CDX-GT450U/GT454US

SERVICE MANUAL

Ver. 1.0 2010.10

US Model
Canadian Model
CDX-GT450U
Russian Model
CDX-GT454US

Photo: CDX-GT450U

- The tuner and CD sections have no adjustments.

Model Name Using Similar Mechanism	NEW
CD Drive Mechanism Type	MG-101N-188
Optical Pick-up Name	DAX-25A

AUDIO POWER SPECIFICATIONS
(US model)
CEA2006 Standard
Power Output: 17 Watts RMS × 4 at
4 Ohms < 1 % THD + N
SN Ratio: 80 dBA
(reference: 1 Watt into 4 Ohms)

SPECIFICATIONS

Tuner section
FM
Tuning range:
US, CND model: 87.5 – 107.9 MHz
RU model: 87.5 – 108.0 MHz
Antenna (aerial) terminal:
External antenna (aerial) connector
Intermediate frequency: 150 kHz
Usable sensitivity: 10 dBf
Selectivity: 75 dB at 400 kHz
Signal-to-noise ratio: 70 dB (mono)
Separation: 40 dB at 1 kHz
Frequency response: 20 – 15,000 Hz

AM (US, CND model)
Tuning range: 530 – 1,710 kHz
Antenna (aerial) terminal:
External antenna (aerial) connector
Intermediate frequency: 25 kHz
Sensitivity: 26 µV

MW/LW (RU model)
Tuning range:
MW: 531 – 1,602 kHz
LW: 153 – 279 kHz
Antenna (aerial) terminal:
External antenna (aerial) connector
Intermediate frequency: 25 kHz
Sensitivity: MW: 26 µV, LW: 45 µV

CD Player section
Signal-to-noise ratio: 120 dB
Frequency response: 10 – 20,000 Hz
Wow and flutter: Below measurable limit

USB Player section
Interface: USB (Full-speed)
Maximum current: 500 mA

Power amplifier section
Outputs: Speaker outputs
Speaker impedance: 4 – 8 ohms
Maximum power output:
52 W × 4 (at 4 ohms)

– Continued on next page –

US, Canadian model
FM/AM COMPACT DISC PLAYER
Russian model
FM/MW/LW COMPACT DISC PLAYER

9-889-981-01
2010J04-1

Sony Corporation
Published by Sony Techno Create Corporation

SONY®

General

Outputs:
- Audio outputs terminal (front, rear/sub switchable) (US, CND model)
- Audio outputs terminal (rear/sub switchable) (RU model)
- Power antenna (aerial) relay control terminal
- Power amplifier control terminal

Inputs:
- Telephone ATT control terminal (RU model)
- Remote controller input terminal
- Antenna (aerial) input terminal
- AUX input jack (stereo mini jack)
- USB signal input connector

Power requirements: 12 V DC car battery (negative ground (earth))

Dimensions: Approx. 178 × 50 × 179 mm (7 1/8 × 2 × 7 1/8 in.) (w/h/d)

Mounting dimensions: Approx. 182 × 53 × 162 mm (7 1/4 × 2 1/8 × 6 1/2 in.) (w/h/d)

Mass: Approx. 1.2 kg (2 lb. 11 oz.)

Supplied accessories:
- Card remote commander: RM-X151 (US, CND model)
- Parts for installation and connections (1 set)

Design and specifications are subject to change without notice.

- Abbreviation
  CND : Canadian model
  RU : Russian model

SAFETY-RELATED COMPONENT WARNING!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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 ⚠ 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.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body. During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pickup block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

NOTES ON CHIP COMPONENT REPLACEMENT

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

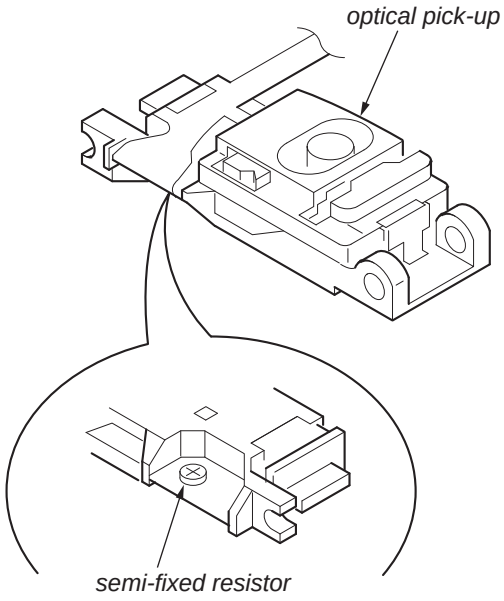
TEST DISCS

Please use the following test discs for the check on the CD section.

YEDS-18 (Part No. 3-702-101-01)
PATD-012 (Part No. 4-225-203-01)

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

If the optical pick-up block is defective, please replace the whole optical pick-up block.
Never turn the semi-fixed resistor located at the side of optical pick-up block.



Russian model:

CLASS 1
LASER PRODUCT

This label is located on the bottom of the chassis.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free 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)

: 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.

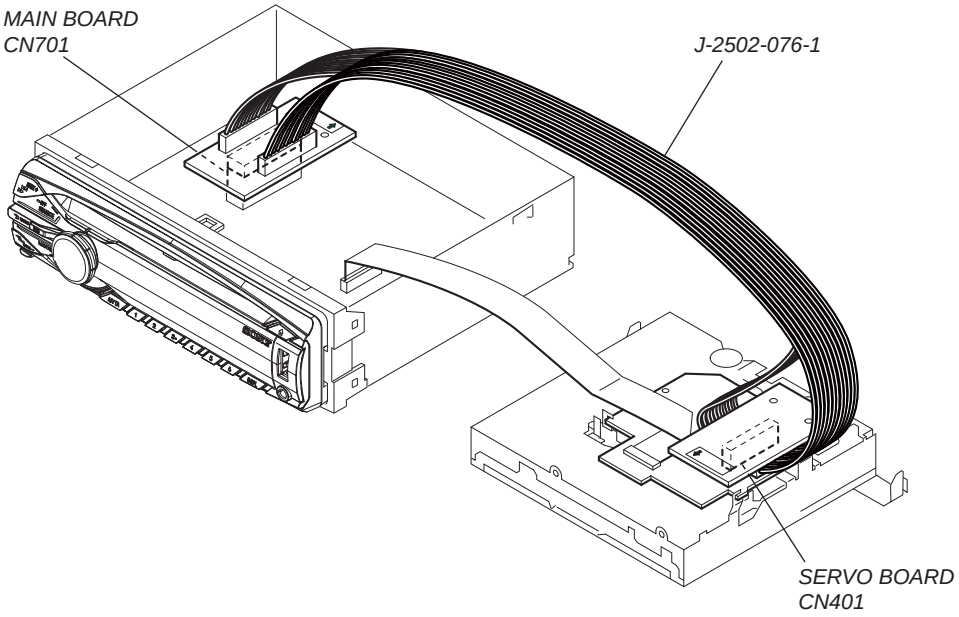
TABLE OF CONTENTS

SECTION 1
SERVICE NOTE

EXTENSION CABLE AND SERVICE POSITION

When repairing or servicing this set, connect the jig (extension cable) as shown below.

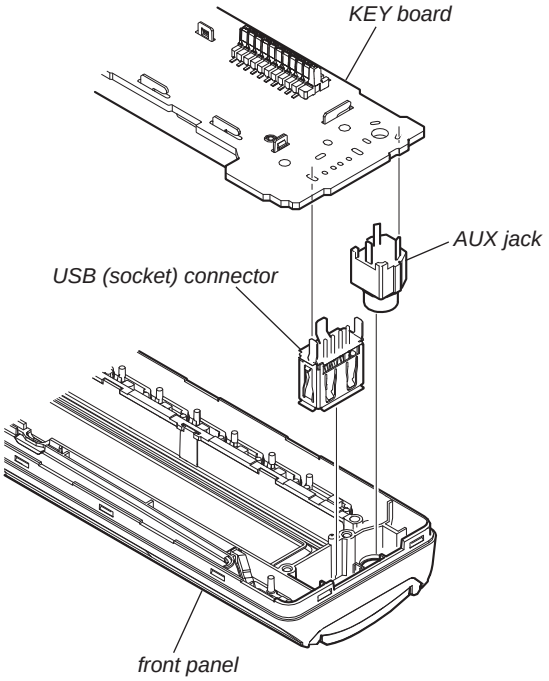
- Connect the MAIN board (CN701) and the SERVO board (CN401) with the extension cable (Part No. J-2502-076-1).



NOTE FOR REPLACEMENT OF THE USB CONNECTOR (CN902)

To replace the USB connector requires alignment.

1. Insert the USB connector into the front panel.
2. Place the KEY board on the front panel and align the terminals of the USB connector with the holes in the KEY board.
3. Solder the four terminals of the connector.



NOTE FOR REPLACEMENT OF THE SERVO BOARD

When repairing, the complete SERVO board (Part No. A-1768-002-A) should be replaced since any parts in the SERVO board cannot be repaired.

NOTE FOR THE 20-PIN CONNECTOR (CN901)

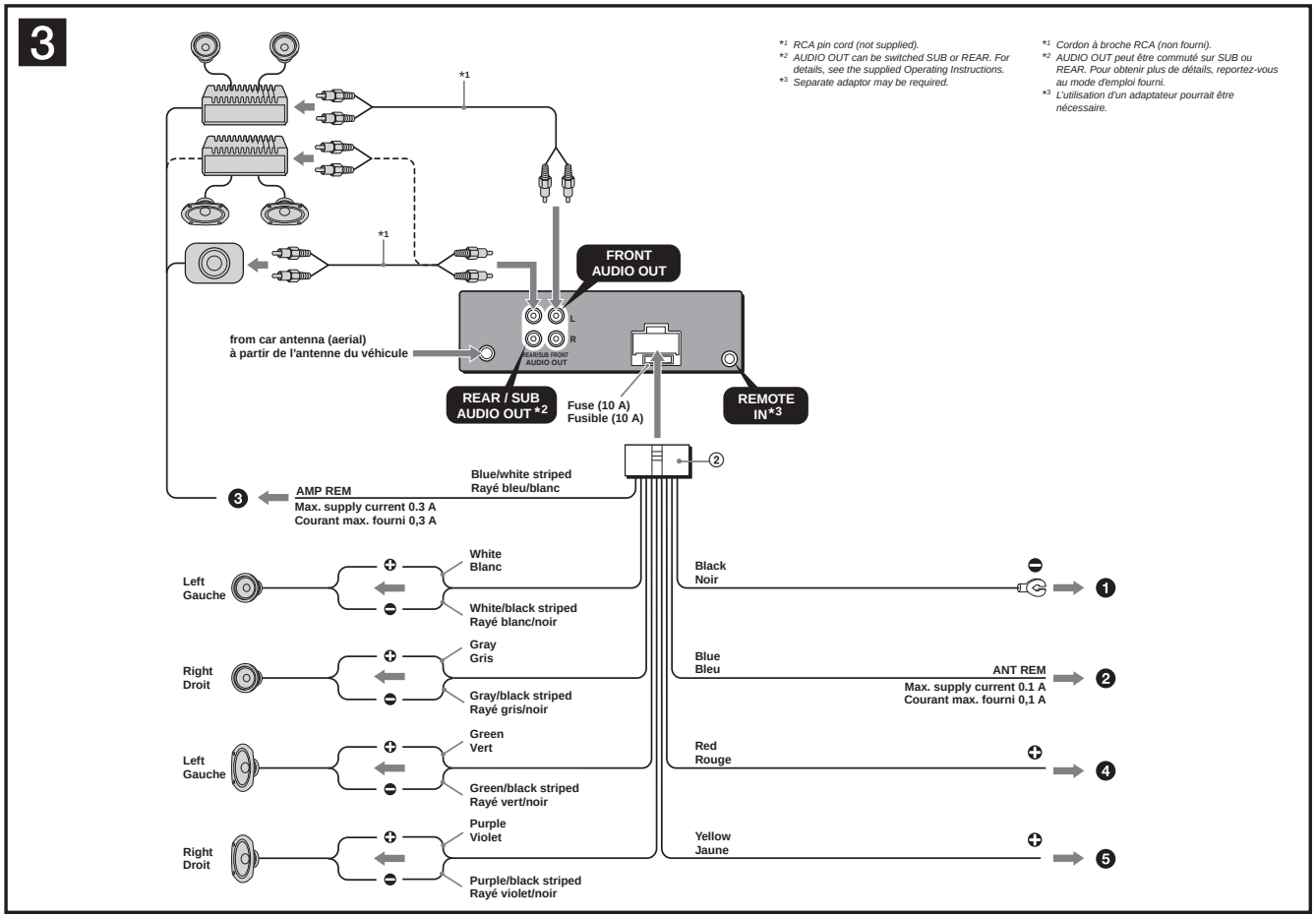
Do not use alcohol to clean the 20-pin connector (CN901) connecting the front panel with the main body.

Do not touch the connector directly with your bare hand. Poor contact may be caused.

SECTION 2
GENERAL

This section is extracted from instruction manual.

- **CONNECTIONS**
- **US, Canadian model**



*1 RCA pin cord (not supplied).
*2 AUDIO OUT can be switched SUB or REAR. For details, see the supplied Operating Instructions.
*3 Separate adaptor may be required.

*1 Cordon à broche RCA (non fourni).
*2 AUDIO OUT peut être commuté sur SUB ou REAR. Pour obtenir plus de détails, reportez-vous au mode d'emploi fourni.
*3 L'utilisation d'un adaptateur pourrait être nécessaire.

Connection diagram 3

1 To a metal surface of the car
First connect the black ground (earth) lead, then connect the yellow and red power supply leads.

2 To the power antenna (aerial) control lead or power supply lead of antenna (aerial) booster
Notes
- *It is not necessary to connect this lead if there is no power antenna (aerial) or antenna (aerial) booster, or with a manually-operated telescopic antenna (aerial).*
- *When your car has a built-in FM/AM antenna (aerial) in the rear/side glass, see "Notes on the control and power supply leads."*

3 To AMP REMOTE IN of an optional power amplifier
This connection is only for amplifiers. Connecting any other system may damage the unit.

4 To the +12 V power terminal which is energized in the accessory position of the ignition switch
Notes
- *If there is no accessory position, connect to the +12 V power (battery) terminal which is energized at all times. Be sure to connect the black ground (earth) lead to a metal surface of the car first.*
- *When your car has a built-in FM/AM antenna (aerial) in the rear/side glass, see "Notes on the control and power supply leads."*

5 To the +12 V power terminal which is energized at all times
Be sure to connect the black ground (earth) lead to a metal surface of the car first.

Notes on the control and power supply leads
- *The power antenna (aerial) control lead (blue) supplies +12 V DC when you turn on the tuner.*
- *When your car has built-in FM/AM antenna (aerial) in the rear/side glass, connect the power antenna (aerial) control lead (blue) or the accessory power supply lead (red) to the power terminal of the existing antenna (aerial) booster. For details, consult your dealer.*
- *A power antenna (aerial) without a relay box cannot be used with this unit.*

Memory hold connection
When the yellow power supply lead is connected, power will always be supplied to the memory circuit even when the ignition switch is turned off.

Notes on speaker connection
- *Before connecting the speakers, turn the unit off.*
- *Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities to avoid its damage.*
- *Do not connect the speaker terminals to the car chassis, or connect the terminals of the right speakers with those of the left speaker.*
- *Do not connect the ground (earth) lead of this unit to the negative (–) terminal of the speaker.*
- *Do not attempt to connect the speakers in parallel.*
- *Connect only passive speakers. Connecting active speakers (with built-in amplifiers) to the speaker terminals may damage the unit.*
- *To avoid a malfunction, do not use the built-in speaker leads installed in your car if the unit shares a common negative (–) lead for the right and left speakers.*
- *Do not connect the unit's speaker leads to each other.*

Note on connection
If speaker and amplifier are not connected correctly, "FAILURE" appears in the display. In this case, make sure the speaker and amplifier are connected correctly.

Schéma de raccordement 3

1 À un point métallique de la voiture
Branchez d'abord le câble de mise à la masse noir et, ensuite, les câbles d'alimentation jaune et rouge.

2 Au câble de commande d'antenne électrique ou au câble d'alimentation de l'amplificateur d'antenne
Remarques
- *Il n'est pas nécessaire de raccorder ce câble s'il n'y a pas d'antenne électrique ni d'amplificateur d'antenne, ou avec une antenne télescopique manuelle.*
- *Si votre voiture est équipée d'une antenne FM/AM intégrée dans la vitre arrière/latérale, voir « Remarques sur les câbles de commande et d'alimentation ».*

3 Au niveau de AMP REMOTE IN de l'amplificateur de puissance en option
Ce raccordement s'applique uniquement aux amplificateurs. Le branchement de tout autre système risque d'endommager l'appareil.

4 À la borne d'alimentation +12 V qui est alimentée quand la clé de contact est sur la position accessoires
Remarques
- *S'il n'y a pas de position accessoires, raccordez la borne d'alimentation (batterie) +12 V qui est alimentée en permanence. Raccordez d'abord le câble de mise à la masse noir à un point métallique du véhicule.*
- *Si votre voiture est équipée d'une antenne FM/AM intégrée dans la vitre arrière/latérale, voir « Remarques sur les câbles de commande et d'alimentation ».*

5 À la borne d'alimentation +12 V qui est alimentée en permanence
Raccordez d'abord le câble de mise à la masse noir à un point métallique du véhicule.

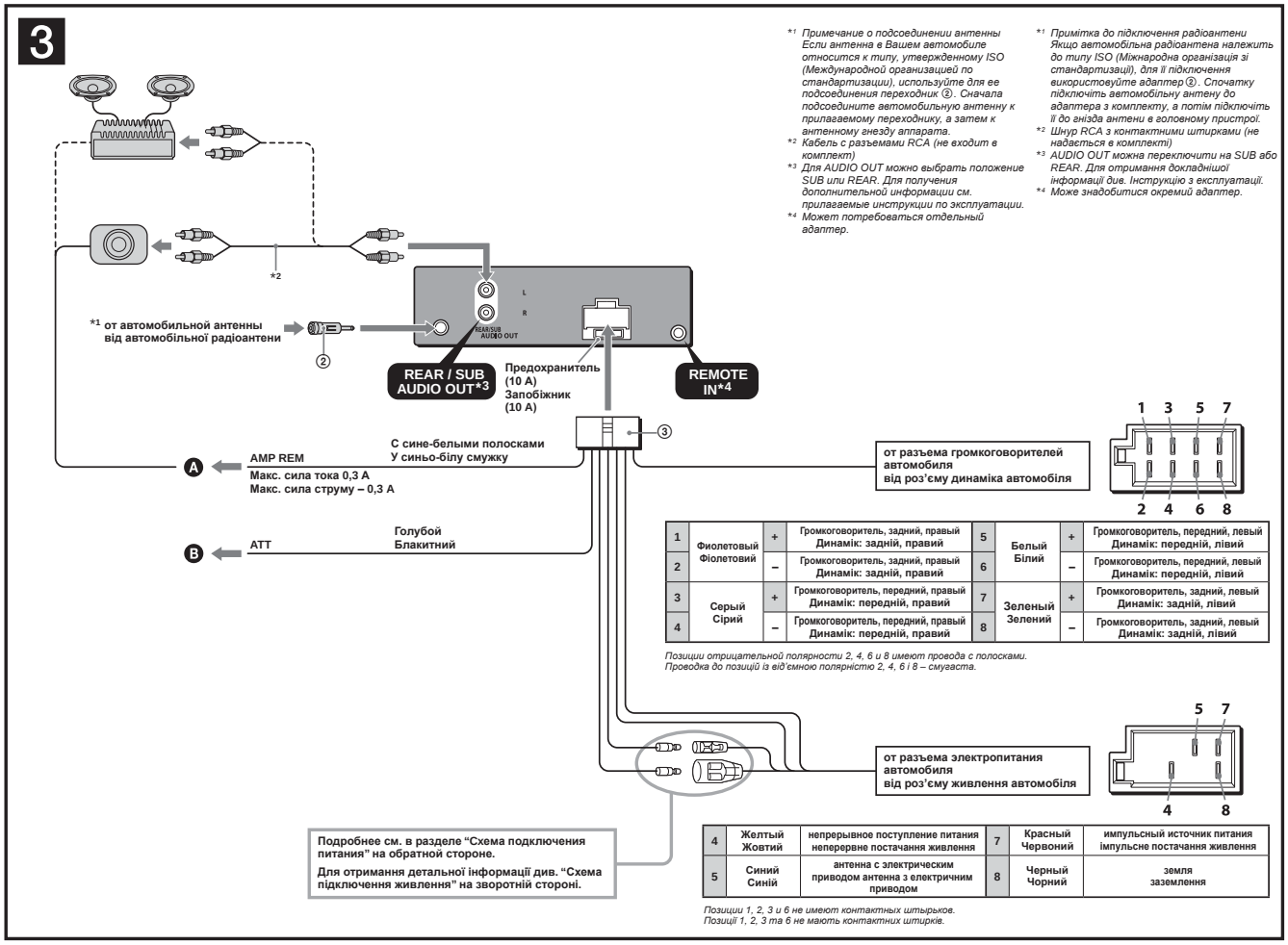
Remarques sur les câbles de commande et d'alimentation
- *Le câble de commande d'antenne électrique (bleu) fournit une alimentation de + 12 V CC lorsque vous mettez la radio en marche.*
- *Lorsque votre voiture est équipée d'une antenne FM/AM intégrée dans la vitre arrière/latérale, raccordez le câble de commande d'antenne électrique (bleu) ou le câble d'alimentation des accessoires (rouge) à la borne d'alimentation de l'amplificateur d'antenne existant. Pour plus de détails, consultez votre détaillant.*
- *Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.*

Raccordement pour la conservation de la mémoire
Lorsque le câble d'alimentation jaune est raccordé, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur le raccordement des haut-parleurs
- *Avant de raccorder les haut-parleurs, éteignez l'appareil.*
- *Utilisez des haut-parleurs ayant une impédance de 4 à 8 ohms avec une capacité électrique adéquate pour éviter de les endommager.*
- *Ne raccordez pas les bornes du système de haut-parleurs au châssis de la voiture et ne raccordez pas les bornes du haut-parleur droit à celles du haut-parleur gauche.*
- *Ne raccordez pas le câble de mise à la masse de cet appareil à la borne négative (–) du haut-parleur.*
- *N'essayez pas de raccorder les haut-parleurs en parallèle.*
- *Raccordez uniquement des haut-parleurs passifs. Le raccordement de haut-parleurs actifs (avec amplificateurs intégrés) aux bornes des haut-parleurs peut endommager l'appareil.*
- *Pour éviter tout problème de fonctionnement, n'utilisez pas les câbles des haut-parleurs intégrés installés dans votre voiture si l'appareil possède un câble négatif commun (–) pour les haut-parleurs droit et gauche.*
- *Ne raccordez pas entre eux les cordons des haut-parleurs de l'appareil.*

Remarque sur le raccordement
Si le haut-parleur et l'amplificateur ne sont pas raccordés correctement, le message « FAILURE » s'affiche. Dans ce cas, assurez-vous que les haut-parleurs et l'amplificateur sont bien raccordés.

