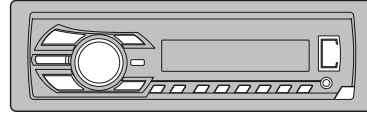


**Pioneer**

# Service Manual



MVH-350BT/XMEW5

ORDER NO.  
**CRT5065**

RDS MEDIA CENTER RECEIVER

# MVH-350BT /XMEW5

MVH-355BT /XMES

MVH-150U /KMEW5

MVH-155U /KMES

MVH-155U /KMES1

MVH-159U /KMD



**PIONEER CORPORATION** 1-1, Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0031, Japan  
**PIONEER ELECTRONICS (USA) INC.** P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.  
**PIONEER EUROPE NV** Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium  
**PIONEER ELECTRONICS ASIACENTRE PTE. LTD.** 253 Alexandra Road, #04-01, Singapore 159936

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# SAFETY INFORMATION

## **CAUTION**

A

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

**Where in a manufacturer's service documentation, for example in circuit diagrams or lists of components, a symbol is used to indicate that a specific component shall be replaced only by the component specified in that documentation for safety reasons, the following symbol shall be used:**

B



## **CAUTION**

Danger of explosion if battery is incorrectly replaced.  
 Replaced only with the same or equivalent type recommended by the manufacturer.  
 Discard used batteries according to the manufacturer's instructions.

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# 1. SERVICE PRECAUTIONS

## 1.1 SERVICE PRECAUTIONS

A



1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

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## 1.2 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.  
Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.
- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40°C.  
Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373°C in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:

- Parts numbers of lead-free solder:  
GYP1006 1.0 in dia.  
GYP1007 0.6 in dia.  
GYP1008 0.3 in dia.

# 2. SPECIFICATIONS

## 2.1 SPECIFICATIONS

### • MVH-350BT/XMEW5, MVH-150UI/XMEW5

#### General

Power source	14.4 V DC (10.8 V to 15.1 V allowable)
Grounding system	Negative type
Maximum current consumption	10.0 A
Backup current	4.0 mA or less
Dimensions (W × H × D):	
DIN	
Chassis	178 mm × 50 mm × 165 mm
Nose	188 mm × 58 mm × 15 mm
D	
Chassis	178 mm × 50 mm × 165 mm
Nose	170 mm × 46 mm × 15 mm
Weight	0.7 kg

#### Audio

Maximum power output	50 W × 4
	70 W × 1/2 Ω (for subwoofer)
Continuous power output	
dr	22 W × 4 (50 Hz to 15 000 Hz,
iven)	5 % THD, 4 Ω load, both channels
Load impedance	4 Ω (4 Ω to 8 Ω allowable)
Preout maximum output level	2.0 V
Loudness contour	+10 dB (100 Hz), +6.5 dB
	(10 kHz) (volume: -30 dB)
Equalizer (5-Band Graphic Equalizer):	
Frequency	80 Hz/250 Hz/800 Hz/
	2.5 kHz/8 kHz
Equalization range	±12 dB (2 dB step)
Subwoofer (mono):	
Frequency	50 Hz/63 Hz/80 Hz/100 Hz/
	125 Hz/160 Hz/200 Hz
Slope	-6 dB/oct, -12 dB/oct
Gain	+6 dB to -24 dB
Phase	Normal/Reverse

#### USB

USB standard specification	USB 2.0 full speed
Maximum current supply	1 A
USB Class	MSC (Mass Storage Class)
File system	FAT12, FAT16, FAT32
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver. 7, 7.1, 8, 9, 10, 11, 12
	(2 ch audio)
	(Windows Media Player)
WAV signal format	Linear PCM & MS ADPCM
	(Non-compressed)

#### FM tuner

Frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	9 dBf (0.8 μV/75 Ω, mono, S/N:
	30 dB)
Signal-to-noise ratio	72 dB (IEC-A network)

#### MW tuner

Frequency range	531 kHz to 1 602 kHz
Usable sensitivity	25 μV (S/N: 20 dB)
Signal-to-noise ratio	62 dB (IEC-A network)

#### LW tuner

Frequency range	153 kHz to 281 kHz
Usable sensitivity	28 μV (S/N: 20 dB)
Signal-to-noise ratio	62 dB (IEC-A network)

#### Bluetooth

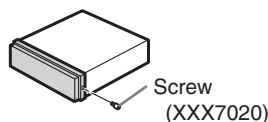
Version	Bluetooth 3.0 certified
Output power	+4 dBm Maximum
	(Power class 2)

#### Note

Specifications and the design are subject to modifications without notice.

