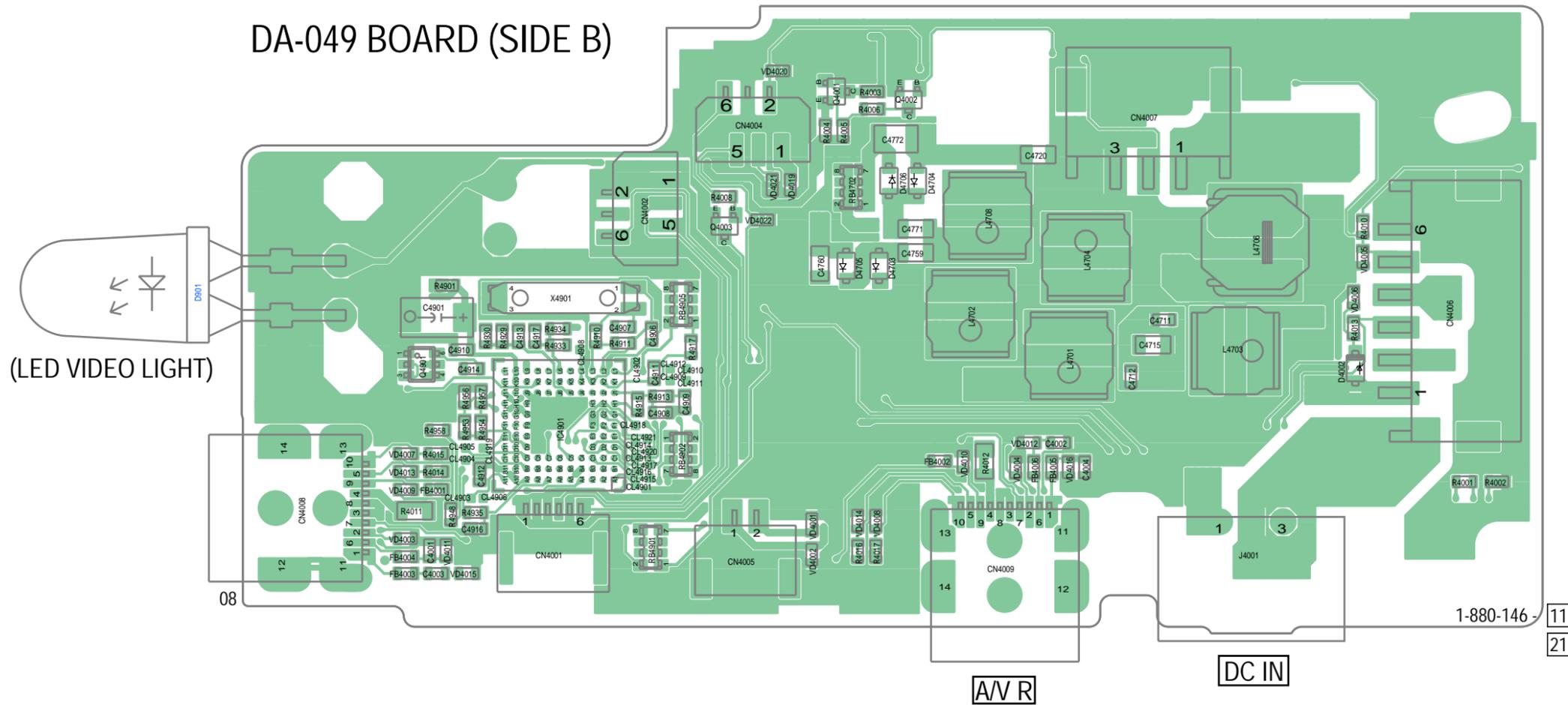
VC-587 BOARD(9/11)
 ONENAND,SDRAM
 XX MARK:NO MOUNT



6-2. PRINTED WIRING BOARDS

DA-049 BOARD (SIDE A)





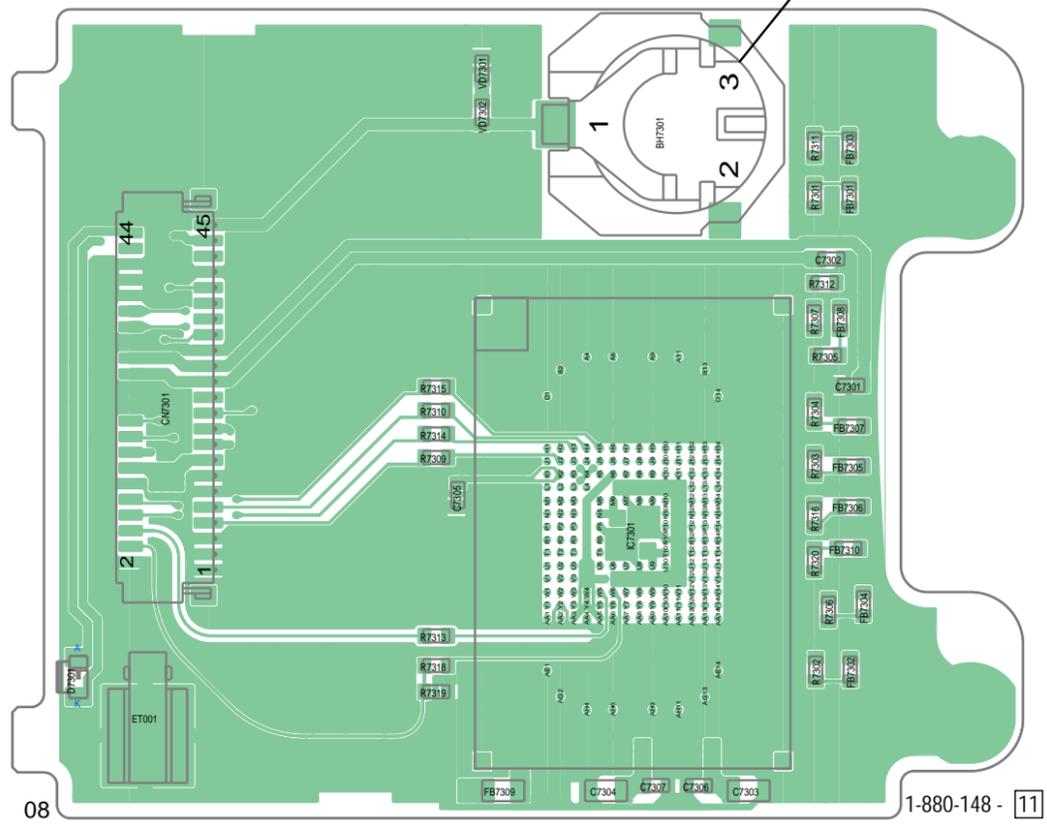
Note: D901 and J4001 are not included in DA-049 complete board (SERVICE).