- **CONNECTIONS**
- **Russian model**



**1 Примечание о подсоединении антенны Если антенна в Вашем автомобиле относится к типу, утвержденному ISO (Международной организацией по стандартизации), используйте для ее подсоединения переходник ②. Сначала подсоедините автомобильную антенну к прилагаемому переходнику, а затем к антенному гнезду аппарата.*
**2 Кабель с разъемами RCA (не входит в комплект)*
**3 Для AUDIO OUT можно выбрать положение SUB или REAR. Для получения дополнительной информации см. прилагаемые инструкции по эксплуатации.*
**4 Может потребоваться отдельный адаптер.*

**1 Примітка до підключення радіоантени Якщо автомобільна радіоантена належить до типу ISO (Міжнародна організація зі стандартизації), для її підключення використовуйте адаптер ②. Спочатку підключіть автомобільну антену до адаптера з комплекту, а потім підключіть її до гнізда антени в головному пристрої.*
**2 Шнур RCA з контактними штирками (не надається в комплекті)*
**3 AUDIO OUT можна перемикати на SUB або REAR. Для отримання докладнішої інформації див. Інструкцію з експлуатації.*
**4 Може знадобитися окремий адаптер.*

1	Фиолетовый Фіолетовий	+	Громкоговоритель, задний, правый Динамік: задній, правий	5	Белый Білий	+	Громкоговоритель, передний, левый Динамік: передній, лівий
2		–	Громкоговоритель, задний, правый Динамік: задній, правий	6		–	Громкоговоритель, передний, левый Динамік: передній, лівий
3	Серый Сірий	+	Громкоговоритель, передний, правый Динамік: передній, правий	7	Зеленый Зелений	+	Громкоговоритель, задний, левый Динамік: задній, лівий
4		–	Громкоговоритель, передний, правый Динамік: передній, правий	8		–	Громкоговоритель, задний, левый Динамік: задній, лівий

Позиции отрицательной полярности 2, 4, 6 и 8 имеют провода с полосками.
Проводка до позицій із від'ємною полярністю 2, 4, 6 і 8 – смугаста.

Подробнее см. в разделе "Схема подключения питания" на обратной стороне.
Для отримання детальної інформації див. "Схема підключення живлення" на зворотній стороні.

4	Желтый Жовтий	непрерывное поступление питания неперервне постачання живлення		7	Красный Червоний	импульсный источник питания імпульсне постачання живлення	
5	Синий Синій	антенна с электрическим приводом антенна з електричним приводом		8	Черный Чорний	земля заземлення	

Позиции 1, 2, 3 и 6 не имеют контактных штырьков.
Позиції 1, 2, 3 та 6 не мають контактних штирків.

Схема подсоединения 3

A Подключение к входу AMP REMOTE IN дополнительного усилителя мощности
Этот вариант подключения используется только для усилителей. Подключение любой другой системы может привести к повреждению аппарата.

B К интерфейсному кабелю автомобильного телефона

Предостережение

Если Вы используете антенну с электрическим приводом без релейного блока, подсоединение этого аппарата посредством прилагаемого провода питания ③ может привести к повреждению антенны.

О проводах управления и питания
- *При включении тюнера, а также использовании функции AF (Альтернативные частоты) или TA (Сообщения о текущей ситуации на дорогах) по проводу питания приемной антенны (синий) подается +12 В постоянного тока.*
- *Если на заднем/боковом стекле автомобиля установлена встроенная антенна диапазона FM/MW/LW, подсоедините провод управления антенной с электрическим приводом (синий) или провод питания аппарата (красный) к клемме питания существующего усилителя антенны. Чтобы получить дополнительные сведения, обратитесь к своему дилеру.*
- *Антенна с электрическим приводом, не снабженная релейным блоком, с этим аппаратом использоваться не может.*

Подсоединение для поддержки памяти
Когда к аппарату подсоединен желтый электрический провод, блок памяти будет постоянно получать питание даже при выключенном зажигании.

Примечания относительно подсоединения громкоговорителей
- *Прежде чем подсоединять громкоговорители, выключите аппарат.*
- *Используйте громкоговорители с полным сопротивлением 4 - 8 Ом, обладающие способностью принимать достаточно мощный сигнал. В противном случае они могут быть повреждены.*
- *Не подсоединяйте контактные гнезда громкоговорителей к шасси автомобиля и не соединяйте гнезда правого громкоговорителя с гнездами левого.*
- *Не подключайте провод заземления аппарата к отрицательному (–) контакту громкоговорителя.*
- *Не пытайтесь подсоединить громкоговорители параллельно.*
- *Подсоединять можно только пассивные громкоговорители. Подсоединение активных громкоговорителей (со встроенным усилителем) к гнездам для громкоговорителей может привести к повреждению аппарата.*
- *Во избежание неправильной работы аппарата не используйте встроенные в автомобиль провода громкоговорителей, если используется общий отрицательный провод (–) для правого и левого громкоговорителей.*
- *Не подсоединяйте друг к другу провода громкоговорителей аппарата.*

Примечание относительно подсоединения
Если громкоговоритель и усилитель подсоединены неправильно, на дисплее отобразится надпись "FAILURE". В этом случае проверьте правильность подсоединения громкоговорителя и усилителя.

Схема підключення 3

A Для AMP REMOTE IN додаткового підсилювач потужності
Це підключення використовується лише для підсилювачів. Підключення будь-якої іншої системи може пошкодити пристрій.

B Для інтерфейсного кабелю телефону в автомобілі

Увага!

Якщо антена з електроприводом не має релейної стійки, підключення цього пристрою за допомогою кабелю живлення з комплекту ③ може пошкодити антену.

Примітка щодо кабелю керування та кабелю постачання живлення
- *Кабель керування антеною з електроприводом (синій) постачає +12 В постійної напруги за ввімкнення тюнера або під час активації функції AF (Alternative Frequency) (альтернативна частота) або TA (Traffic Announcement) (повідомлення про ситуацію на дорогах).*
- *Якщо ваш автомобіль оснащено вбудованою антеною FM/MW/LW на задньому/боковому склі, підключіть кабель керування антеною (синій) або додатковий кабель підключення живлення (червоний) до роз'єму живлення наявного антенного підсилювача. Для отримання детальної інформації зверніться до свого дилера з продажу.*
- *Антену з електроприводом без релейної стійки не можна використовувати з цим пристроєм.*

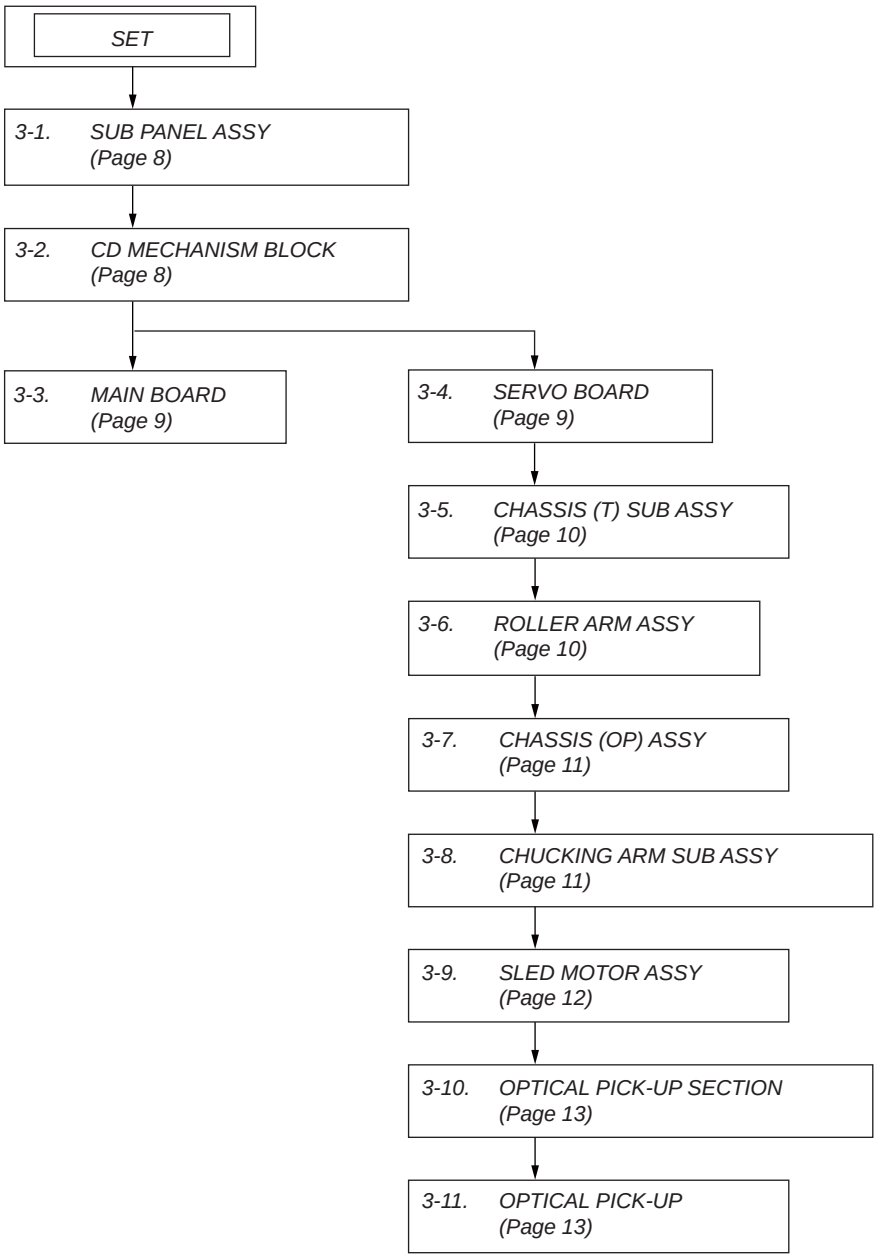
Підключення запам'ятовувальної системи
Якщо підключено жовтий кабель постачання живлення, живлення завжди постачатиметься до запам'ятовувальної схеми навіть за вимкненого запалення.

Примітка щодо підключення динаміка
- *Перед підключенням динаміків вимкніть пристрій.*
- *Використовуйте динаміки з повним опором від 4 до 8 Ом і з відповідною припустимою вхідною потужністю, щоб уникнути їх пошкодження.*
- *Не підключайте роз'єми динаміків до корпусу автомобіля і не з'єднуйте роз'єми правого і лівого динаміка.*
- *Не підключайте заземлений кабель цього пристрою до від'ємного (–) роз'єму динаміка.*
- *Не намагайтеся підключити динаміки паралельно.*
- *Підключайте лише пасивні динаміки. Підключення активних динаміків (із вбудованим підсилювачем) до роз'ємів динаміків може пошкодити пристрій.*
- *Щоб уникнути несправної роботи пристрою, не використовуйте вбудований кабель динаміка, встановлений в автомобілі, якщо пристрій використовує спільно негативний (–) кабель для правого та лівого динаміків.*
- *Не підключайте кабелі динаміка пристрою один до одного.*

Примітка щодо підключення
Якщо динамік і підсилювач не підключено належним чином, на дисплеї відобразиться «FAILURE» (помилка). У такому випадку переконайтеся, що динамік і підсилювач підключено належним чином.

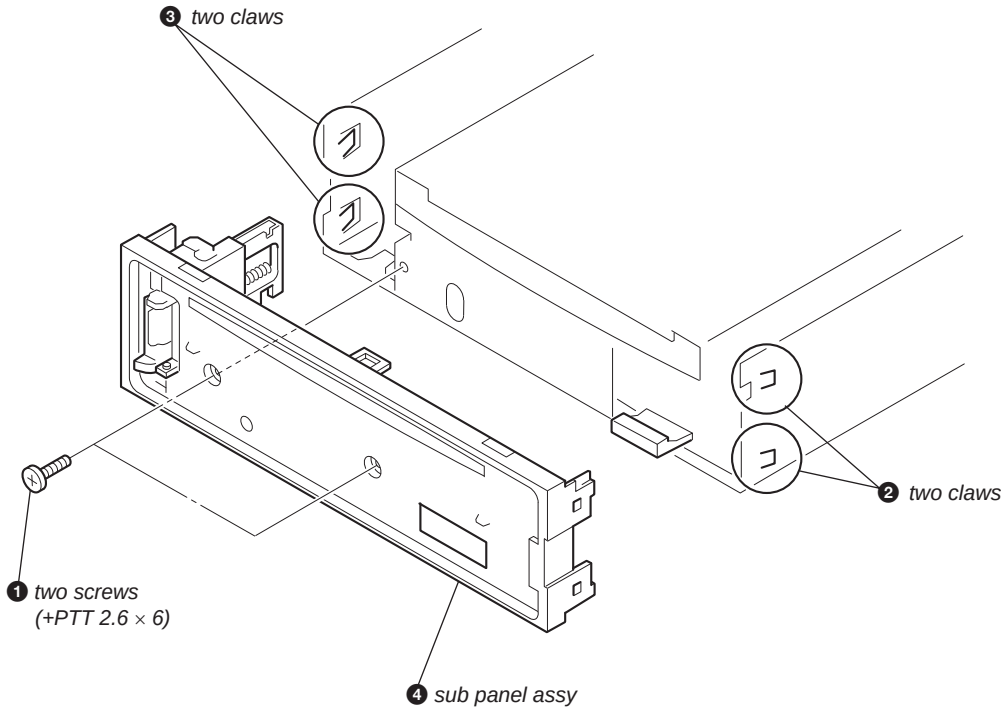
SECTION 3
DISASSEMBLY

- This set can be disassembled in the order shown below.

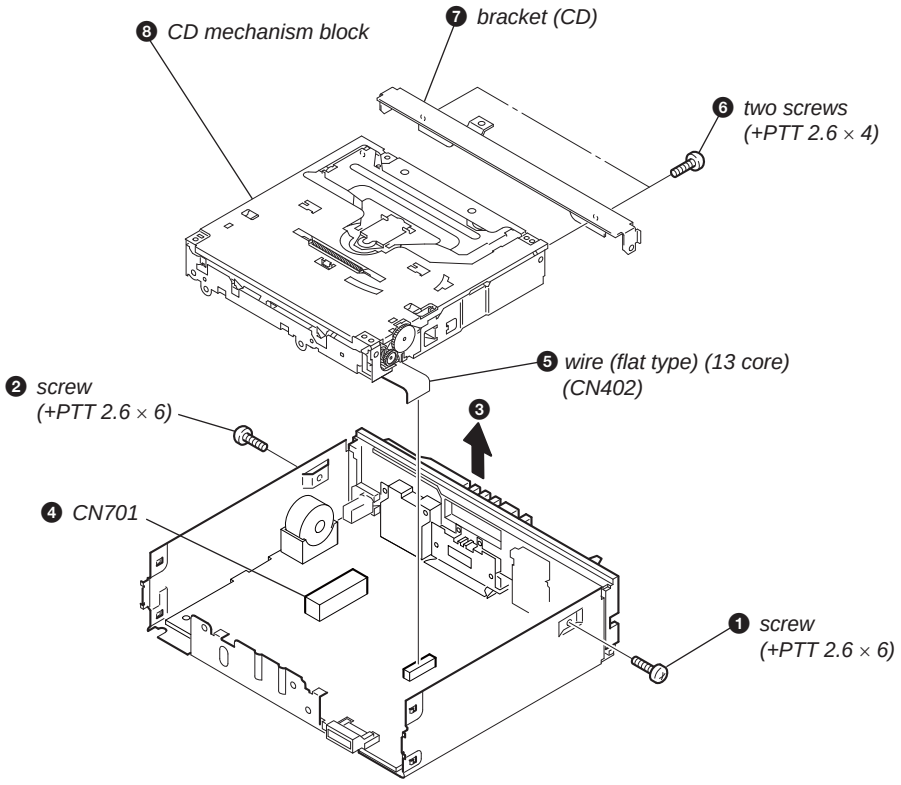


Note: Follow the disassembly procedure in the numerical order given.