### Securing the front panel

The front panel can be secured with the supplied screw.



## • MVH-159UI/XMID

### General

Rated power source .....	14.4 V DC (allowable voltage range: 12.0 V to 14.4 V DC)
Grounding system .....	Negative type
Maximum current consumption .....	10.0 A
Backup current .....	4.0 mA or less
Dimensions (W × H × D):	
DIN	
Chassis .....	178 mm × 50 mm × 165 mm
Nose .....	188 mm × 58 mm × 15 mm
D	
Chassis .....	178 mm × 50 mm × 165 mm
Nose .....	170 mm × 46 mm × 15 mm
Weight .....	0.7 kg

### Audio

Maximum power output .....	50 W × 4 70 W × 1/2 Ω (for subwoofer)
Continuous power output .....	22 W × 4 (50 Hz to 15 000 Hz, 5 % THD, 4 Ω load, both channels dr iven)
Load impedance .....	4 Ω (4 Ω to 8 Ω allowable)
Preout maximum output level .....	2.0 V
Loudness contour .....	+10 dB (100 Hz), +6.5 dB (10 kHz) (volume: -30 dB)
Equalizer (5-Band Graphic Equalizer):	
Frequency .....	80 Hz/250 Hz/800 Hz/ 2.5 kHz/8 kHz
Equalization range .....	±12 dB (2 dB step)
Subwoofer (mono):	
Frequency .....	50 Hz/63 Hz/80 Hz/100 Hz/ 125 Hz/160 Hz/200 Hz
Slope .....	-6 dB/oct, -12 dB/oct
Gain .....	+6 dB to -24 dB
Phase .....	Normal/Reverse

### USB

USB standard specification .....	USB 2.0 full speed
Maximum current supply .....	1A
USB Class .....	MSC (Mass Storage Class)
File system .....	FAT12, FAT16, FAT32
MP3 decoding format .....	MPEG-1 & 2 Audio Layer 3
WMA decoding format .....	Ver. 7, 7.1, 8, 9, 10, 11, 12 (2 ch audio) (Windows Media Player)
WAV signal format .....	Linear PCM & MS ADPCM (Non-compressed)

### FM tuner

Frequency range .....	87.5 MHz to 108.0 MHz
Usable sensitivity .....	9 dBf (0.8 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio .....	72 dB (IEC-A network)

### AM tuner

Frequency range .....	531 kHz to 1 602 kHz (9 kHz) 530 kHz to 1 640 kHz (10 kHz)
Usable sensitivity .....	25 μV (S/N: 20 dB)
Signal-to-noise ratio .....	62 dB (IEC-A network)

### Note

Specifications and the design are subject to modifications without notice.

## • MVH-355BT/XMES, MVH-155UI/XMES, MVH-155UI/XMES1

### General

Rated power source	14.4 V DC (allowable voltage range: 12.0 V to 14.4 V DC)
Grounding system	Negative type
Maximum current consumption	10.0 A
Backup current	4.0 mA or less
Dimensions (W × H × D):	
DIN	
Chassis	178 mm × 50 mm × 165 mm
Nose	188 mm × 58 mm × 15 mm
D	
Chassis	178 mm × 50 mm × 165 mm
Nose	170 mm × 46 mm × 15 mm
Weight	0.7 kg

### Audio

Maximum power output	50 W × 4 70 W × 1/2 Ω (for subwoofer)
Continuous power output	22 W × 4 (50 Hz to 15 000 Hz, 5 % THD, 4 Ω load, both channels driven)
Load impedance	4 Ω (4 Ω to 8 Ω allowable)
Preout maximum output level	2.0 V
Loudness contour	+10 dB (100 Hz), +6.5 dB (10 kHz) (volume: -30 dB)
Equalizer (5-Band Graphic Equalizer):	
Frequency	80 Hz/250 Hz/800 Hz/ 2.5 kHz/8 kHz
Equalization range	±12 dB (2 dB step)
Subwoofer (mono):	
Frequency	50 Hz/63 Hz/80 Hz/100 Hz/ 125 Hz/160 Hz/200 Hz
Slope	-6 dB/oct, -12 dB/oct
Gain	+6 dB to -24 dB
Phase	Normal/Reverse