Caution
 Danger of explosion if battery is incorrectly replaced.
 Replace only with the same or equivalent type.
 Dispose of used batteries according to the instructions.

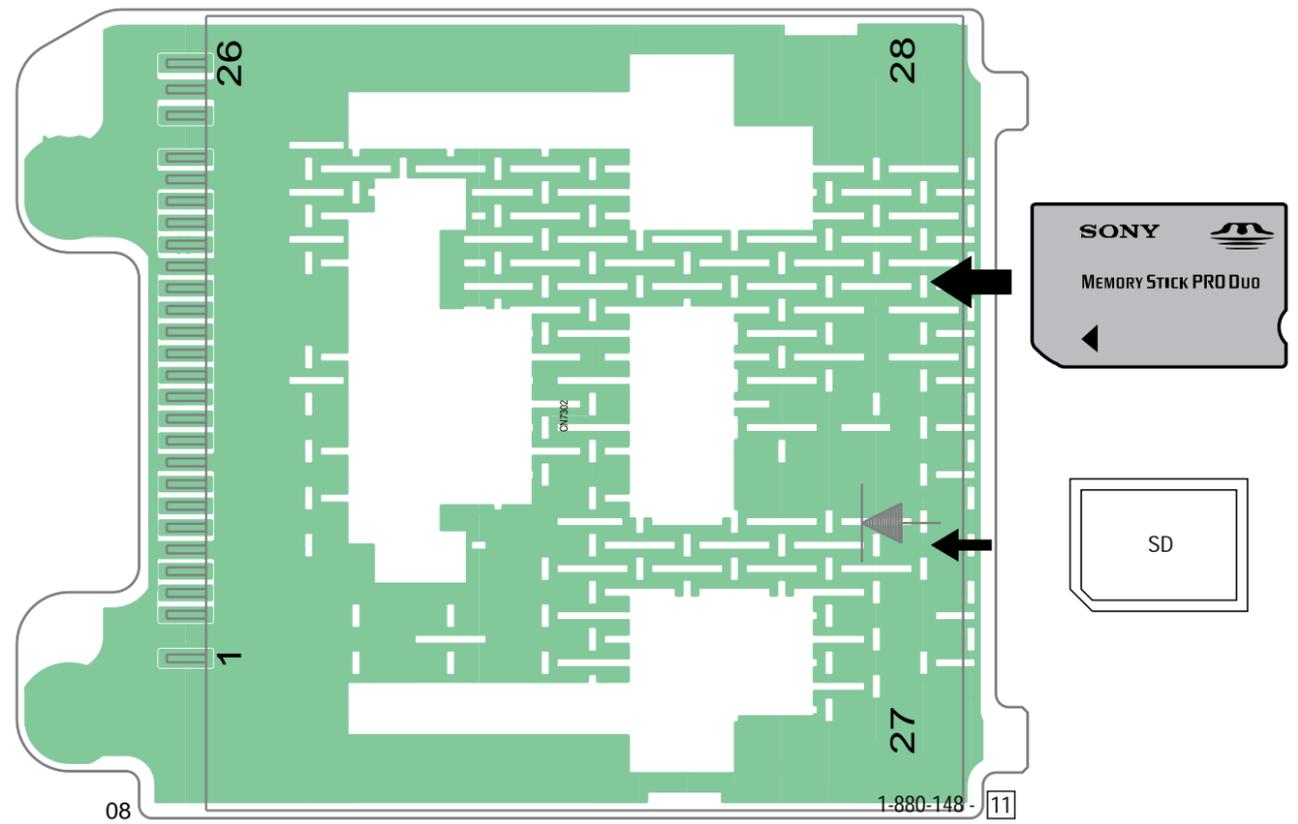
Note: Replace the battery holder (BH7301) together when replacing the lithium battery (BT7301) on the MS-428 board. (The battery holder removed once cannot be used again.)
 When mounting these parts, mount new battery holder first and attach new lithium battery next.



MS-428 BOARD (SIDE A)



MS-428 BOARD (SIDE B)



Note: BT7301 is not included in MS-428 complete board.

VC-587 BOARD (SIDE B)