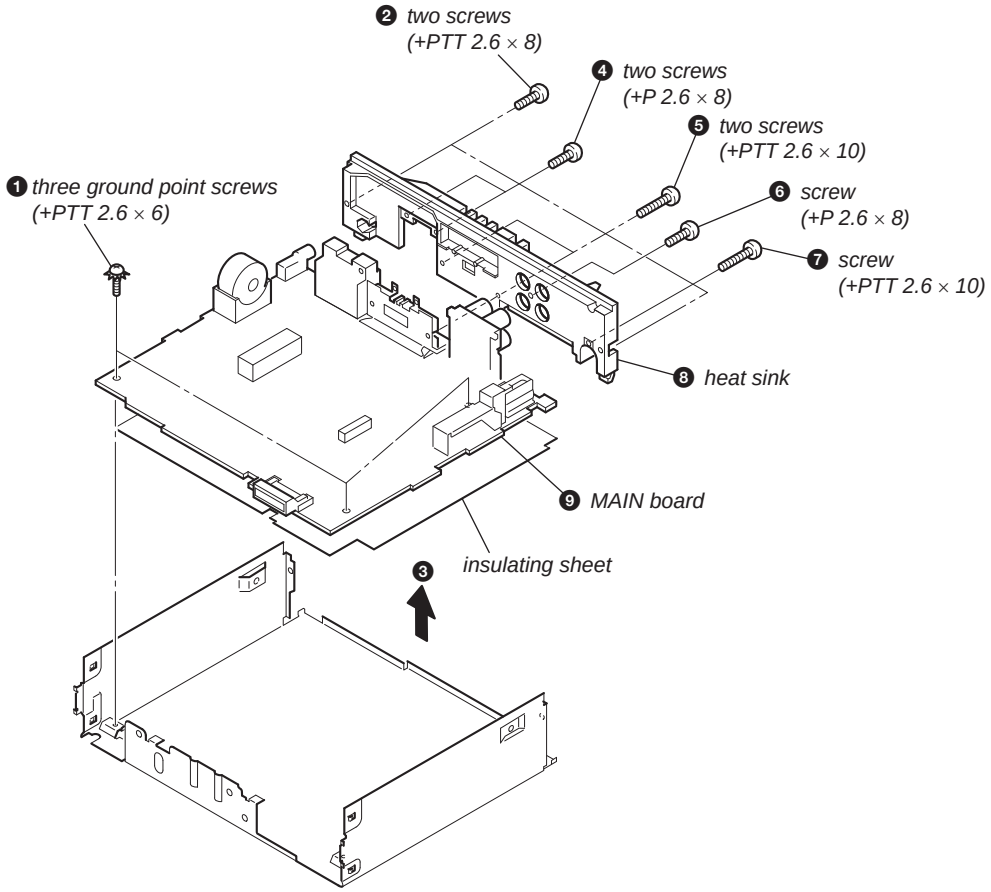
3-1. SUB PANEL ASSY



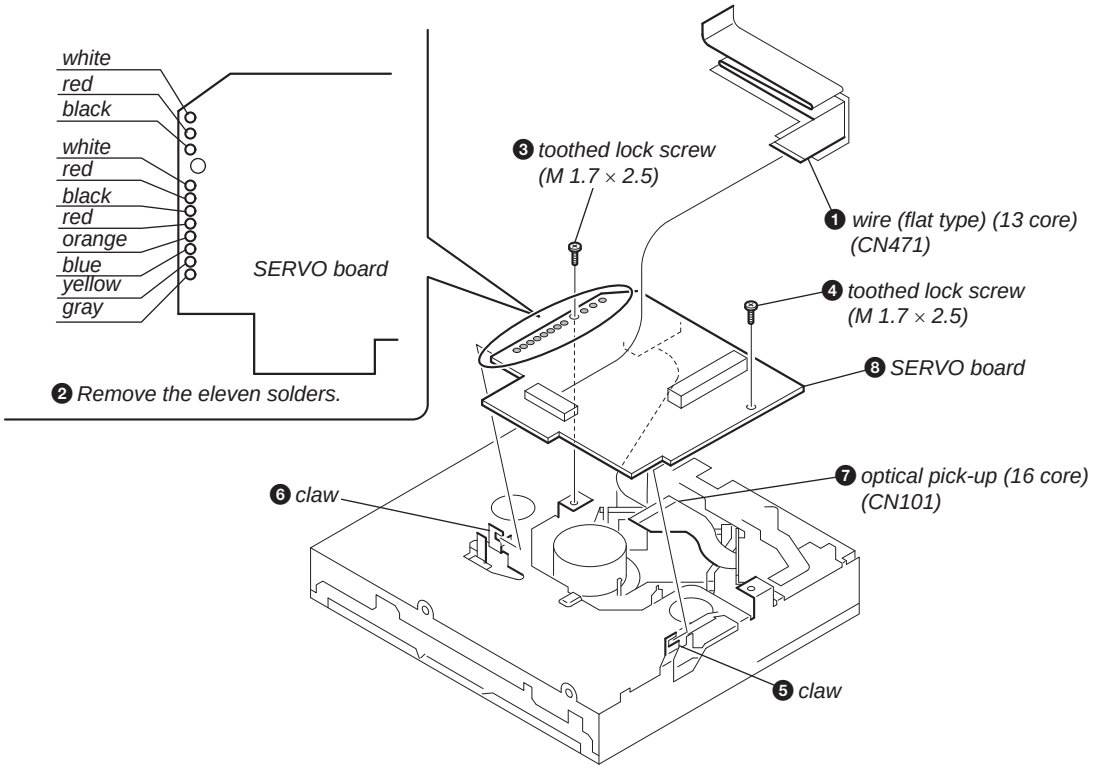
3-2. CD MECHANISM BLOCK



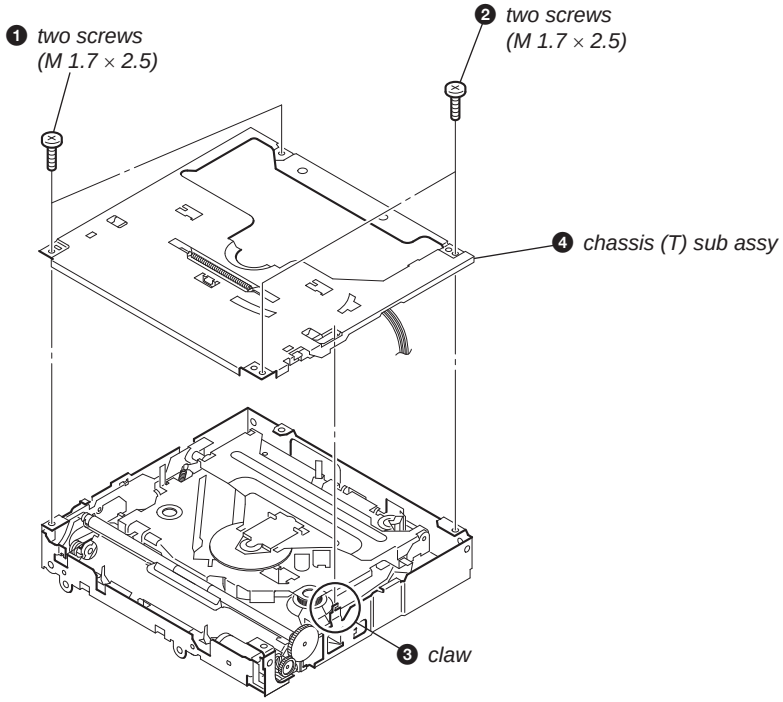
3-3. MAIN BOARD



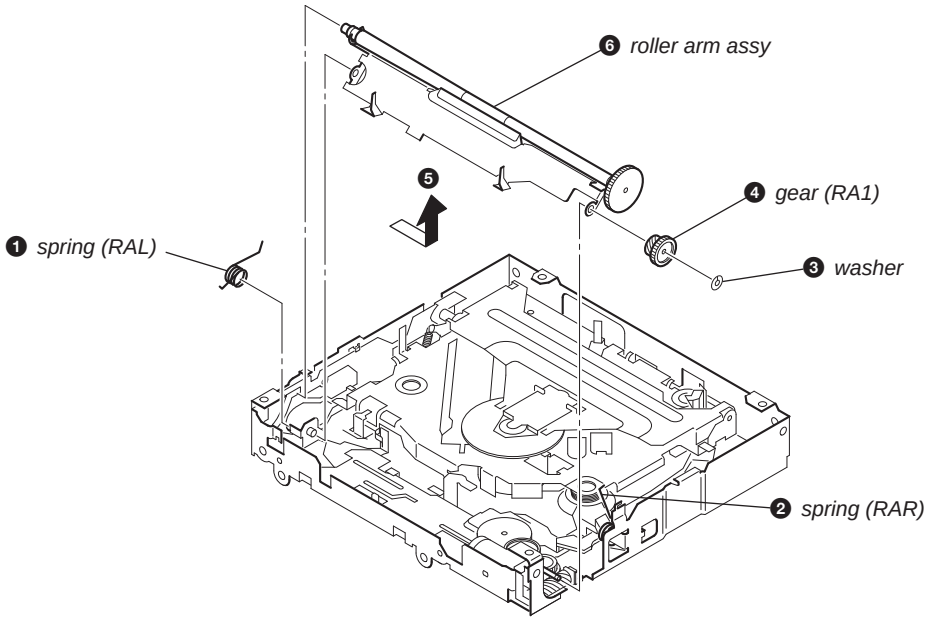
3-4. SERVO BOARD



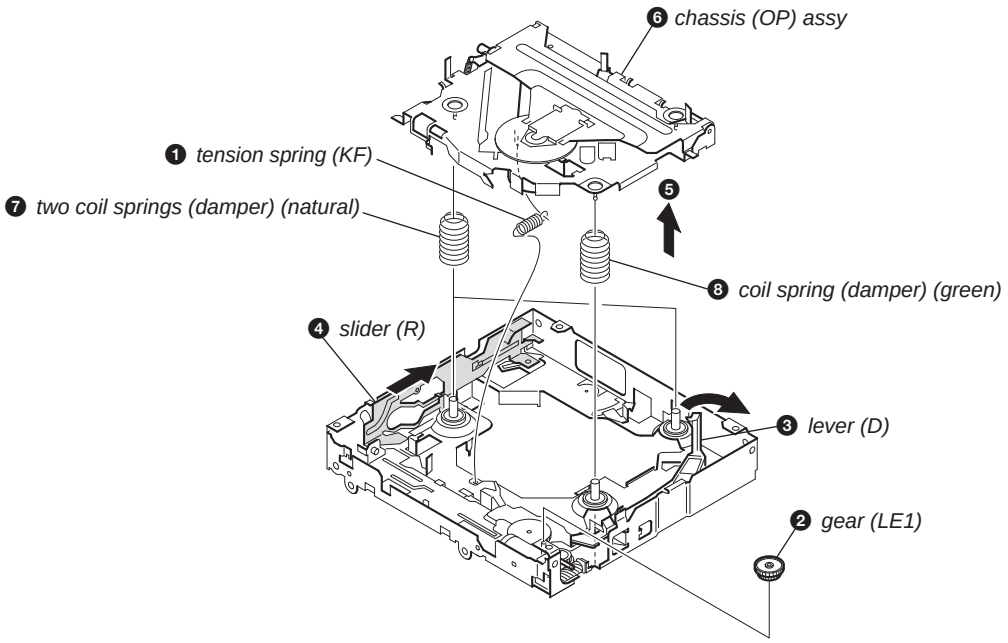
3-5. CHASSIS (T) SUB ASSY



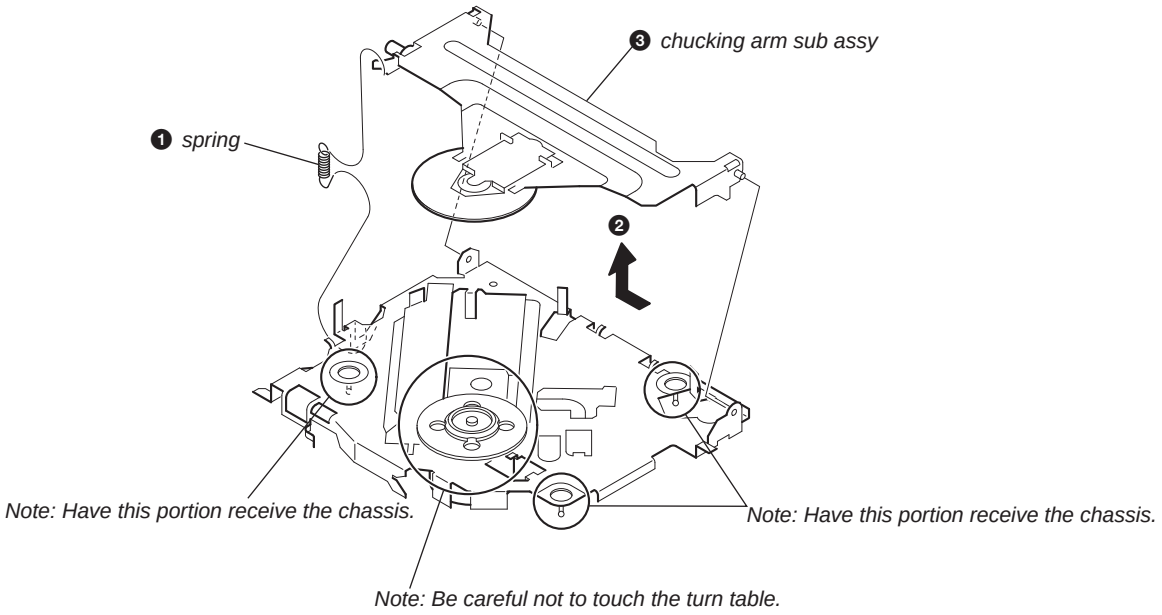
3-6. ROLLER ARM ASSY



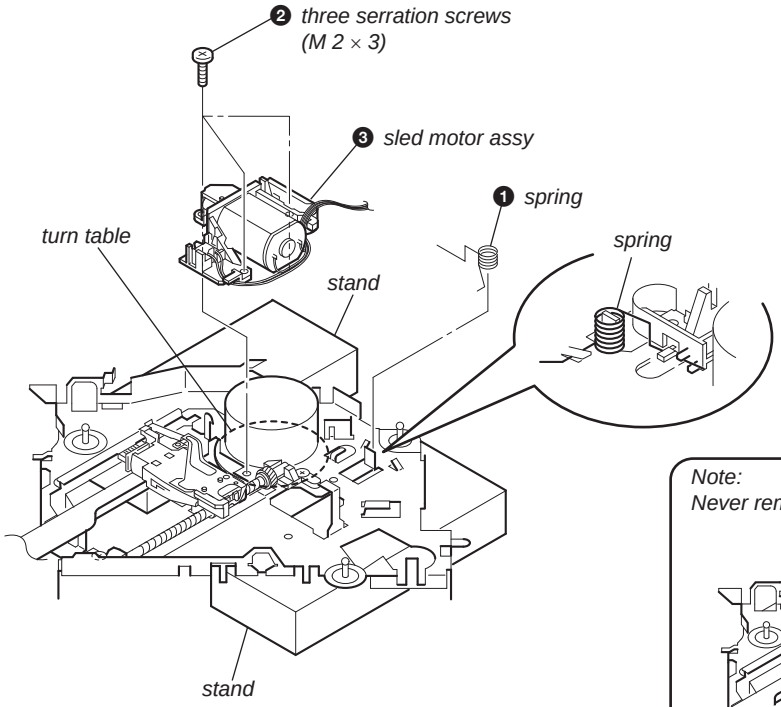
3-7. CHASSIS (OP) ASSY



3-8. CHUCKING ARM SUB ASSY

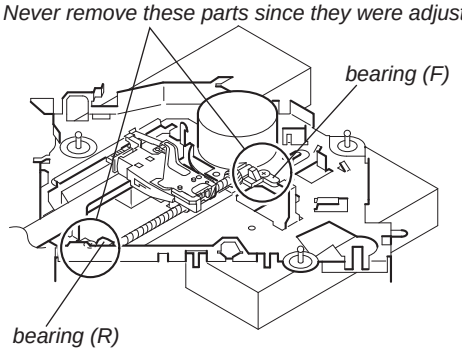


3-9. SLED MOTOR ASSY

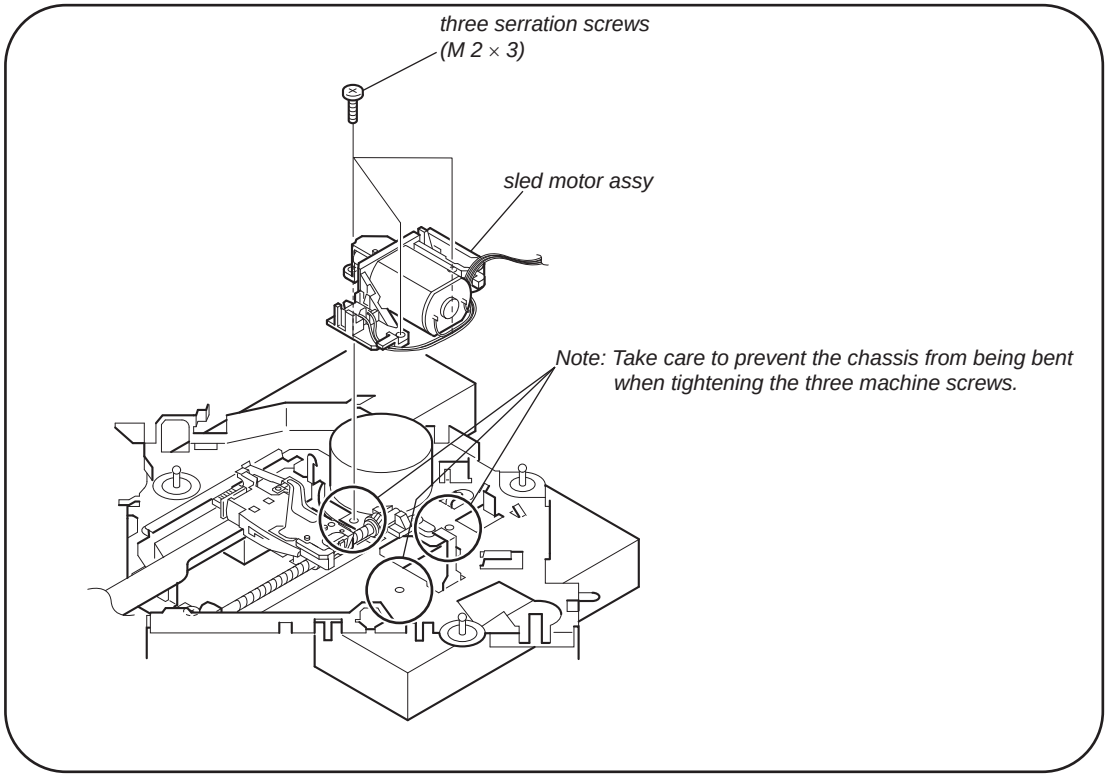


Note: Place the stand with care not to touch the turn table.

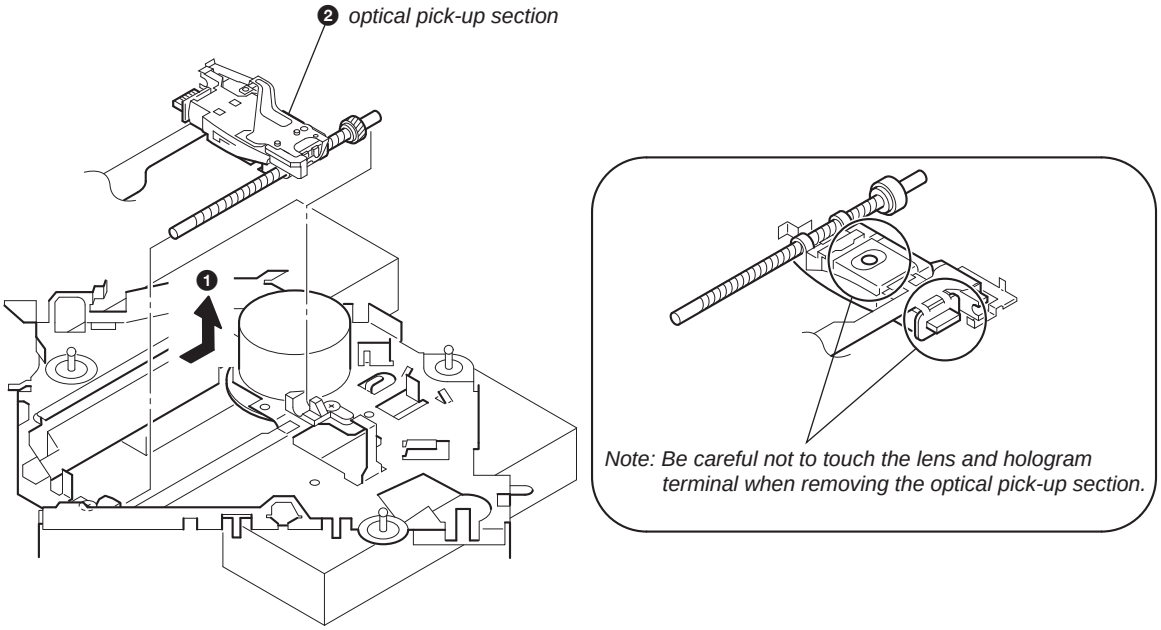
Note:
Never remove these parts since they were adjusted.



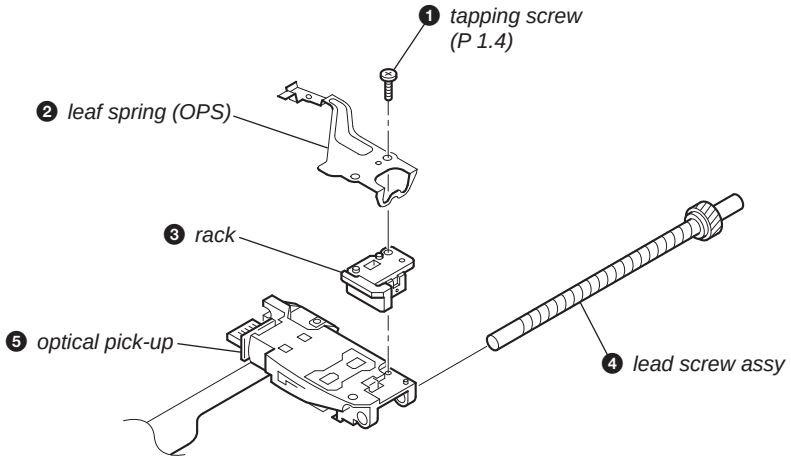
Note for Assembly



3-10. OPTICAL PICK-UP SECTION



3-11. OPTICAL PICK-UP



SECTION 4
DIAGRAMS

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

For Printed Wiring Boards.