### USB

USB standard specification	USB 2.0 full speed
Maximum current supply	1 A
USB Class	MSC (Mass Storage Class)
File system	FAT12, FAT16, FAT32
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver. 7, 7.1, 8, 9, 10, 11, 12 (2 ch audio) (Windows Media Player)
WAV signal format	Linear PCM & MS ADPCM (Non-compressed)

### FM tuner

Frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	9 dBf (0.8 μV/75 Ω, mono, S/N: 30 dB)
Signal-to-noise ratio	72 dB (IEC-A network)

### MW tuner

Frequency range	531 kHz to 1 602 kHz (9 kHz) 530 kHz to 1 640 kHz (10 kHz)
Usable sensitivity	25 μV (S/N: 20 dB)
Signal-to-noise ratio	62 dB (IEC-A network)

### AM tuner

Frequency range	531 kHz to 1 602 kHz (9 kHz) 530 kHz to 1 640 kHz (10 kHz)
Usable sensitivity	25 μV (S/N: 20 dB)
Signal-to-noise ratio	62 dB (IEC-A network)

### SW tuner

Frequency range	2 300 kHz to 7 735 kHz (2 300 kHz to 2 495 kHz, 2 940 kHz to 4 215 kHz, 4 540 kHz to 5 175 kHz, 5 820 kHz to 6 455 kHz, 7 100 kHz to 7 735 kHz) 9 500 kHz to 21 975 kHz (9 500 kHz to 10 135 kHz, 11 580 kHz to 12 215 kHz, 13 570 kHz to 13 870 kHz, 15 100 kHz to 15 735 kHz, 17 500 kHz to 17 985 kHz, 18 015 kHz to 18 135 kHz, 21 340 kHz to 21 975 kHz)
Usable sensitivity	28 μV (S/N: 20 dB)
Signal-to-noise ratio	62 dB (IEC-A network)

### Bluetooth

Version	Bluetooth 3.0 certified
Output power	+4 dBm Maximum (Power class 2)

### Note

Specifications and the design are subject to modifications without notice.

## 2.2 DISC/CONTENT FORMAT

Made for



iPod



iPhone



The Bluetooth word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Pioneer Corporation is under license. Other trademarks and trade names are those of their respective owners.



## 3. BASIC ITEMS FOR SERVICE

### 3.1 CHECK POINTS AFTER SERVICING

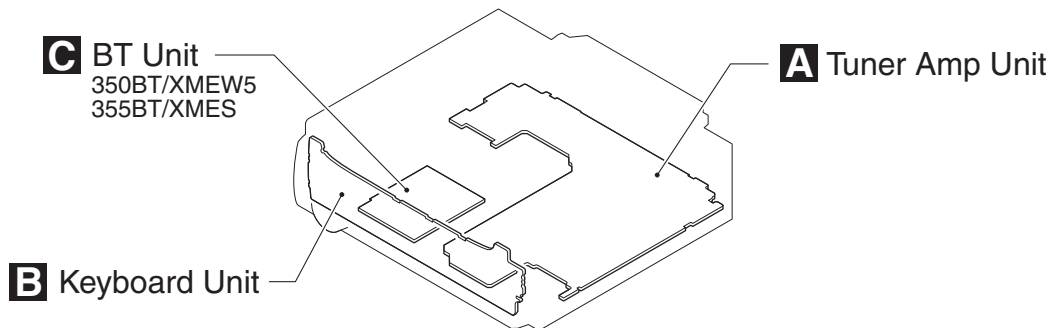
To keep the product quality after servicing, please confirm following check points.

No.		Procedures	Item to be confirmed
1		Confirm whether the customer complain has been solved. If the customer complain occurs with the specific media, use it for the operation check.	The customer complain must not be reappeared. Display, audio and operations must be normal.
2	FM/AM tuner	Check FM/AM tuner action. (Seek, Preset) Switch band to check both FM and AM.	Display, audio and operations must be normal.
3		Appearance check	No scratches or dirt on its appearance after receiving it for service.