Note:

- o——: Parts extracted from the component side.
- ———: Parts extracted from the conductor side.
- ○ : Through hole.
- ▭ : Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (SIDE B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (SIDE A)	Parts on the parts face side seen from the parts face are indicated.

For Schematic Diagrams.

Note:

- All capacitors are in µF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : Internal component.
- ▭ : Panel designation.

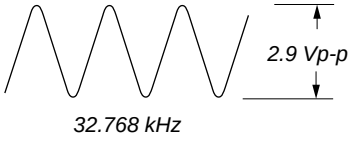
Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- ▬▬ : B+ Line.
- ▬ ▬ ▬ : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : FM
  ( ) : AM or MW
  < > : CD PLAY
  ∗ : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇨ : FM
  ➡ : AM or MW
  ⇨ : AUX
  ⇨ : USB

- **Waveforms**

– MAIN Board –

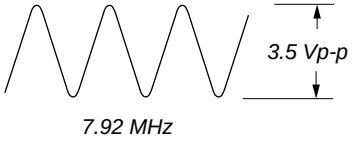
① IC501 ⑪ (XOUT)



32.768 kHz

1 V/DIV, 20 µsec/DIV

② IC501 ⑬ (OSCOUT)



7.92 MHz

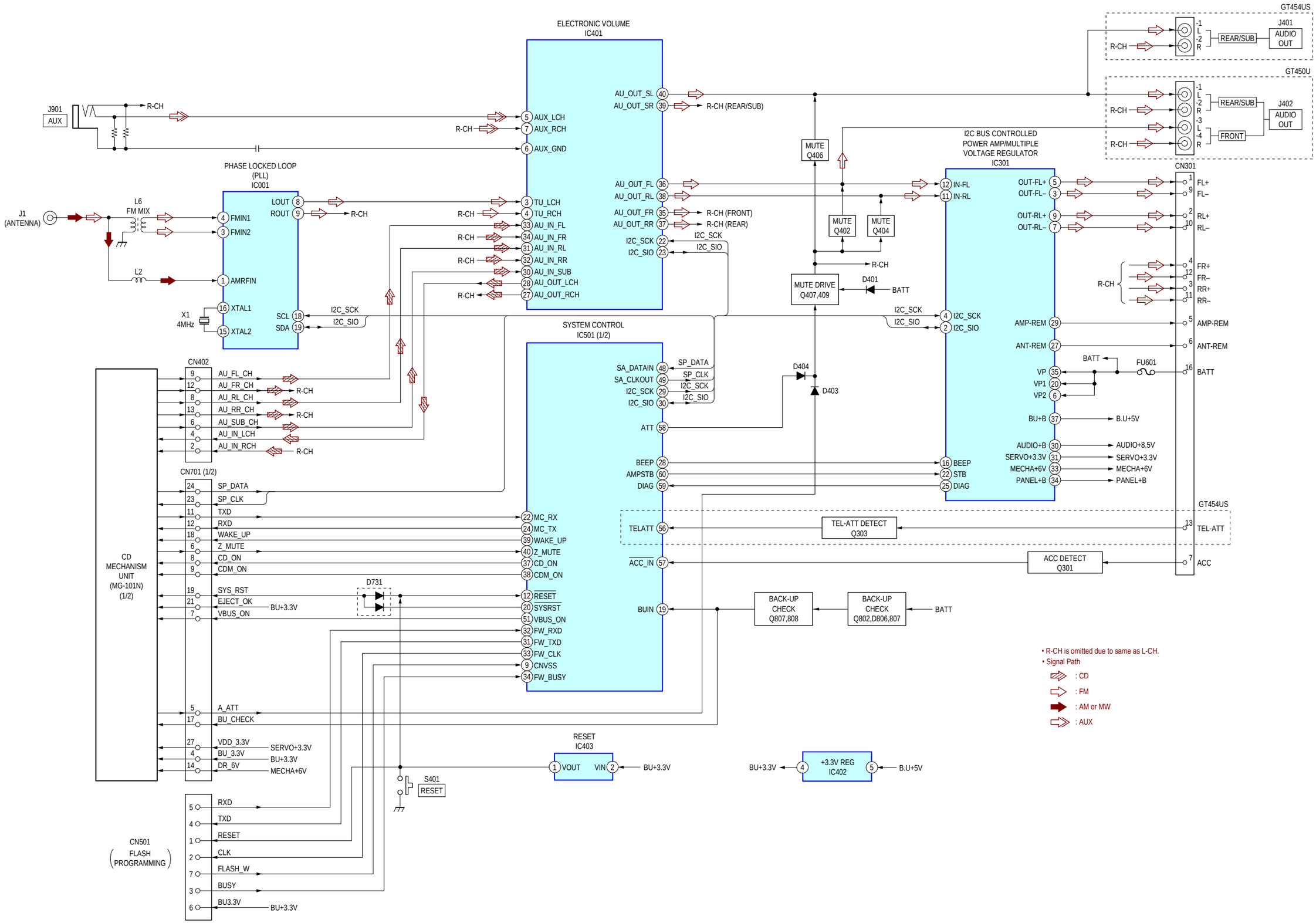
2 V/DIV, 50 nsec/DIV

③ IC001 ⑯ (XTAL1)

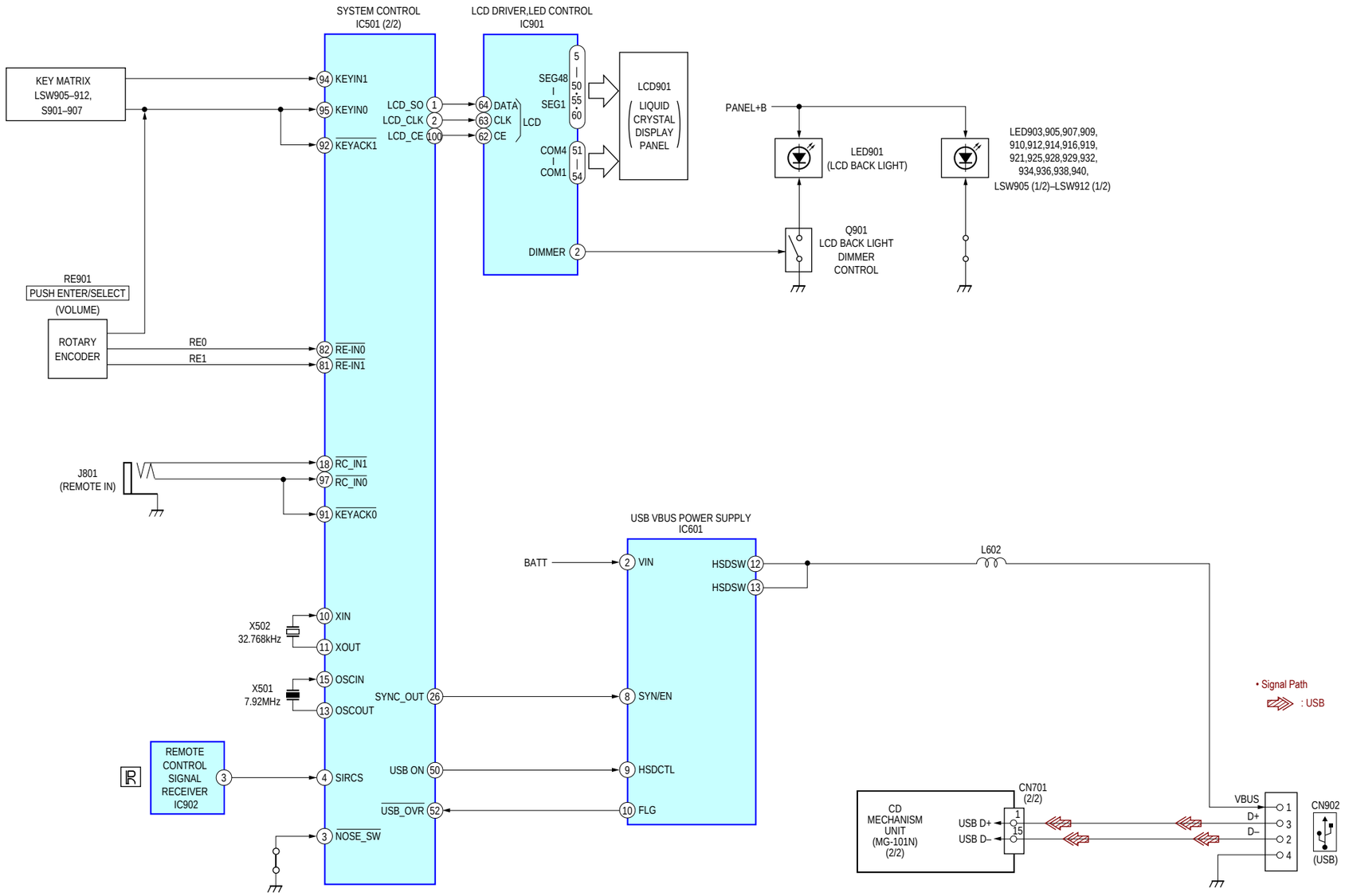
4 MHz

0.05 V/DIV, 50 nsec/DIV

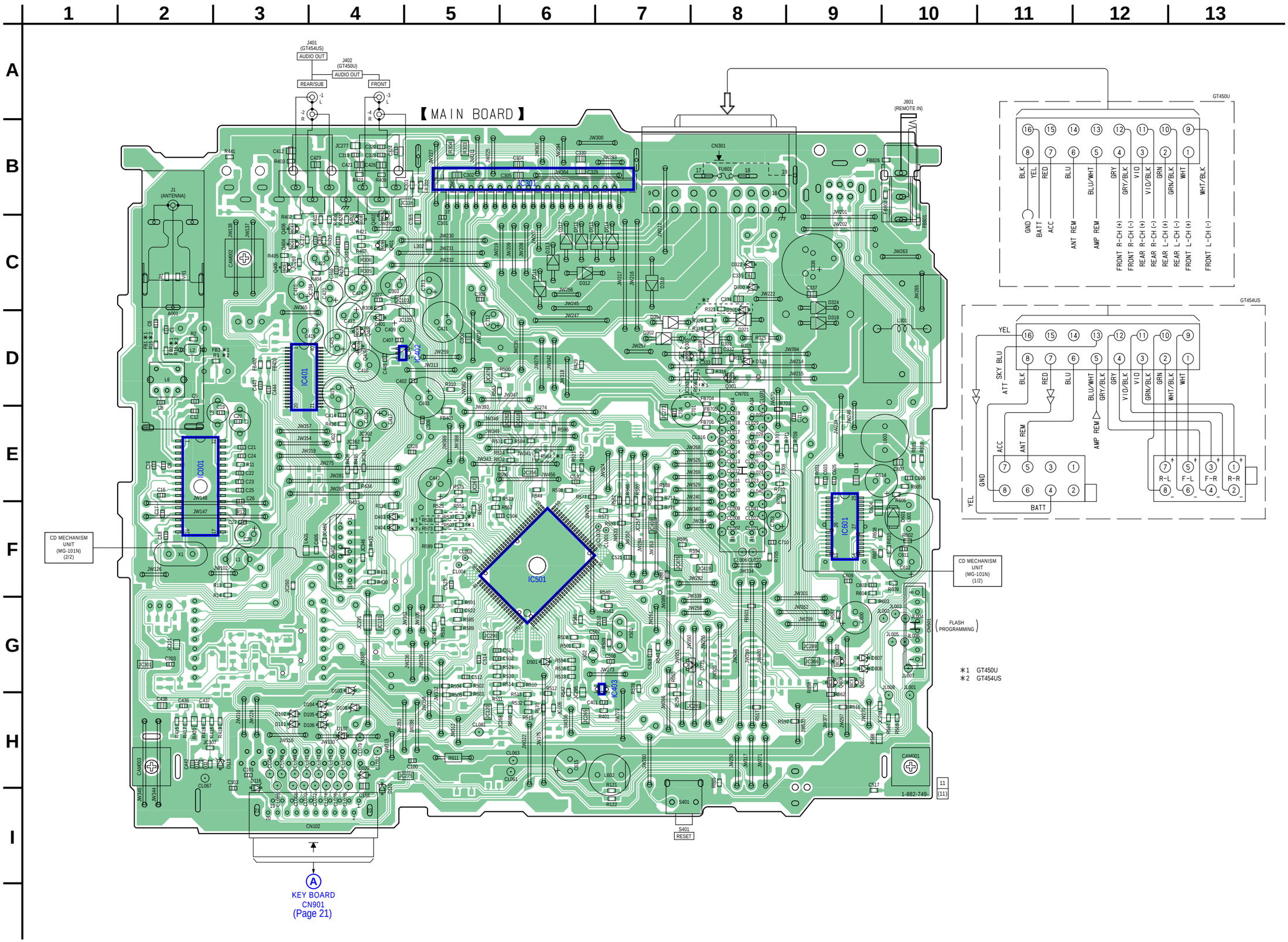
4-1. BLOCK DIAGRAM – MAIN Section –



4-2. BLOCK DIAGRAM – DISPLAY Section –

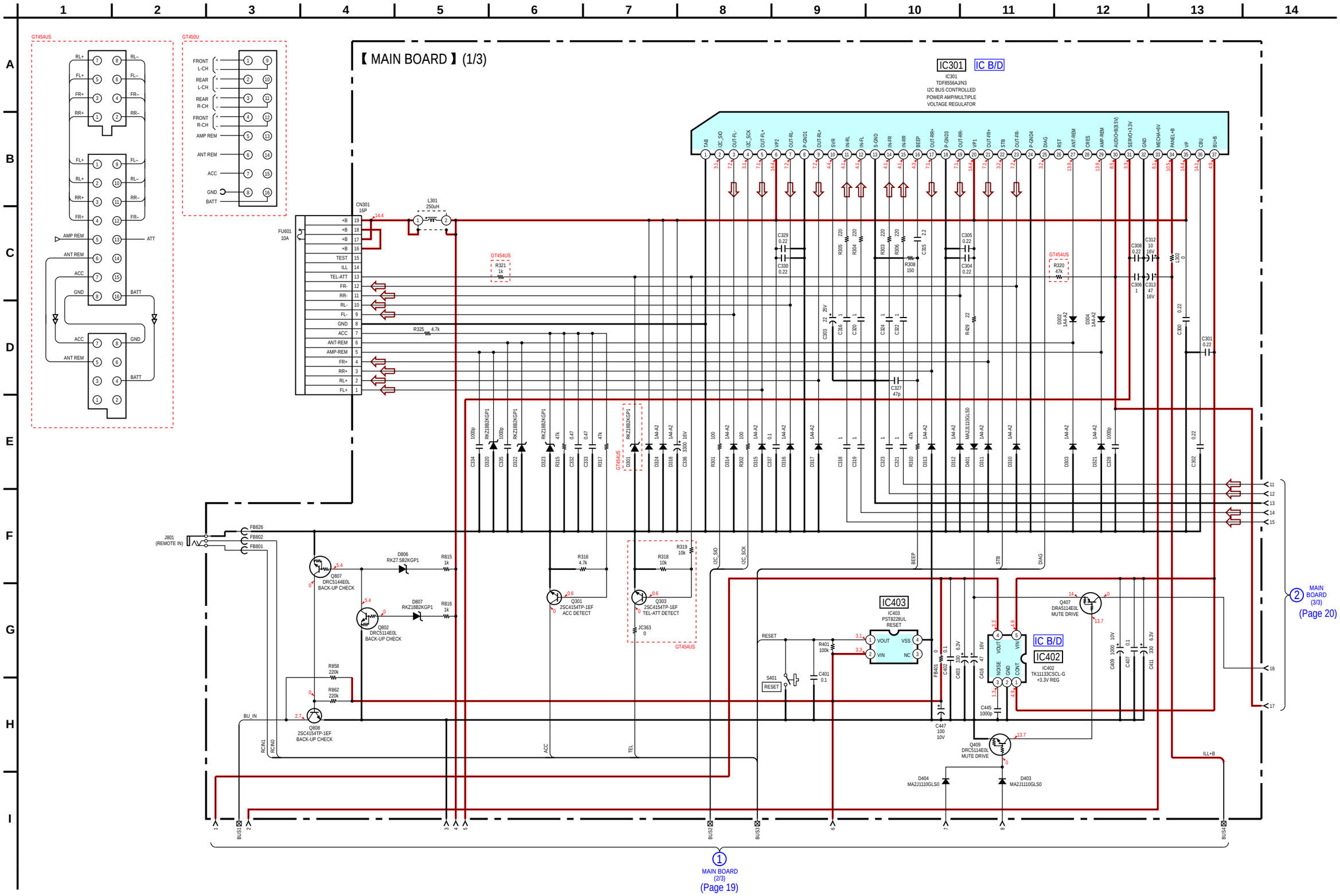


4-3. PRINTED WIRING BOARD – MAIN Section – • : Uses unleaded solder.



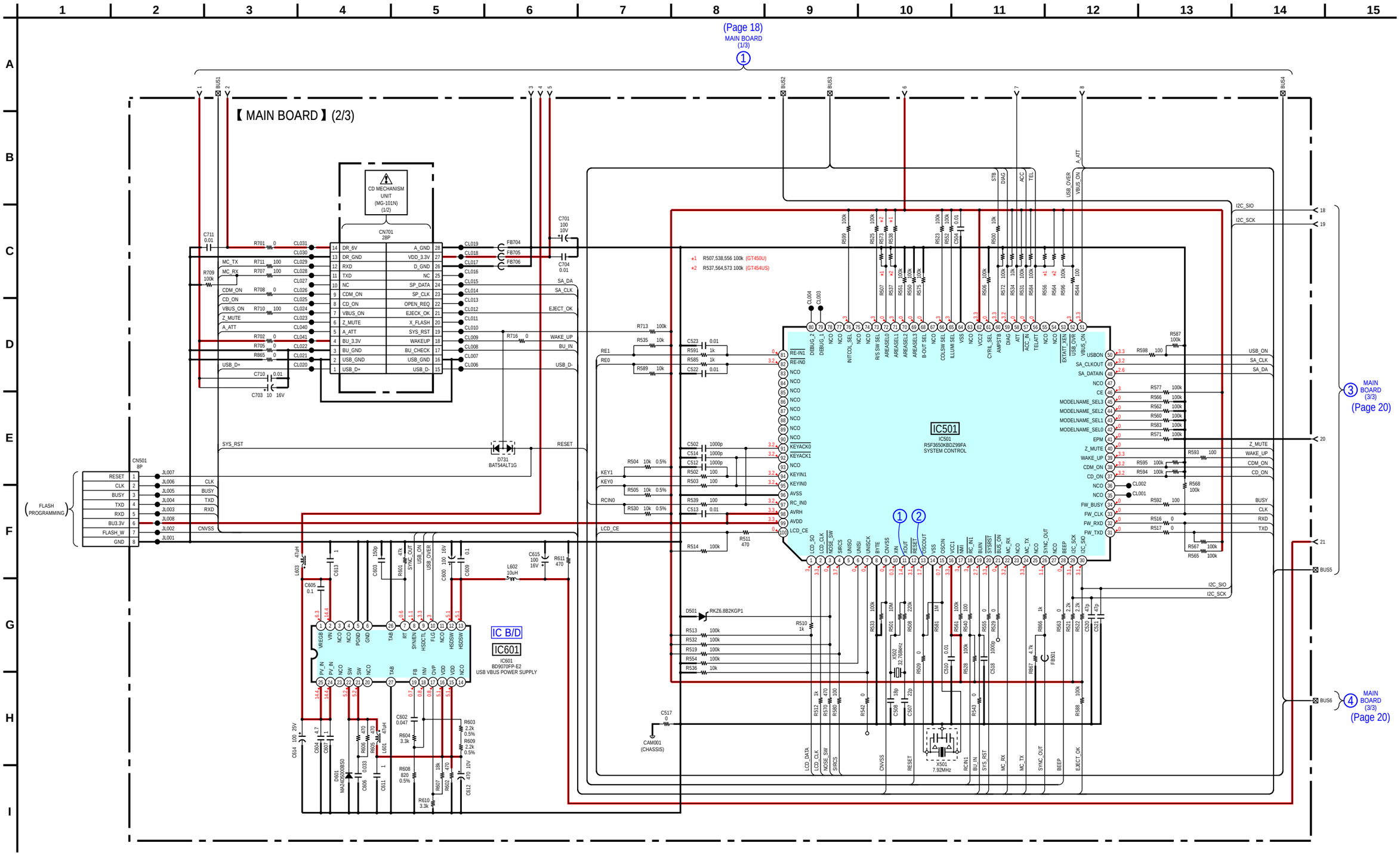
4-4. SCHEMATIC DIAGRAM – MAIN Section (1/3) –

• See page 23 for IC Block Diagrams.



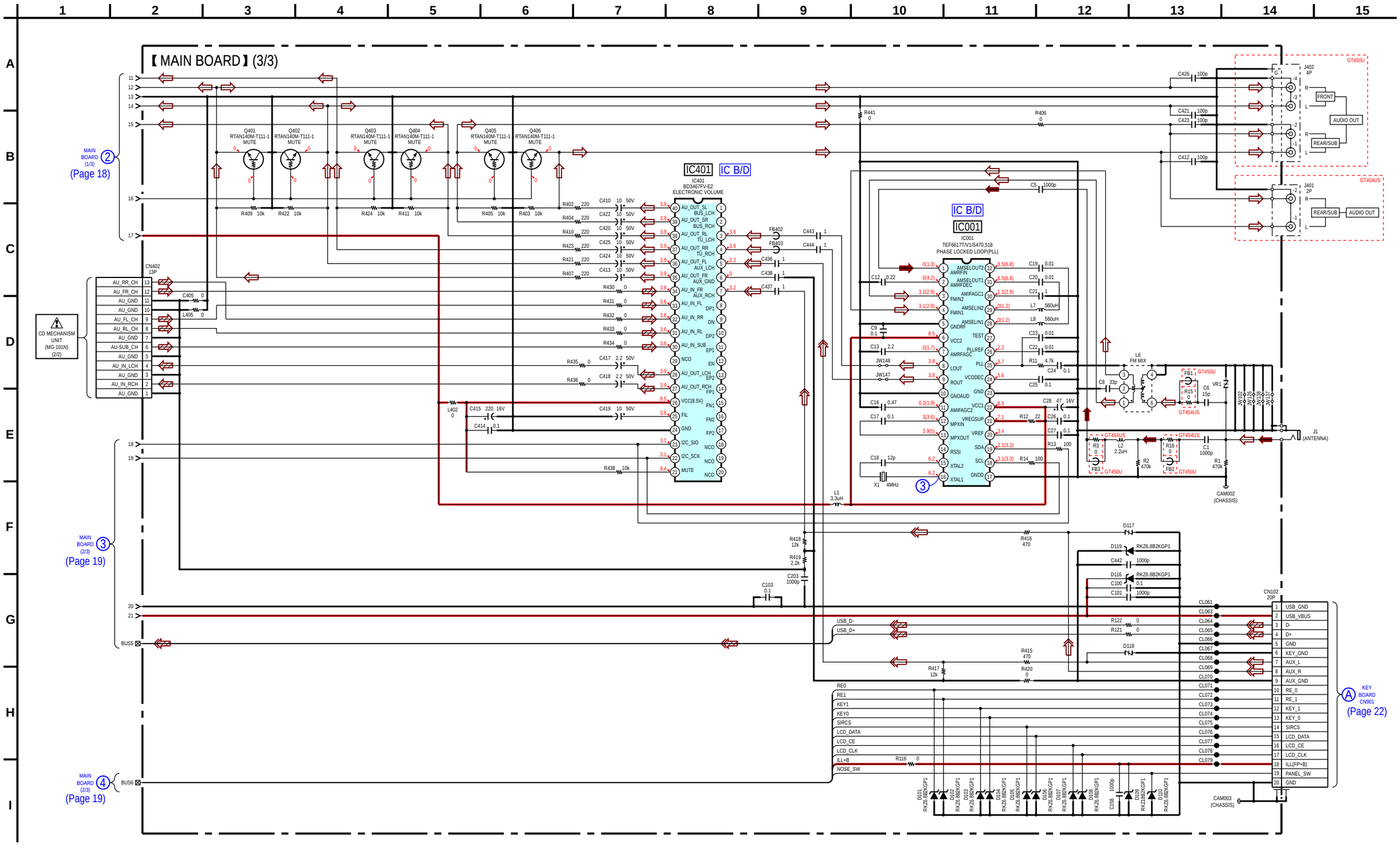
4-5. SCHEMATIC DIAGRAM – MAIN Section (2/3) –

• See page 14 for Waveforms. • See page 24 for IC Block Diagrams. • See page 26 for IC Pin Function Description of IC501.

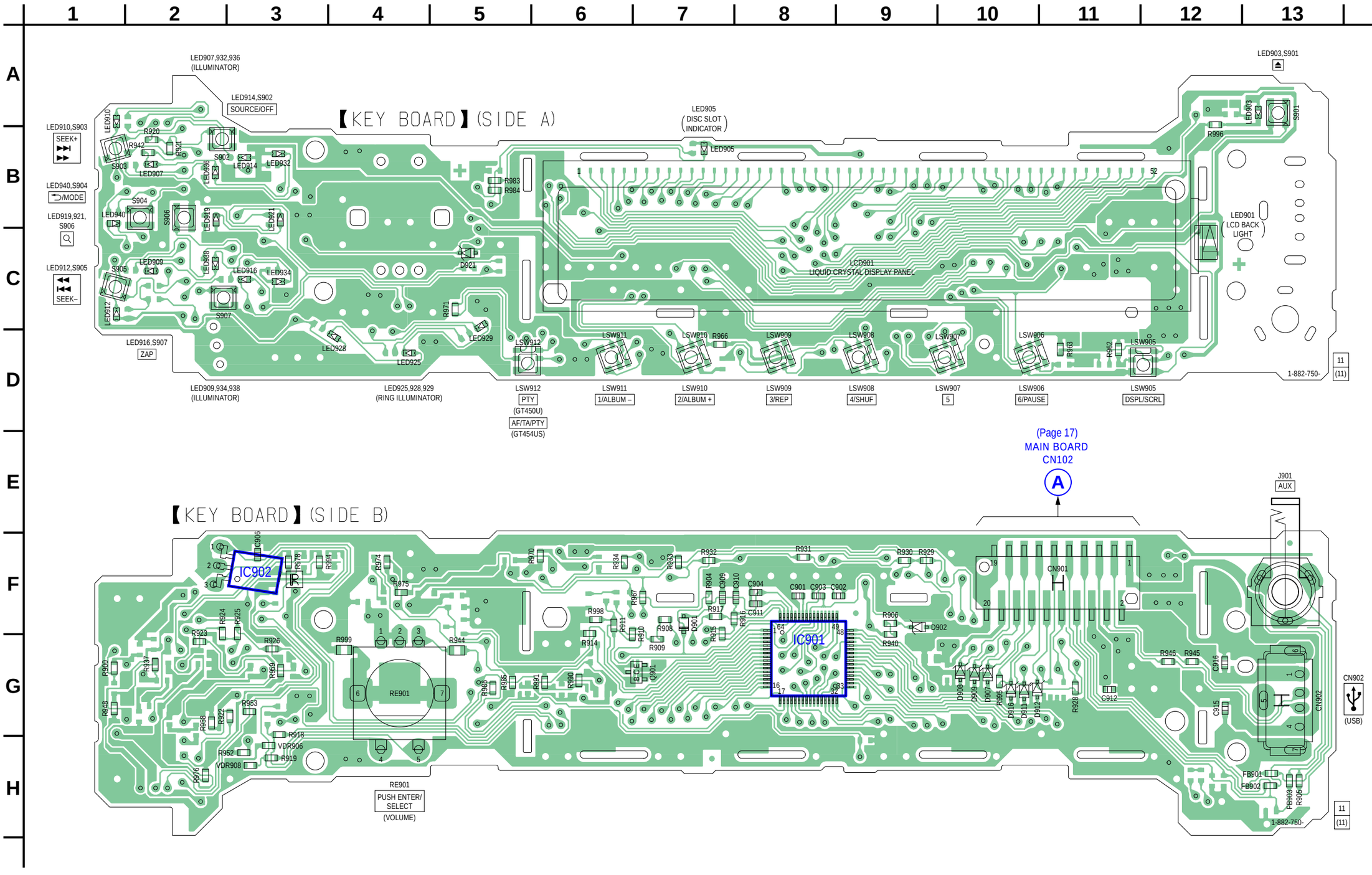


4-6. SCHEMATIC DIAGRAM – MAIN Section (3/3) –

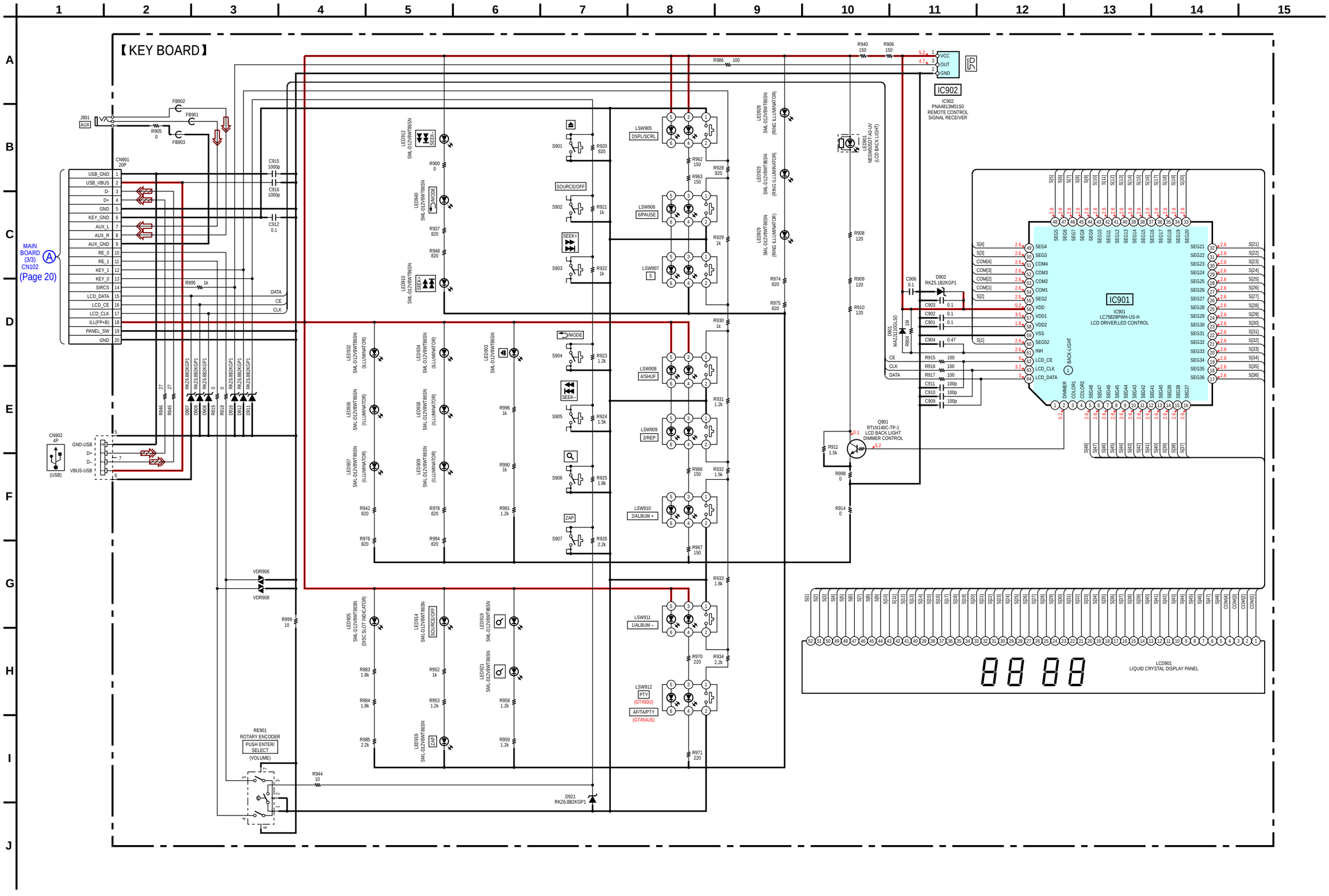
• See page 14 for Waveforms. • See page 24 for IC Block Diagrams.



4-7. PRINTED WIRING BOARD – KEY Section – • : Uses unleaded solder.

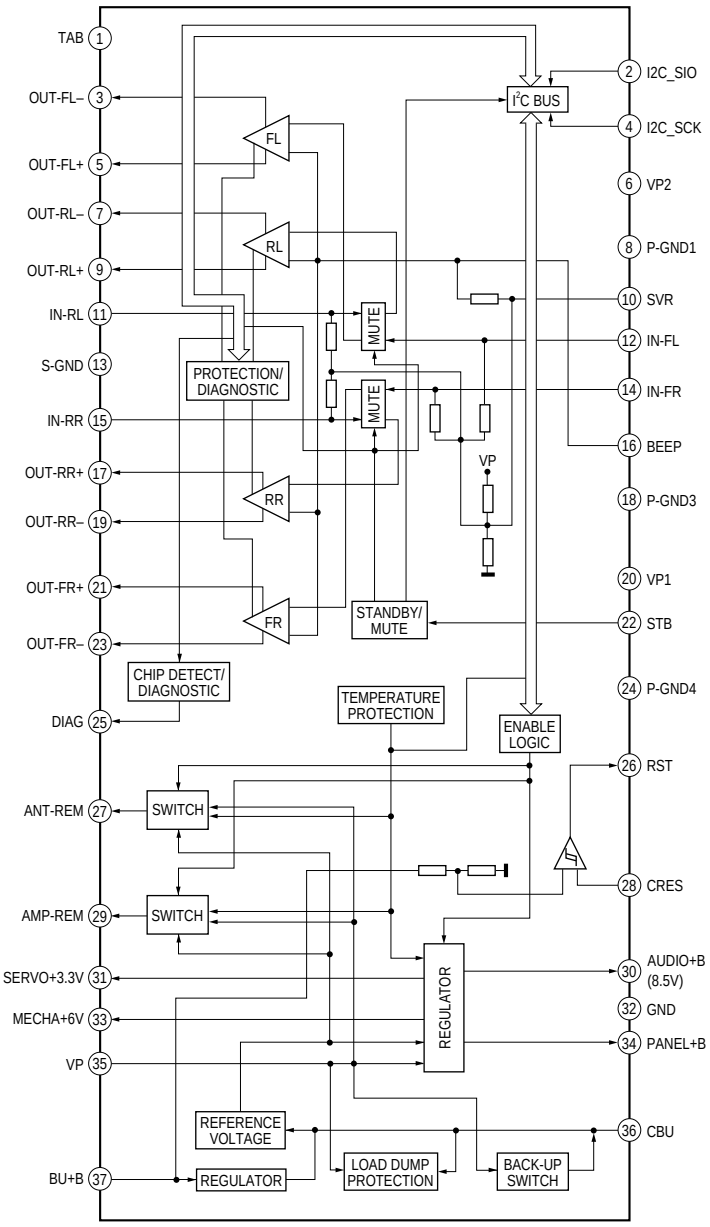


4-8. SCHEMATIC DIAGRAM – KEY Section –

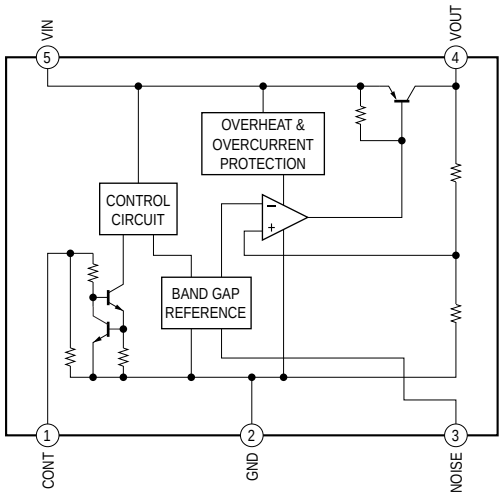


- **IC Block Diagrams**

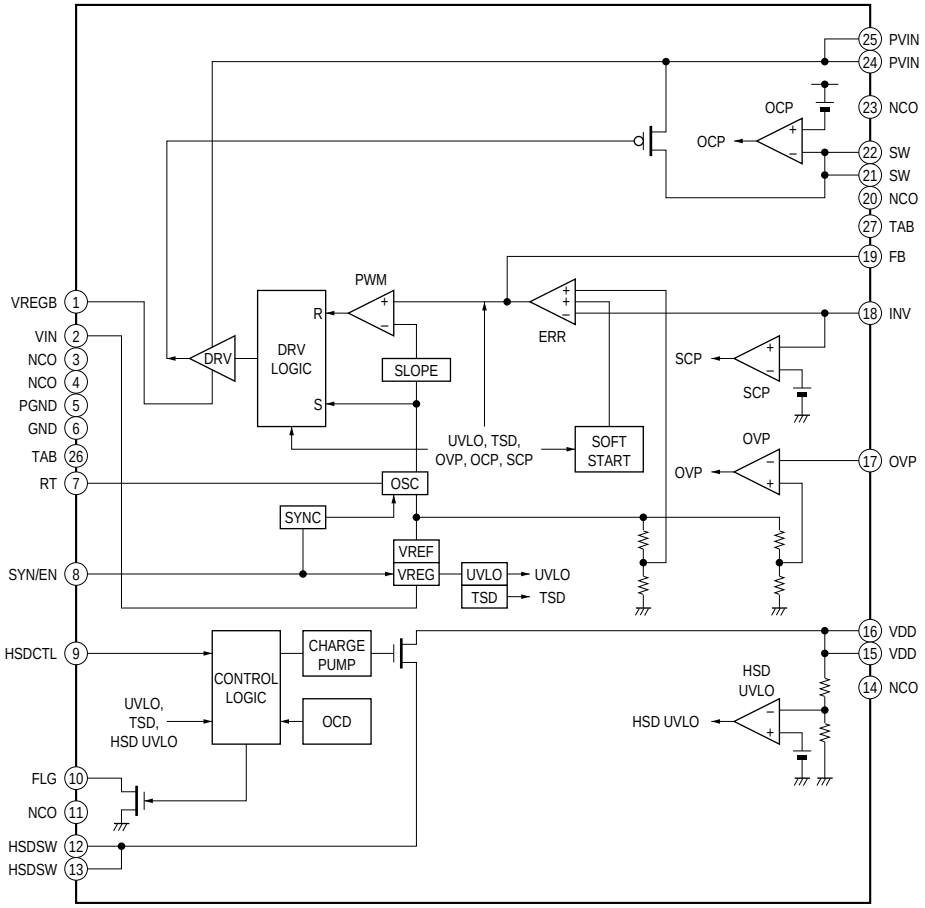
IC301 TDF8556AJ/N3 (MAIN Board (1/3))



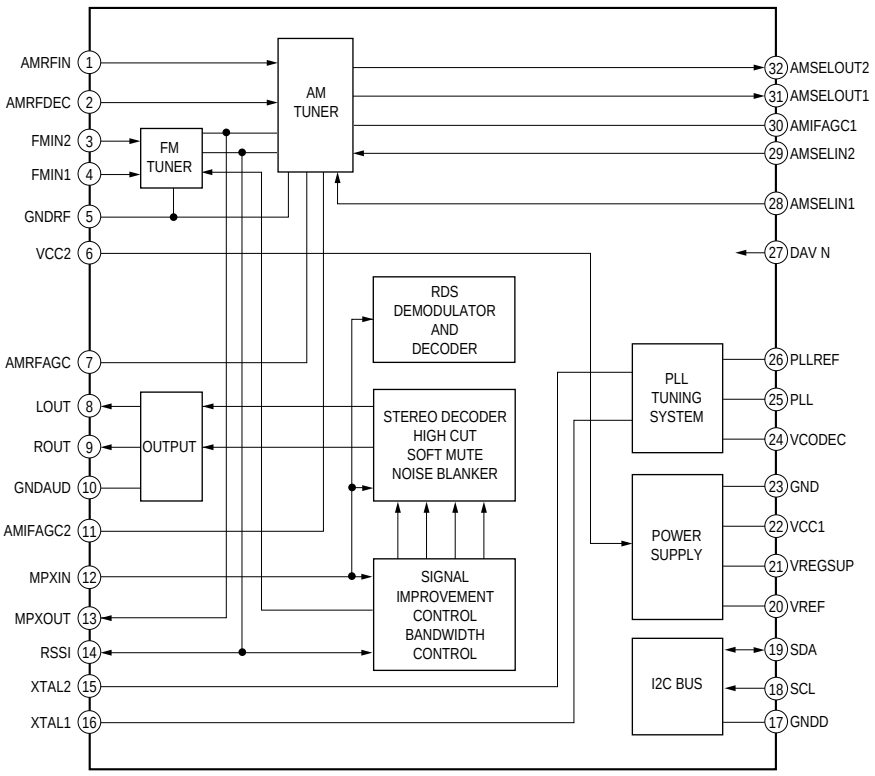
IC402 TK11133CSCL-G (MAIN Board (1/3))



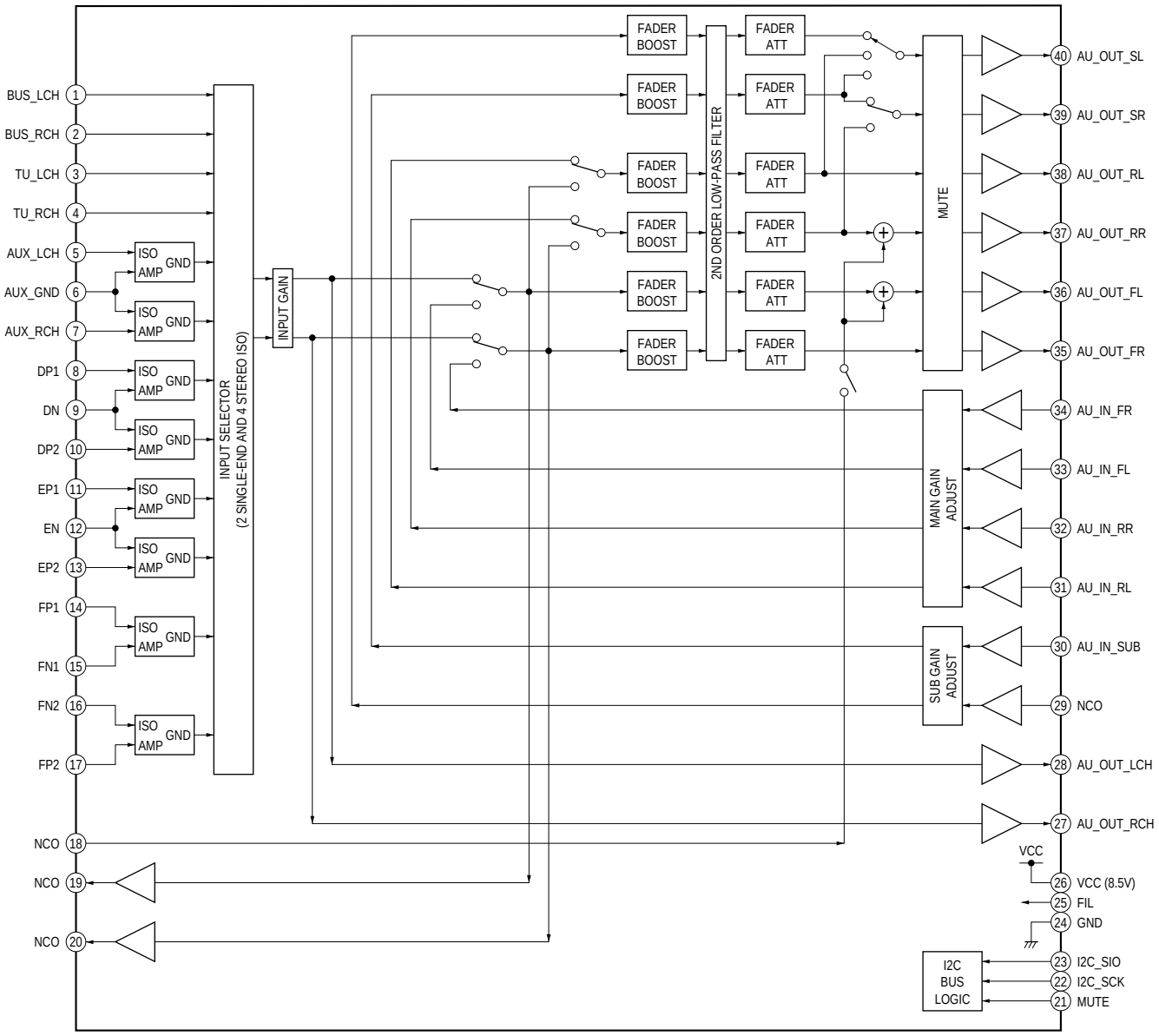
IC601 BD9070FP-E2 (MAIN Board (2/3))



IC001 TEF6617T/V1/S470,518 (MAIN Board (3/3))



IC401 BD3467FV-E2 (MAIN Board (3/3))



• **IC Pin Function Description**

MAIN BOARD (2/3) IC501 R5F3650KBDZ99FA (SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Description
1	LCD_SO	O	Serial data output for LCD driver
2	LCD_CLK	O	Serial clock signal output for LCD driver
3	$\overline{\text{NOSE\_SW}}$	I	Front panel detach detect signal input (Fixed at L in this set)
4	SIRCS	I	SIRCS signal input
5	UNISO	O	SONY BUS serial data output (Not used in this set)
6	UNISI	I	SONY BUS serial data input (Fixed at L in this set)
7	UNISCK	O	SONY BUS serial clock signal output (Fixed at L in this set)
8	BYTE	I	External data bus width select signal input (Connect to VSS in this set)
9	CNVSS	I	Flash writer IF (CNVSS) signal input (L: normally operation, H: flash write)
10	XIN	I	Low speed operation clock signal input (32.768 kHz)
11	XOUT	O	Low speed operation clock signal output (32.768 kHz)
12	$\overline{\text{RESET}}$	I	System reset signal input
13	OSCOUT	O	High speed operation clock signal output (7.92 MHz)
14	VSS	—	Ground
15	OSCIN	I	High speed operation clock signal input (7.92 MHz)
16	VCC1	—	Power supply pin (+3.3 V)
17	$\overline{\text{NMI}}$	I	Non-maskable interrupt signal input (Fixed at H in this set)
18	$\overline{\text{RC\_IN1}}$	I	Rotary commander shift key signal input
19	BUIN	I	Backup power supply detect signal input
20	$\overline{\text{SYSRST}}$	O	System reset signal output
21	$\overline{\text{BUS\_ON}}$	O	VBUS power control signal output (Not used in this set)
22	MC_RX	I	MC-BUS communication MECHA (CMX-101N) TX signal input
23	NCO	O	Not used. (Open)
24	MC_TX	O	MC-BUS communication MECHA (CMX-101N) RX signal output
25	NCO	O	Not used. (Open)
26	SYNC_OUT	O	DD converter frequency control signal output
27	NCO	O	Not used. (Open)
28	BEEP	O	Beep signal output for the power amplifier IC
29	I2C_SCK	O	IIC communication serial clock signal output
30	I2C_SIO	I/O	IIC communication serial data input/output
31	FW_TXD	O	Flash writer IF (serial data) output
32	FW_RXD	I	Flash writer IF (serial data) input
33	FW_CLK	I	Flash writer IF (serial clock) signal input
34	FW_BUSY	O	Flash writer IF (busy) signal output
35, 36	NCO	O	Not used. (Open)
37	CD_ON	I	CD mechanism servo power supply control request signal input
38	CDM_ON	I	CD mechanism deck power supply control request signal input
39	WAKE_UP	O	CD mechanism deck micon wake up signal output
40	Z_MUTE	I	Z mute signal input
41	EPM	O	EPM signal output (Fixed at L in this set)
42	MODELNAME_SEL0	I	Model name select signal input 0 (Fixed at L in this set)
43	MODELNAME_SEL1	I	Model name select signal input 1 (Fixed at L in this set)
44	MODELNAME_SEL2	I	Model name select signal input 2 (Fixed at L in this set)
45	MODELNAME_SEL3	I	Model name select signal input 3 (Fixed at L in this set)
46	CE	O	CE signal output (Fixed at H in this set)
47	NCO	O	Not used. (Open)
48	SA_DATAIN	I	Paradisso spectrum analyzer serial data input
49	SA_CLKOUT	O	Paradisso spectrum analyzer serial clock signal output
50	USBON	O	USB over current detect IC control signal output
51	VBUS_ON	I	VBUS power supply control signal input (L: VBUS OFF, H: VBUS ON)
52	$\overline{\text{USB\_OVR}}$	I	USB over current detect signal input
53	$\overline{\text{EXTATT\_XEN}}$	O	L is sent when electronic volume IC has the status of CD/USB (H is sent when it has the status of other source) (Not used in this set)
54, 55	NCO	O	Not used. (Open)
56	TELATT	I	Telephone attenuator detect signal input (Russian model)
57	$\overline{\text{ACC\_IN}}$	I	Accessory power supply detect signal input
58	ATT	O	Audio mute control signal output

Pin No.	Pin Name	I/O	Description
59	DIAG	I	Condition signal input from power amp IC
60	AMPSTB	O	Standby signal output for power regulator IC
61	CYRIL_SEL	I	Cyril correspondance discrimination signal input (L: No correspondance) (Fixed at L in this set)
62	VCC2	—	Power supply pin (+3.3 V)
63	NCO	O	Not used. (Open)
64	VSS	—	Ground
65	ILLUMI SEL	I	Key illumination voltage setting signal input (Fixed at H in this set)
66	COLSW SEL	I	Key illumination color change function signal input (Fixed at H in this set)
67	NCO	O	Not used. (Open)
68	B-OUT SEL	I	Black out function setting signal input (L: without black out function)
69	AREASEL3	I	Destination setting pin 3 (Fixed at L in this set)
70	AREASEL2	I	Destination setting pin 2 (Fixed at L in this set)
71	AREASEL1	I	Destination setting pin 1
72	AREASEL0	I	Destination setting pin 0
73	R/S SW SEL	I	REAR/SUB select setting signal input (L: No switched) (Fixed at H in this set)
74, 75	NCO	O	Not used. (Open)
76	INITCOL_SEL	I	Key illumination initial color setting signal input (Fixed at H in this set)
77, 78	NCO	O	Not used. (Open)
79, 80	DEBUG_1, DEBUG_2	O	Not used. (Open)
81	$\overline{\text{RE-IN1}}$	I	Rotary encoder signal input 1
82	$\overline{\text{RE-IN0}}$	I	Rotary encoder signal input 0
83 to 90	NCO	O	Not used. (Open)
91	$\overline{\text{KEYACK0}}$	I	Key acknowledge detect signal input (Rotary commander)
92	$\overline{\text{KEYACK1}}$	I	Key acknowledge detect signal input (Front panel)
93	NCO	O	Not used. (Open)
94	KEYIN1	I	Key signal input 1
95	KEYIN0	I	Key signal input 0
96	AVSS	—	Ground for A/D converter
97	RC_IN0	I	Rotary commander key signal input
98	AVRH	—	A/D converter external reference power supply pin (+3.3 V)
99	AVDD	—	A/D converter power supply pin (+3.3 V)
100	LCD_CE	O	Chip enable signal output for LCD driver

SECTION 5
EXPLODED VIEWS

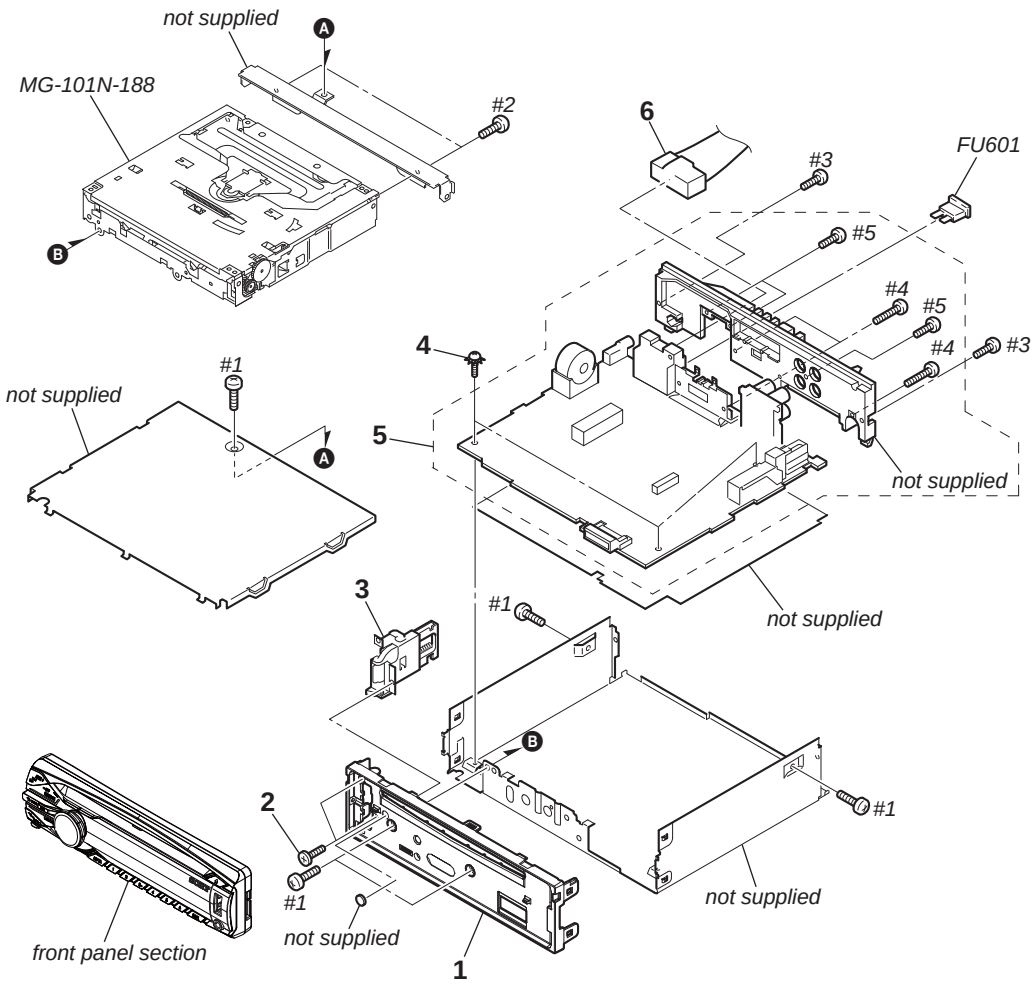
Note:

- -XX and -X mean standardized parts, so they may have some difference 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.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories are given in the last of the electrical parts list.

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

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

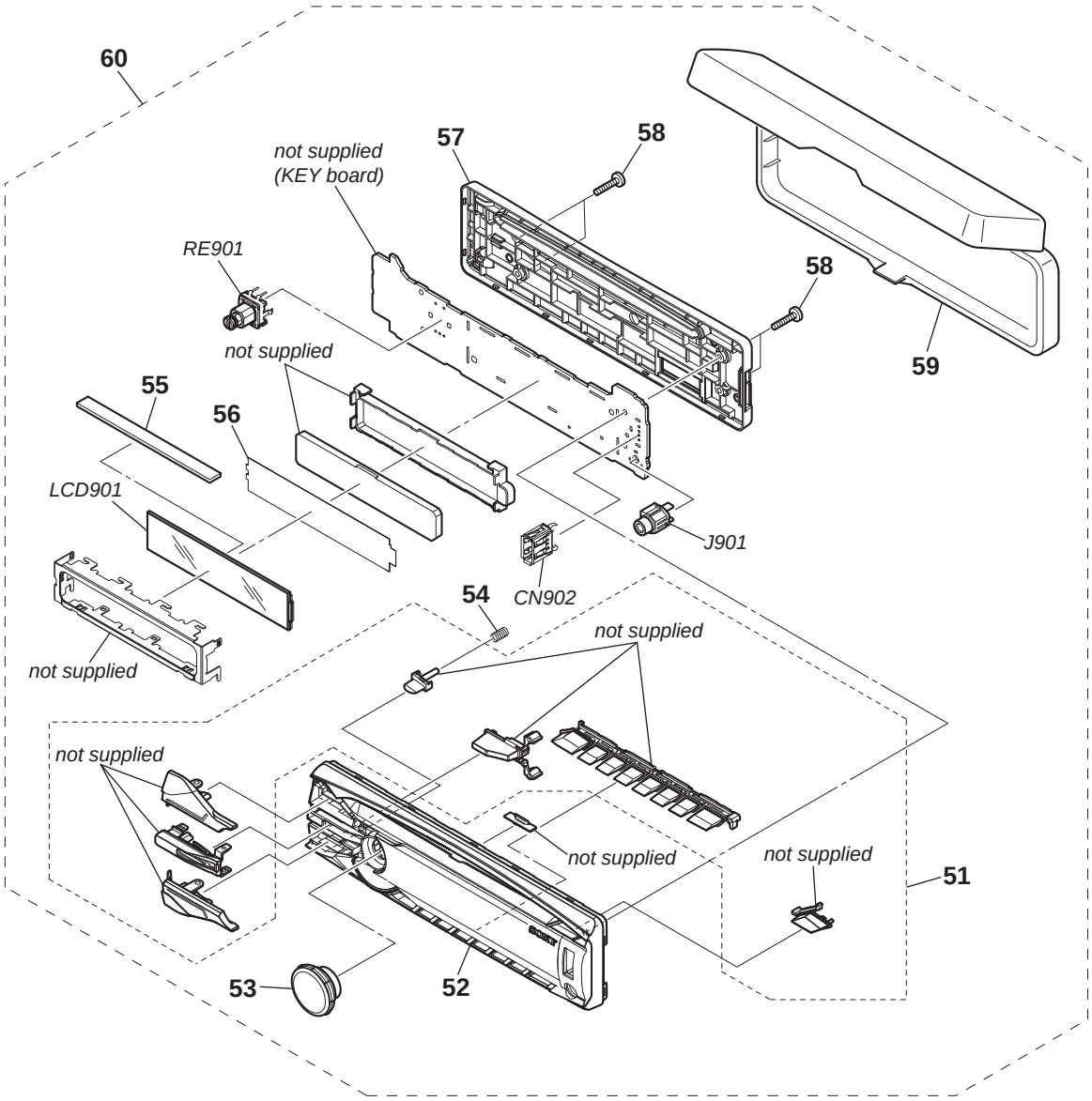
5-1. MAIN SECTION



Ref. No.	Part No.	Description	Remark
1	X-2547-883-1	PANEL ASSY, SUB	
2	3-042-244-11	SCREW (T)	
3	X-2547-583-1	LOCK ASSY (T)	
4	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
5	A-1785-264-A	MAIN BOARD, COMPLETE (GT450U)	
5	A-1785-580-A	MAIN BOARD, COMPLETE (GT454US)	
6	1-831-838-11	CORD (WITH CONNECTOR) (ISO) (POWER)	(GT454US)

Ref. No.	Part No.	Description	Remark
6	1-833-974-21	CONNECTION CORD FOR AUTOMOBILE	(POWER) (GT450U)
FU601	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
#1	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#2	7-685-790-01	SCREW +PTT 2.6X4 (S)	
#3	7-685-793-09	SCREW +PTT 2.6X8 (S)	
#4	7-685-794-09	SCREW +PTT 2.6X10 (S)	
#5	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	

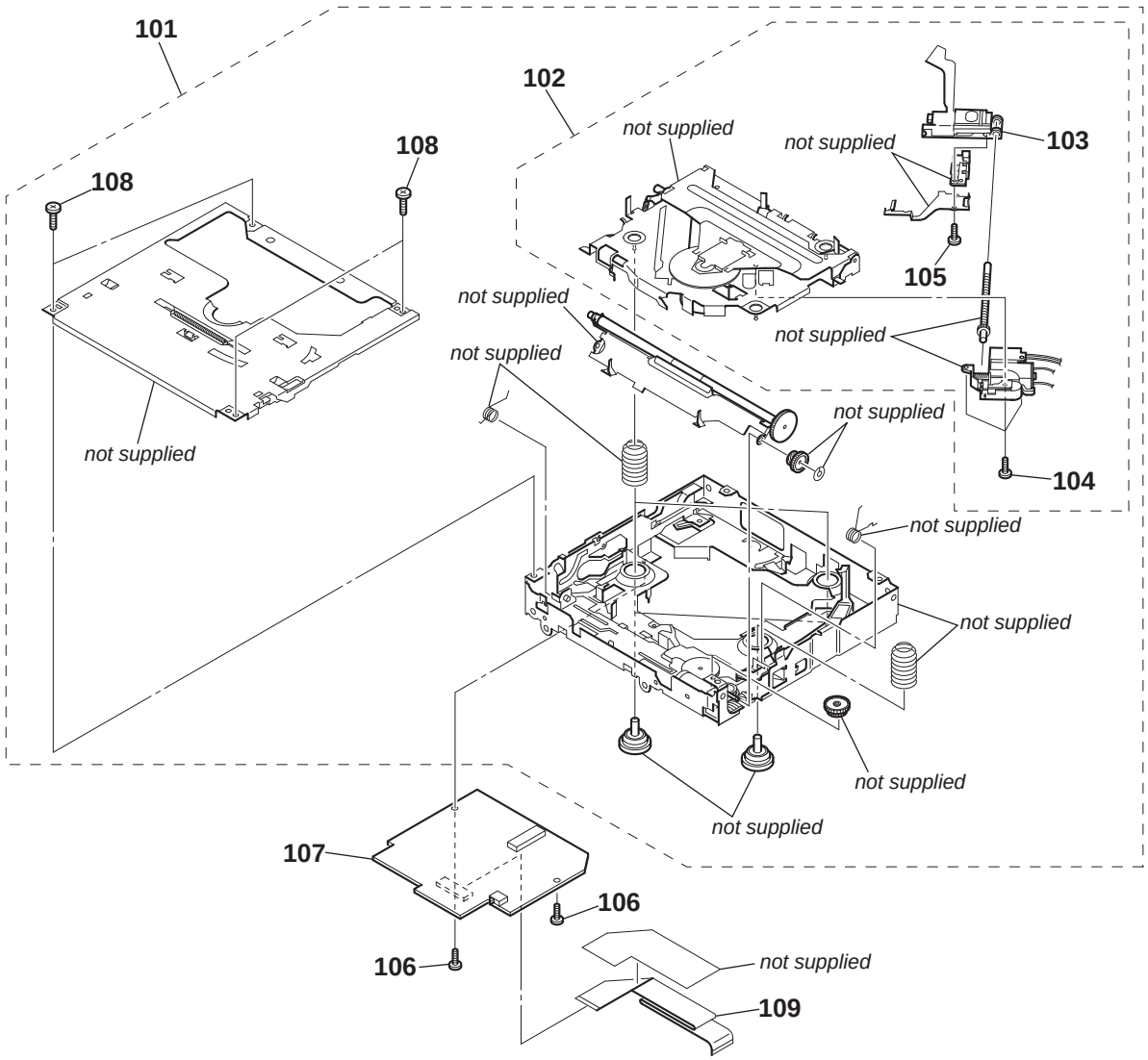
5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	X-2548-936-1	BUTTON ASSY (S) (GT450U)	
51	X-2560-617-1	BUTTON ASSY (S) (GT454US)	
52	X-2548-942-1	PANEL (SV) ASSY, FRONT (GT450U)	
52	X-2560-618-1	PANEL (SV) ASSY, FRONT (GT454US)	
53	X-2560-642-1	KNOB (VOL) (SV) ASSY	
54	2-639-881-01	SPRING (RELEASE)	
55	1-780-789-12	CONDUCTIVE BOARD, CONNECTION	
56	4-183-279-01	ILLUMINATOR (LCD)	
57	4-183-529-01	PANEL, BACK	

Ref. No.	Part No.	Description	Remark
58	3-250-543-21	SCREW (+B P-TITE M2)	
59	X-2187-544-3	CASE ASSY (for FRONT PANEL) (GT454US)	
60	A-1785-301-A	PANEL OVERALL ASSY, FRONT (GT450U)	
60	A-1799-232-A	PANEL OVERALL ASSY, FRONT (GT454US)	
CN902	1-822-798-11	CONNECTOR, USB 4P (USB)	
J901	1-822-148-11	SMALL TYPE JACK (VERTICAL) (AUX)	
LCD901	1-811-224-11	DISPLAY PANEL, LIQUID CRYSTAL	
RE901	1-479-902-41	ENCODER, ROTARY (PUSH ENTER/SELECT (VOLUME))	

5-3. CD MECHANISM SECTION (MG-101N-188)



Note: If the wire (flat type) was replaced, fold it some as the wire (flat type) before replacement.

Ref. No.	Part No.	Description	Remark
101	A-1795-756-A	MECHANICAL BLOCK ASSY (N)	
102	A-1284-705-A	DAXEV08//Q	
⚠ 103	X-2149-672-1	SERVICE ASSY, OP (DAX-25A)	
104	2-626-869-31	SCREW (M2X3), SERRATION	
105	3-686-458-21	SCREW (P1.4), TAPPING	

Ref. No.	Part No.	Description	Remark
106	3-352-758-31	SCREW (M1.7X2.5), TOOTHED LOCK	
107	A-1768-002-A	SERVO BOARD, COMPLETE	
108	2-134-636-71	SCREW (M1.7X2.5)	
109	1-838-286-11	CABLE, FLEXIBLE FLAT (13 CORE)	

SECTION 6
ELECTRICAL PARTS LIST

KEY

Note:

- 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.
- -XX and -X mean standardized parts, so they may have some difference 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.
- CAPACITORS
  uF: µF
- COILS
  uH: µH
- 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. . : µA. . , uPA. . , µPA. . ,
  uPB. . : µPB. . , uPC. . , µPC. . ,
  uPD. . : µPD. .

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

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

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

Ref. No.	Part No.	Description			Remark
		KEY BOARD			
		**********			
	1-780-789-12	CONDUCTIVE BOARD, CONNECTION			
	4-183-279-01	ILLUMINATOR (LCD)			
		< CAPACITOR >			
C901	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C902	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C903	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C904	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C906	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C909	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C910	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C911	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C912	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C915	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C916	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN901	1-842-265-11	PLUG, CONNECTOR 20P			
CN902	1-822-798-11	CONNECTOR, USB 4P (USB)			
		< DIODE >			
D901	6-501-817-01	DIODE MA2J1110GLS0			
D902	6-503-202-01	DIODE RKZ5.1B2KGP1			
D907	6-503-205-01	DIODE RKZ6.8B2KGP1			
D908	6-503-205-01	DIODE RKZ6.8B2KGP1			
D909	6-503-205-01	DIODE RKZ6.8B2KGP1			
D911	6-503-205-01	DIODE RKZ6.8B2KGP1			
D912	6-503-205-01	DIODE RKZ6.8B2KGP1			
D916	6-503-205-01	DIODE RKZ6.8B2KGP1			
D921	6-503-205-01	DIODE RKZ6.8B2KGP1			
		< FERRITE BEAD >			
FB901	1-414-385-21	INDUCTOR, FERRITE BEAD			
FB902	1-414-385-21	INDUCTOR, FERRITE BEAD			
FB903	1-414-385-21	INDUCTOR, FERRITE BEAD			
		< IC >			
IC901	6-714-396-01	IC LC75829PWH-US-H			
IC902	6-600-764-01	IC PNA4813M01S0 (IR)			
		< JACK >			
J901	1-822-148-11	SMALL TYPE JACK (VERTICAL) (AUX)			

Ref. No.	Part No.	Description			Remark
		< LIQUID CRYSTAL DISPLAY >			
LCD901	1-811-224-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< DIODE >			
LED901	6-503-227-01	LED NESW505DT-A0-UV (LCD BACK LIGHT)			
LED903	6-502-193-01	LED SML-D12V8WT86SN (⏏)			
LED905	6-502-193-01	LED SML-D12V8WT86SN (DISC SLOT INDICATOR)			
LED907	6-502-193-01	LED SML-D12V8WT86SN (ILLUMINATOR)			
LED909	6-502-193-01	LED SML-D12V8WT86SN (ILLUMINATOR)			
LED910	6-502-193-01	LED SML-D12V8WT86SN (SEEK+ ▶▶I ▶▶)			
LED912	6-502-193-01	LED SML-D12V8WT86SN (◀◀ I◀◀ SEEK–)			
LED914	6-502-193-01	LED SML-D12V8WT86SN (SOURCE/OFF)			
LED916	6-502-193-01	LED SML-D12V8WT86SN (ZAP)			
LED919	6-502-193-01	LED SML-D12V8WT86SN (🔍)			
LED921	6-502-193-01	LED SML-D12V8WT86SN (🔍)			
LED925	6-502-193-01	LED SML-D12V8WT86SN (RING ILLUMINATOR)			
LED928	6-502-193-01	LED SML-D12V8WT86SN (RING ILLUMINATOR)			
LED929	6-502-193-01	LED SML-D12V8WT86SN (RING ILLUMINATOR)			
LED932	6-502-193-01	LED SML-D12V8WT86SN (ILLUMINATOR)			
LED934	6-502-193-01	LED SML-D12V8WT86SN (ILLUMINATOR)			
LED936	6-502-193-01	LED SML-D12V8WT86SN (ILLUMINATOR)			
LED938	6-502-193-01	LED SML-D12V8WT86SN (ILLUMINATOR)			
LED940	6-502-193-01	LED SML-D12V8WT86SN (⮌/MODE)			
		< SWITCH >			
LSW905	1-798-287-11	SWITCH, TACTILE (WITH LED) (DSPL/SCRL)			
LSW906	1-798-287-11	SWITCH, TACTILE (WITH LED) (6/PAUSE)			
LSW907	1-798-287-11	SWITCH, TACTILE (WITH LED) (5)			
LSW908	1-798-287-11	SWITCH, TACTILE (WITH LED) (4/SHUF)			
LSW909	1-798-287-11	SWITCH, TACTILE (WITH LED) (3/REP)			
LSW910	1-798-287-11	SWITCH, TACTILE (WITH LED) (2/ALBUM +)			
LSW911	1-798-287-11	SWITCH, TACTILE (WITH LED) (1/ALBUM –)			
LSW912	1-798-287-11	SWITCH, TACTILE (WITH LED) (PTY) (GT450U)			
LSW912	1-798-287-11	SWITCH, TACTILE (WITH LED) (AF/TA/PTY) (G T454US)			
		< TRANSISTOR >			
Q901	8-729-038-22	TRANSISTOR RT1N140C-TP-1			
		< RESISTOR >			
R900	1-216-864-11	SHORT CHIP	0		
R904	1-216-857-11	METAL CHIP	1M	5%	1/10W
R905	1-216-864-11	SHORT CHIP	0		
R906	1-216-811-11	METAL CHIP	150	5%	1/10W

KEY **MAIN**

Ref. No.	Part No.	Description			Remark
R908	1-216-810-11	METAL CHIP	120	5%	1/10W
R909	1-216-810-11	METAL CHIP	120	5%	1/10W
R910	1-216-810-11	METAL CHIP	120	5%	1/10W
R911	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R914	1-216-864-11	SHORT CHIP	0		
R915	1-216-809-11	METAL CHIP	100	5%	1/10W
R916	1-216-809-11	METAL CHIP	100	5%	1/10W
R917	1-216-809-11	METAL CHIP	100	5%	1/10W
R918	1-216-864-11	SHORT CHIP	0		
R919	1-216-864-11	SHORT CHIP	0		
R920	1-216-820-11	METAL CHIP	820	5%	1/10W
R921	1-216-821-11	METAL CHIP	1K	5%	1/10W
R922	1-216-821-11	METAL CHIP	1K	5%	1/10W
R923	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R924	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R925	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R926	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R928	1-216-820-11	METAL CHIP	820	5%	1/10W
R929	1-216-821-11	METAL CHIP	1K	5%	1/10W
R930	1-216-821-11	METAL CHIP	1K	5%	1/10W
R931	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R932	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
R933	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R934	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R937	1-216-820-11	METAL CHIP	820	5%	1/10W
R940	1-216-811-11	METAL CHIP	150	5%	1/10W
R942	1-216-820-11	METAL CHIP	820	5%	1/10W
R944	1-216-001-00	METAL CHIP	10	5%	1/10W
R945	1-216-802-11	METAL CHIP	27	5%	1/10W
R946	1-216-802-11	METAL CHIP	27	5%	1/10W
R948	1-216-820-11	METAL CHIP	820	5%	1/10W
R952	1-216-821-11	METAL CHIP	1K	5%	1/10W
R953	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R958	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R959	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R962	1-216-811-11	METAL CHIP	150	5%	1/10W
R963	1-216-811-11	METAL CHIP	150	5%	1/10W
R966	1-216-811-11	METAL CHIP	150	5%	1/10W
R967	1-216-811-11	METAL CHIP	150	5%	1/10W
R970	1-216-813-11	METAL CHIP	220	5%	1/10W
R971	1-216-813-11	METAL CHIP	220	5%	1/10W
R974	1-216-820-11	METAL CHIP	820	5%	1/10W
R975	1-216-820-11	METAL CHIP	820	5%	1/10W
R976	1-216-820-11	METAL CHIP	820	5%	1/10W
R978	1-216-820-11	METAL CHIP	820	5%	1/10W
R983	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R984	1-216-824-11	METAL CHIP	1.8K	5%	1/10W
R985	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R986	1-216-809-11	METAL CHIP	100	5%	1/10W
R990	1-216-821-11	METAL CHIP	1K	5%	1/10W
R991	1-216-822-11	METAL CHIP	1.2K	5%	1/10W
R994	1-216-820-11	METAL CHIP	820	5%	1/10W
R995	1-216-821-11	METAL CHIP	1K	5%	1/10W
R996	1-216-821-11	METAL CHIP	1K	5%	1/10W
R998	1-216-864-11	SHORT CHIP	0		
R999	1-216-001-00	METAL CHIP	10	5%	1/10W
		< ROTARY ENCODER >			
RE901	1-479-902-41	ENCODER, ROTARY (PUSH ENTER/SELECT (VOLUME))			

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S901	1-798-284-11	SWITCH, TACTILE (⏏)			
S902	1-798-284-11	SWITCH, TACTILE (SOURCE/OFF)			
S903	1-798-284-11	SWITCH, TACTILE (SEEK+ ▶▶I ▶▶)			
S904	1-798-284-11	SWITCH, TACTILE (⮌/MODE)			
S905	1-798-284-11	SWITCH, TACTILE (◀◀ I◀◀ SEEK–)			
S906	1-798-284-11	SWITCH, TACTILE (🔍)			
S907	1-798-284-11	SWITCH, TACTILE (ZAP)			
		< VARISTOR >			
VDR906	1-804-988-21	VARISTOR, CHIP (1608)			
VDR908	1-804-988-21	VARISTOR, CHIP (1608)			
**********					
	A-1785-264-A	MAIN BOARD, COMPLETE (GT450U)			
	A-1785-580-A	MAIN BOARD, COMPLETE (GT454US)			
		**********			
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT			
	7-685-794-09	SCREW +PTT 2.6X10 (S)			
		< CAPACITOR >			
C1	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C5	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C6	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C8	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C9	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C12	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C13	1-100-742-91	CERAMIC CHIP	2.2uF	20%	10V
C16	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
C17	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C18	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C19	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C20	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C21	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C22	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C23	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C24	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C25	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C26	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C27	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C28	1-126-947-11	ELECT	47uF	20%	35V
C100	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C101	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C103	1-115-339-11	CERAMIC CHIP	0.1uF	10%	50V
C158	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C203	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C300	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C301	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C302	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C303	1-128-551-11	ELECT	22uF	20%	63V
C304	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C305	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C306	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C308	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C312	1-124-233-11	ELECT	10uF	20%	16V
C313	1-126-947-11	ELECT	47uF	20%	35V
C315	1-125-889-11	CERAMIC CHIP	2.2uF	10%	10V
C316	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C318	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C319	1-165-908-11	CERAMIC CHIP	1uF	10%	10V

Ref. No.	Part No.	Description			Remark
C320	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C321	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C322	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C323	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C324	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C327	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C328	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C329	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C330	1-115-340-11	CERAMIC CHIP	0.22uF	10%	25V
C332	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C333	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C334	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C335	1-163-009-91	CERAMIC CHIP	0.001uF	10%	50V
C336	1-112-302-11	ELECT	3300uF	20%	16V
C337	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C401	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C402	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C403	1-128-057-11	ELECT	330uF	20%	6.3V
C405	1-216-864-11	SHORT CHIP	0		
C407	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C409	1-126-926-11	ELECT	1000uF	20%	10V
C410	1-126-964-11	ELECT	10uF	20%	50V
C411	1-128-057-11	ELECT	330uF	20%	6.3V
C412	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C413	1-126-964-11	ELECT	10uF	20%	50V
C414	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C415	1-126-934-11	ELECT	220uF	20%	16V
C416	1-124-589-11	ELECT	47uF	20%	16V
C417	1-104-943-11	ELECT	2.2uF	20%	50V
C418	1-104-943-11	ELECT	2.2uF	20%	50V
C419	1-126-964-11	ELECT	10uF	20%	50V
C420	1-126-964-11	ELECT	10uF	20%	50V
C421	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C422	1-126-964-11	ELECT	10uF	20%	50V
C423	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C424	1-126-964-11	ELECT	10uF	20%	50V
C425	1-126-964-11	ELECT	10uF	20%	50V
C426	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C436	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C437	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C438	1-100-591-91	CERAMIC CHIP	1uF	10%	25V
C442	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C443	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C444	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C445	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C447	1-124-584-00	ELECT	100uF	20%	10V
C502	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C504	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C507	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C508	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C510	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C512	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C514	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C517	1-216-864-11	SHORT CHIP	0		
C518	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C520	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C521	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C522	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C523	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remark
C600	1-125-972-61	ELECT	100uF	20%	16V
C602	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C603	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C604	1-100-671-11	CERAMIC CHIP	4.7uF	20%	25V
C605	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C606	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C607	1-100-591-91	CERAMIC CHIP	1uF	10%	25V
C609	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C611	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C612	1-126-935-11	ELECT	470uF	20%	16V
C613	1-100-591-91	CERAMIC CHIP	1uF	10%	25V
C614	1-165-733-91	ELECT	100uF	20%	25V
C615	1-125-972-61	ELECT	100uF	20%	16V
C701	1-124-584-00	ELECT	100uF	20%	10V
C703	1-124-233-11	ELECT	10uF	20%	16V
C704	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C710	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C711	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

< CONNECTOR >

CN102	1-842-266-11	SOCKET, CONNECTOR 20P	
CN301	1-774-701-21	PIN, CONNECTOR 16P	
CN402	1-818-174-11	CONNECTOR, FPC/FFC 13P	
* CN501	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P	
CN701	1-820-611-11	CONNECTOR, BOARD TO BOARD 28P	

< DIODE >

D101	6-503-205-01	DIODE	RKZ6.8B2KGP1
D102	6-503-205-01	DIODE	RKZ6.8B2KGP1
D103	6-503-205-01	DIODE	RKZ6.8B2KGP1
D104	6-503-205-01	DIODE	RKZ6.8B2KGP1
D105	6-503-205-01	DIODE	RKZ6.8B2KGP1
D106	6-503-205-01	DIODE	RKZ6.8B2KGP1
D107	6-503-205-01	DIODE	RKZ6.8B2KGP1
D108	6-503-205-01	DIODE	RKZ6.8B2KGP1
D109	6-503-213-01	DIODE	RKZ18B2KGP1
D110	6-503-205-01	DIODE	RKZ6.8B2KGP1
D116	6-503-205-01	DIODE	RKZ6.8B2KGP1
D117	1-805-043-11	ABSORBER, CHIP SURGE	
D118	1-805-043-11	ABSORBER, CHIP SURGE	
D119	6-503-205-01	DIODE	RKZ6.8B2KGP1
D301	6-503-213-01	DIODE	RKZ18B2KGP1 (GT454US)
D302	6-502-643-01	DIODE	1A4-A2
D303	6-502-643-01	DIODE	1A4-A2
D304	6-502-643-01	DIODE	1A4-A2
D310	6-502-643-01	DIODE	1A4-A2
D311	6-502-643-01	DIODE	1A4-A2
D312	6-502-643-01	DIODE	1A4-A2
D313	6-502-643-01	DIODE	1A4-A2
D314	6-502-643-01	DIODE	1A4-A2
D315	6-502-643-01	DIODE	1A4-A2
D316	6-502-643-01	DIODE	1A4-A2
D317	6-502-643-01	DIODE	1A4-A2
D318	6-502-643-01	DIODE	1A4-A2
D320	6-503-213-01	DIODE	RKZ18B2KGP1
D321	6-502-643-01	DIODE	1A4-A2
D322	6-503-213-01	DIODE	RKZ18B2KGP1
D323	6-503-213-01	DIODE	RKZ18B2KGP1
D324	6-502-643-01	DIODE	1A4-A2
D401	6-501-817-01	DIODE	MA2J1110GLS0
D403	6-501-817-01	DIODE	MA2J1110GLS0

MAIN

Ref. No.	Part No.	Description	Remark
D404	6-501-817-01	DIODE MA2J1110GLS0	
D501	6-503-205-01	DIODE RKZ6.8B2KGP1	
D601	6-501-657-01	DIODE MA24D5000BS0	
D731	6-501-013-01	DIODE BAT54ALT1G	
D806	6-503-206-01	DIODE RKZ7.5B2KGP1	
D807	6-503-213-01	DIODE RKZ18B2KGP1	
		< FERRITE BEAD >	
FB1	1-400-334-21	FERRITE, EMI (SMD) (1608) (GT450U)	
FB2	1-400-334-21	FERRITE, EMI (SMD) (1608) (GT450U)	
FB3	1-400-334-21	FERRITE, EMI (SMD) (1608) (GT450U)	
FB401	1-216-295-91	SHORT CHIP 0	
FB402	1-400-334-21	FERRITE, EMI (SMD) (1608)	
FB403	1-400-334-21	FERRITE, EMI (SMD) (1608)	
FB501	1-414-595-11	INDUCTOR, FERRITE BEAD	
FB704	1-414-595-11	INDUCTOR, FERRITE BEAD	
FB705	1-414-595-11	INDUCTOR, FERRITE BEAD	
FB706	1-414-595-11	INDUCTOR, FERRITE BEAD	
FB801	1-414-595-11	INDUCTOR, FERRITE BEAD	
FB802	1-414-595-11	INDUCTOR, FERRITE BEAD	
FB826	1-414-595-11	INDUCTOR, FERRITE BEAD	
		< IC >	
IC001	6-714-162-01	IC TEF6617T/V1/S470,518	
IC301	6-715-848-11	IC TDF8556AJ/N3	
IC401	6-714-623-01	IC BD3467FV-E2	
IC402	6-702-302-01	IC TK11133CSCL-G	
IC403	6-712-776-01	IC PST8228UL	
IC501	6-716-619-01	IC R5F3650KBDZ99FA (for SERVICE)	
IC601	6-714-602-01	IC BD9070FP-E2	
		< JACK >	
J1	1-822-949-21	JACK (ANTENNA)	
J401	1-822-713-11	JACK, PIN 2P (REAR/SUB AUDIO OUT)	(GT454US)
J402	1-822-712-11	JACK, PIN 4P (REAR/SUB AUDIO OUT, FRONT AUDIO OUT) (GT450U)	
J801	1-566-822-81	JACK (REMOTE IN)	
		< JUMPER RESISTOR >	
JC103	1-216-296-11	SHORT CHIP 0	
JC106	1-216-864-11	SHORT CHIP 0	
JC116	1-216-296-11	SHORT CHIP 0	
JC120	1-216-296-11	SHORT CHIP 0	
JC121	1-216-295-91	SHORT CHIP 0	
JC123	1-216-296-11	SHORT CHIP 0	
JC131	1-216-296-11	SHORT CHIP 0	
JC256	1-216-864-11	SHORT CHIP 0	
JC257	1-216-864-11	SHORT CHIP 0	
JC260	1-216-864-11	SHORT CHIP 0	
JC261	1-216-864-11	SHORT CHIP 0	
JC262	1-216-295-91	SHORT CHIP 0	
JC264	1-216-864-11	SHORT CHIP 0	
JC265	1-216-296-11	SHORT CHIP 0	
JC267	1-216-296-11	SHORT CHIP 0	
JC268	1-216-295-91	SHORT CHIP 0	
JC269	1-216-864-11	SHORT CHIP 0	
JC271	1-216-864-11	SHORT CHIP 0	
JC273	1-216-296-11	SHORT CHIP 0	
JC274	1-216-295-91	SHORT CHIP 0	

Ref. No.	Part No.	Description	Remark
JC275	1-216-296-11	SHORT CHIP 0	
JC277	1-216-295-91	SHORT CHIP 0	
JC281	1-216-296-11	SHORT CHIP 0	
JC282	1-216-296-11	SHORT CHIP 0	
JC289	1-216-296-11	SHORT CHIP 0	
JC290	1-216-296-11	SHORT CHIP 0	
JC291	1-216-296-11	SHORT CHIP 0	
JC295	1-216-295-91	SHORT CHIP 0	
JC301	1-216-296-11	SHORT CHIP 0	
JC302	1-216-864-11	SHORT CHIP 0	
JC307	1-216-864-11	SHORT CHIP 0	
JC346	1-216-864-11	SHORT CHIP 0	
JC356	1-216-296-11	SHORT CHIP 0	
JC361	1-216-864-11	SHORT CHIP 0	
JC362	1-216-864-11	SHORT CHIP 0	
JC363	1-216-864-11	SHORT CHIP 0 (GT454US)	
JC366	1-216-296-11	SHORT CHIP 0	
JC408	1-216-296-11	SHORT CHIP 0	
JC418	1-216-296-11	SHORT CHIP 0	
JC419	1-216-296-11	SHORT CHIP 0	
JC469	1-216-864-11	SHORT CHIP 0	
JC475	1-216-296-11	SHORT CHIP 0	
JC479	1-216-296-11	SHORT CHIP 0	
		< COIL >	
L1	1-414-180-51	INDUCTOR 3.3uH	
L2	1-410-501-61	INDUCTOR 2.2uH	
L6	1-457-817-11	COIL (FM MIX)	
L7	1-481-285-51	INDUCTOR 560uH	
L8	1-481-285-51	INDUCTOR 560uH	
L301	1-456-617-11	COIL, CHOKE	
L302	1-216-295-91	SHORT CHIP 0	
L402	1-216-864-11	SHORT CHIP 0	
L405	1-216-295-91	SHORT CHIP 0	
L601	1-411-595-21	COIL, CHOKE 47uH	
L602	1-412-525-31	INDUCTOR 10uH	
L603	1-411-595-21	COIL, CHOKE 47uH	
		< TRANSISTOR >	
Q301	8-729-620-13	TRANSISTOR 2SC4154TP-1EF	
Q303	8-729-620-13	TRANSISTOR 2SC4154TP-1EF (GT454US)	
Q401	6-551-677-01	TRANSISTOR RTAN140M-T111-1	
Q402	6-551-677-01	TRANSISTOR RTAN140M-T111-1	
Q403	6-551-677-01	TRANSISTOR RTAN140M-T111-1	
Q404	6-551-677-01	TRANSISTOR RTAN140M-T111-1	
Q405	6-551-677-01	TRANSISTOR RTAN140M-T111-1	
Q406	6-551-677-01	TRANSISTOR RTAN140M-T111-1	
Q407	6-552-410-01	TRANSISTOR DRA5114E0L	
Q409	6-552-430-01	TRANSISTOR DRC5114E0L	
Q802	6-552-430-01	TRANSISTOR DRC5114E0L	
Q807	6-552-444-01	TRANSISTOR DRC5144E0L	
Q808	8-729-620-13	TRANSISTOR 2SC4154TP-1EF	
		< RESISTOR >	
R1	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R2	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R3	1-216-864-11	SHORT CHIP 0 (GT454US)	
R11	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R12	1-216-009-91	METAL CHIP 22 5% 1/10W	
R13	1-216-809-11	METAL CHIP 100 5% 1/10W	

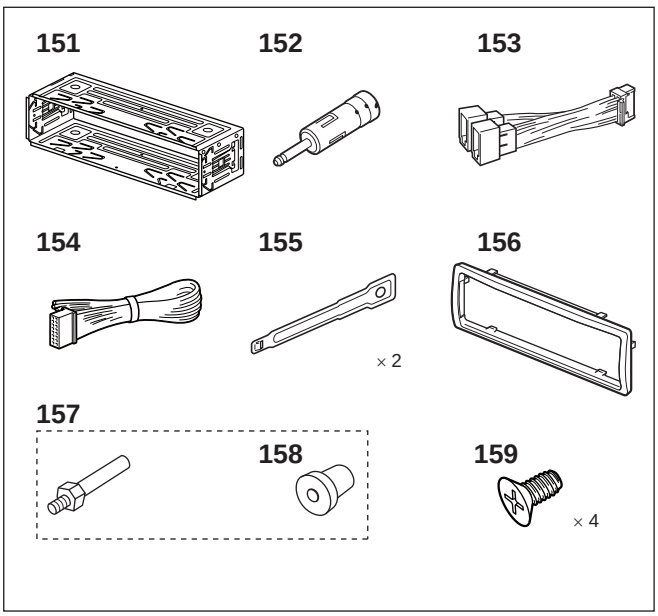
Ref. No.	Part No.	Description			Remark
R14	1-216-809-11	METAL CHIP	100	5%	1/10W
R15	1-216-864-11	SHORT CHIP	0 (GT454US)		
R16	1-216-864-11	SHORT CHIP	0 (GT454US)		
R116	1-216-295-91	SHORT CHIP	0		
R121	1-216-864-11	SHORT CHIP	0		
R122	1-216-864-11	SHORT CHIP	0		
R301	1-216-809-11	METAL CHIP	100	5%	1/10W
R302	1-216-809-11	METAL CHIP	100	5%	1/10W
R303	1-216-182-00	METAL CHIP	220	5%	1/8W
R304	1-216-182-00	METAL CHIP	220	5%	1/8W
R305	1-216-182-00	METAL CHIP	220	5%	1/8W
R306	1-216-182-00	METAL CHIP	220	5%	1/8W
R308	1-216-811-11	METAL CHIP	150	5%	1/10W
R310	1-216-841-11	METAL CHIP	47K	5%	1/10W
R315	1-216-841-11	METAL CHIP	47K	5%	1/10W
R316	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R317	1-216-841-11	METAL CHIP	47K	5%	1/10W
R318	1-216-833-11	METAL CHIP	10K	5%	1/10W (GT454US)
R319	1-216-833-11	METAL CHIP	10K	5%	1/10W (GT454US)
R320	1-216-841-11	METAL CHIP	47K	5%	1/10W (GT454US)
R321	1-216-821-11	METAL CHIP	1K	5%	1/10W (GT454US)
R325	1-249-425-11	CARBON	4.7K	5%	1/4W
R401	1-216-845-11	METAL CHIP	100K	5%	1/10W
R402	1-216-813-11	METAL CHIP	220	5%	1/10W
R403	1-216-833-11	METAL CHIP	10K	5%	1/10W
R404	1-216-813-11	METAL CHIP	220	5%	1/10W
R405	1-216-833-11	METAL CHIP	10K	5%	1/10W
R406	1-216-864-11	SHORT CHIP	0		
R407	1-216-813-11	METAL CHIP	220	5%	1/10W
R409	1-216-833-11	METAL CHIP	10K	5%	1/10W
R410	1-216-813-11	METAL CHIP	220	5%	1/10W
R411	1-216-833-11	METAL CHIP	10K	5%	1/10W
R415	1-216-817-11	METAL CHIP	470	5%	1/10W
R416	1-216-817-11	METAL CHIP	470	5%	1/10W
R417	1-216-834-11	METAL CHIP	12K	5%	1/10W
R418	1-216-834-11	METAL CHIP	12K	5%	1/10W
R419	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R420	1-216-295-91	SHORT CHIP	0		
R421	1-216-813-11	METAL CHIP	220	5%	1/10W
R422	1-216-833-11	METAL CHIP	10K	5%	1/10W
R423	1-216-813-11	METAL CHIP	220	5%	1/10W
R424	1-216-833-11	METAL CHIP	10K	5%	1/10W
R429	1-216-801-11	METAL CHIP	22	5%	1/10W
R430	1-216-864-11	SHORT CHIP	0		
R431	1-216-864-11	SHORT CHIP	0		
R432	1-216-864-11	SHORT CHIP	0		
R433	1-216-295-91	SHORT CHIP	0		
R434	1-216-295-91	SHORT CHIP	0		
R435	1-216-864-11	SHORT CHIP	0		
R436	1-216-864-11	SHORT CHIP	0		
R438	1-216-833-11	METAL CHIP	10K	5%	1/10W
R441	1-216-864-11	SHORT CHIP	0		
R500	1-216-833-11	METAL CHIP	10K	5%	1/10W
R501	1-219-570-11	METAL CHIP	10M	5%	1/10W
R502	1-216-809-11	METAL CHIP	100	5%	1/10W
R503	1-216-809-11	METAL CHIP	100	5%	1/10W
R504	1-218-871-11	METAL CHIP	10K	0.5%	1/10W

Ref. No.	Part No.	Description			Remark
R505	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R506	1-216-845-11	METAL CHIP	100K	5%	1/10W
R507	1-216-845-11	METAL CHIP	100K	5%	1/10W (GT450U)
R508	1-216-849-11	METAL CHIP	220K	5%	1/10W
R509	1-216-864-11	SHORT CHIP	0		
R510	1-216-821-11	METAL CHIP	1K	5%	1/10W
R511	1-216-817-11	METAL CHIP	470	5%	1/10W
R512	1-216-821-11	METAL CHIP	1K	5%	1/10W
R513	1-216-845-11	METAL CHIP	100K	5%	1/10W
R514	1-216-845-11	METAL CHIP	100K	5%	1/10W
R516	1-216-864-11	SHORT CHIP	0		
R517	1-216-864-11	SHORT CHIP	0		
R519	1-216-845-11	METAL CHIP	100K	5%	1/10W
R521	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R522	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R523	1-216-845-11	METAL CHIP	100K	5%	1/10W
R525	1-216-845-11	METAL CHIP	100K	5%	1/10W
R528	1-216-845-11	METAL CHIP	100K	5%	1/10W
R529	1-216-864-11	SHORT CHIP	0		
R530	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R531	1-216-845-11	METAL CHIP	100K	5%	1/10W
R532	1-216-845-11	METAL CHIP	100K	5%	1/10W
R533	1-216-845-11	METAL CHIP	100K	5%	1/10W
R534	1-216-833-11	METAL CHIP	10K	5%	1/10W
R535	1-216-833-11	METAL CHIP	10K	5%	1/10W
R536	1-216-833-11	METAL CHIP	10K	5%	1/10W
R537	1-216-845-11	METAL CHIP	100K	5%	1/10W (GT454US)
R538	1-216-845-11	METAL CHIP	100K	5%	1/10W (GT450U)
R539	1-216-809-11	METAL CHIP	100	5%	1/10W
R540	1-216-809-11	METAL CHIP	100	5%	1/10W
R542	1-216-864-11	SHORT CHIP	0		
R543	1-216-864-11	SHORT CHIP	0		
R544	1-216-809-11	METAL CHIP	100	5%	1/10W
R550	1-216-845-11	METAL CHIP	100K	5%	1/10W
R551	1-216-845-11	METAL CHIP	100K	5%	1/10W
R552	1-216-845-11	METAL CHIP	100K	5%	1/10W
R554	1-216-845-11	METAL CHIP	100K	5%	1/10W
R555	1-216-864-11	SHORT CHIP	0		
R556	1-216-845-11	METAL CHIP	100K	5%	1/10W (GT450U)
R560	1-216-845-11	METAL CHIP	100K	5%	1/10W
R561	1-216-845-11	METAL CHIP	100K	5%	1/10W
R562	1-216-845-11	METAL CHIP	100K	5%	1/10W
R563	1-216-864-11	SHORT CHIP	0		
R564	1-216-845-11	METAL CHIP	100K	5%	1/10W (GT454US)
R565	1-216-845-11	METAL CHIP	100K	5%	1/10W
R566	1-216-845-11	METAL CHIP	100K	5%	1/10W
R567	1-216-845-11	METAL CHIP	100K	5%	1/10W
R568	1-216-097-11	METAL CHIP	100K	5%	1/10W
R570	1-216-817-11	METAL CHIP	470	5%	1/10W
R571	1-216-845-11	METAL CHIP	100K	5%	1/10W
R572	1-216-845-11	METAL CHIP	100K	5%	1/10W
R573	1-216-845-11	METAL CHIP	100K	5%	1/10W (GT454US)
R575	1-216-845-11	METAL CHIP	100K	5%	1/10W
R577	1-216-845-11	METAL CHIP	100K	5%	1/10W
R580	1-216-809-11	METAL CHIP	100	5%	1/10W

MAIN **SERVO**

Ref. No.	Part No.	Description			Remark
R581	1-216-857-11	METAL CHIP	1M	5%	1/10W
R583	1-216-845-11	METAL CHIP	100K	5%	1/10W
R584	1-216-845-11	METAL CHIP	100K	5%	1/10W
R585	1-216-821-11	METAL CHIP	1K	5%	1/10W
R587	1-216-845-11	METAL CHIP	100K	5%	1/10W
R588	1-216-845-11	METAL CHIP	100K	5%	1/10W
R589	1-216-833-11	METAL CHIP	10K	5%	1/10W
R591	1-216-821-11	METAL CHIP	1K	5%	1/10W
R592	1-216-809-11	METAL CHIP	100	5%	1/10W
R593	1-216-809-11	METAL CHIP	100	5%	1/10W
R594	1-216-845-11	METAL CHIP	100K	5%	1/10W
R595	1-216-845-11	METAL CHIP	100K	5%	1/10W
R596	1-216-845-11	METAL CHIP	100K	5%	1/10W
R598	1-216-809-11	METAL CHIP	100	5%	1/10W
R599	1-216-845-11	METAL CHIP	100K	5%	1/10W
R601	1-216-841-11	METAL CHIP	47K	5%	1/10W
R602	1-216-817-11	METAL CHIP	470	5%	1/10W
R603	1-245-816-11	METAL CHIP	2.2K	0.5%	1/10W
R604	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R605	1-216-817-11	METAL CHIP	470	5%	1/10W
R606	1-216-817-11	METAL CHIP	470	5%	1/10W
R607	1-216-836-11	METAL CHIP	18K	5%	1/10W
R608	1-245-806-11	METAL CHIP	820	0.5%	1/10W
R609	1-245-816-11	METAL CHIP	2.2K	0.5%	1/10W
R610	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R611	1-249-413-11	CARBON	470	5%	1/4W
R701	1-216-864-11	SHORT CHIP	0		
R702	1-216-864-11	SHORT CHIP	0		
R705	1-216-864-11	SHORT CHIP	0		
R707	1-216-809-11	METAL CHIP	100	5%	1/10W
R708	1-216-864-11	SHORT CHIP	0		
R709	1-216-845-11	METAL CHIP	100K	5%	1/10W
R710	1-216-809-11	METAL CHIP	100	5%	1/10W
R711	1-216-809-11	METAL CHIP	100	5%	1/10W
R713	1-216-845-11	METAL CHIP	100K	5%	1/10W
R716	1-216-864-11	SHORT CHIP	0		
R815	1-216-821-11	METAL CHIP	1K	5%	1/10W
R816	1-216-821-11	METAL CHIP	1K	5%	1/10W
R858	1-216-849-11	METAL CHIP	220K	5%	1/10W
R862	1-216-849-11	METAL CHIP	220K	5%	1/10W
R865	1-216-864-11	SHORT CHIP	0		
R866	1-216-821-11	METAL CHIP	1K	5%	1/10W
R867	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
		< SWITCH >			
S401	1-786-826-11	SWITCH, TACTILE (RESET)			
		< SURGE ABSORBER >			
VR1	1-805-043-11	ABSORBER, CHIP SURGE			
		< VIBRATOR >			
X1	1-814-302-11	QUARTZ CRYSTAL UNIT (4MHz)			
X501	1-814-207-21	VIBRATOR, CERAMIC (7.92MHz)			
X502	1-813-202-11	VIBRATOR, CRYSTAL (32.768kHz)			
**********					
	A-1768-002-A	SERVO BOARD, COMPLETE			
		**********			
**********					

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
6	1-831-838-11	CORD (WITH CONNECTOR) (ISO) (POWER)	(GT454US)
6	1-833-974-21	CONNECTION CORD FOR AUTOMOBILE	(POWER) (GT450U)
⚠ 103	X-2149-672-1	SERVICE ASSY, OP (DAX-25A)	
109	1-838-286-11	CABLE, FLEXIBLE FLAT (13 CORE)	
FU601	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
**********			
		ACCESSORIES	
		**********	
	1-479-077-14	REMOTE COMMANDER (RM-X151) (GT450U)	
	2-548-729-01	LID, BATTERY CASE (for RM-X151) (GT450U)	
	4-198-111-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH)	(GT450U)
	4-198-111-31	MANUAL, INSTRUCTION (RUSSIAN,UKRAINIAN)	(GT454US)
	4-198-112-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH,	FRENCH) (GT450U)
	4-198-112-31	MANUAL, INSTRUCTION, INSTALL (RUSSIAN,	UKRAINIAN) (GT454US)
	X-2187-544-3	CASE ASSY (for FRONT PANEL) (GT454US)	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
151	X-2548-065-1	FRAME ASSY, FITTING	
152	1-465-459-41	ADAPTOR, ANTENNA (GT454US)	
153	1-831-838-11	CORD (WITH CONNECTOR) (ISO) (POWER)	(GT454US)
154	1-833-974-21	CONNECTION CORD FOR AUTOMOBILE	(POWER) (GT450U)
155	3-876-675-01	KEY (FRAME)	
156	4-183-280-01	COLLAR	
157	X-3382-926-1	SCREW ASSY (BS), FITTING (GT454US)	
158	3-349-410-11	BUSHING (GT454US)	
159	3-934-325-01	SCREW, +K (5X8) TAPPING (GT450U)	



MEMO

REVISION HISTORY

Checking the version allows you to jump to the revised page.
Also, clicking the version at the top of the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2010.10	New