See the table below for the items to be checked regarding audio:

Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

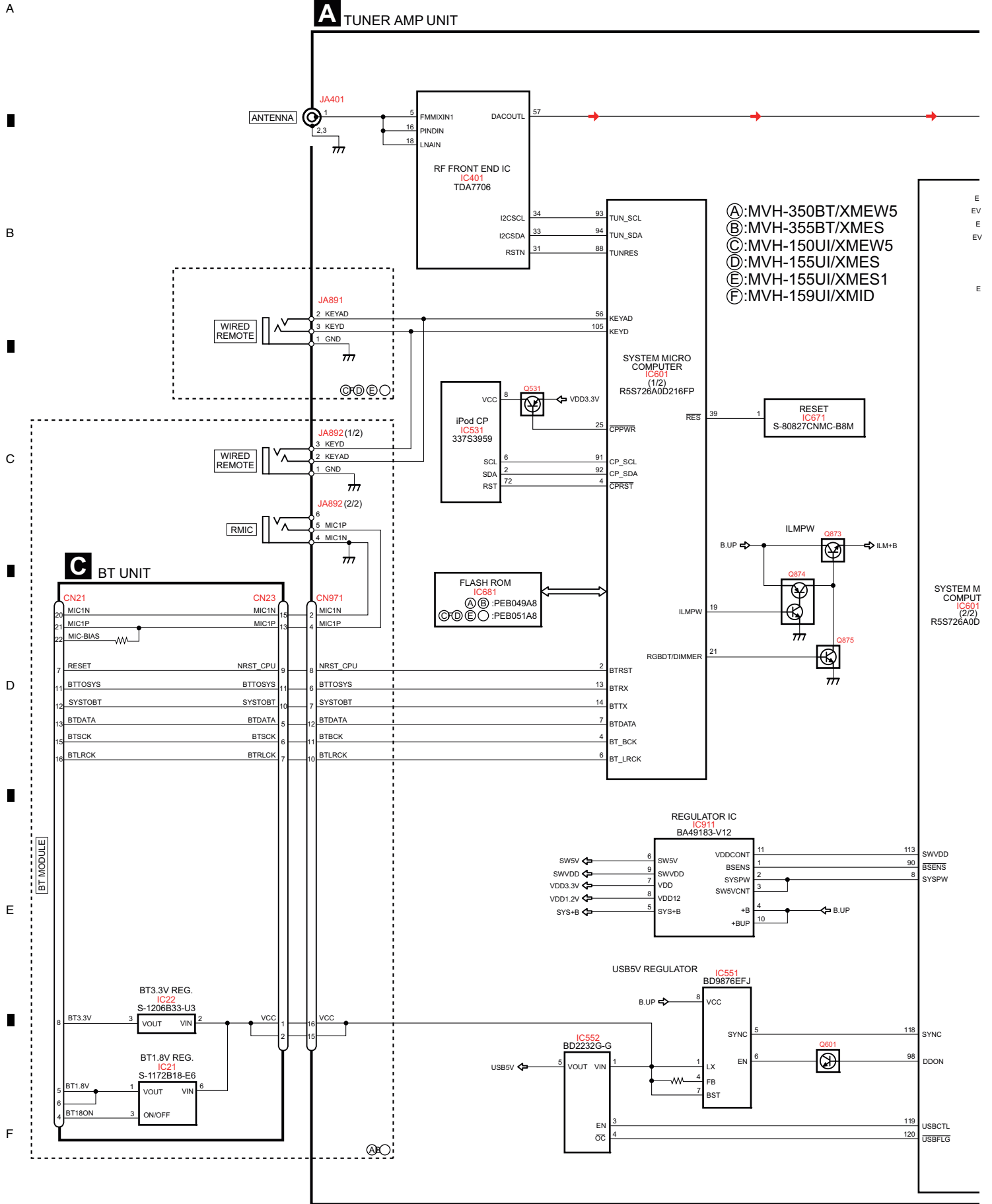
### 3.2 PCB LOCATIONS



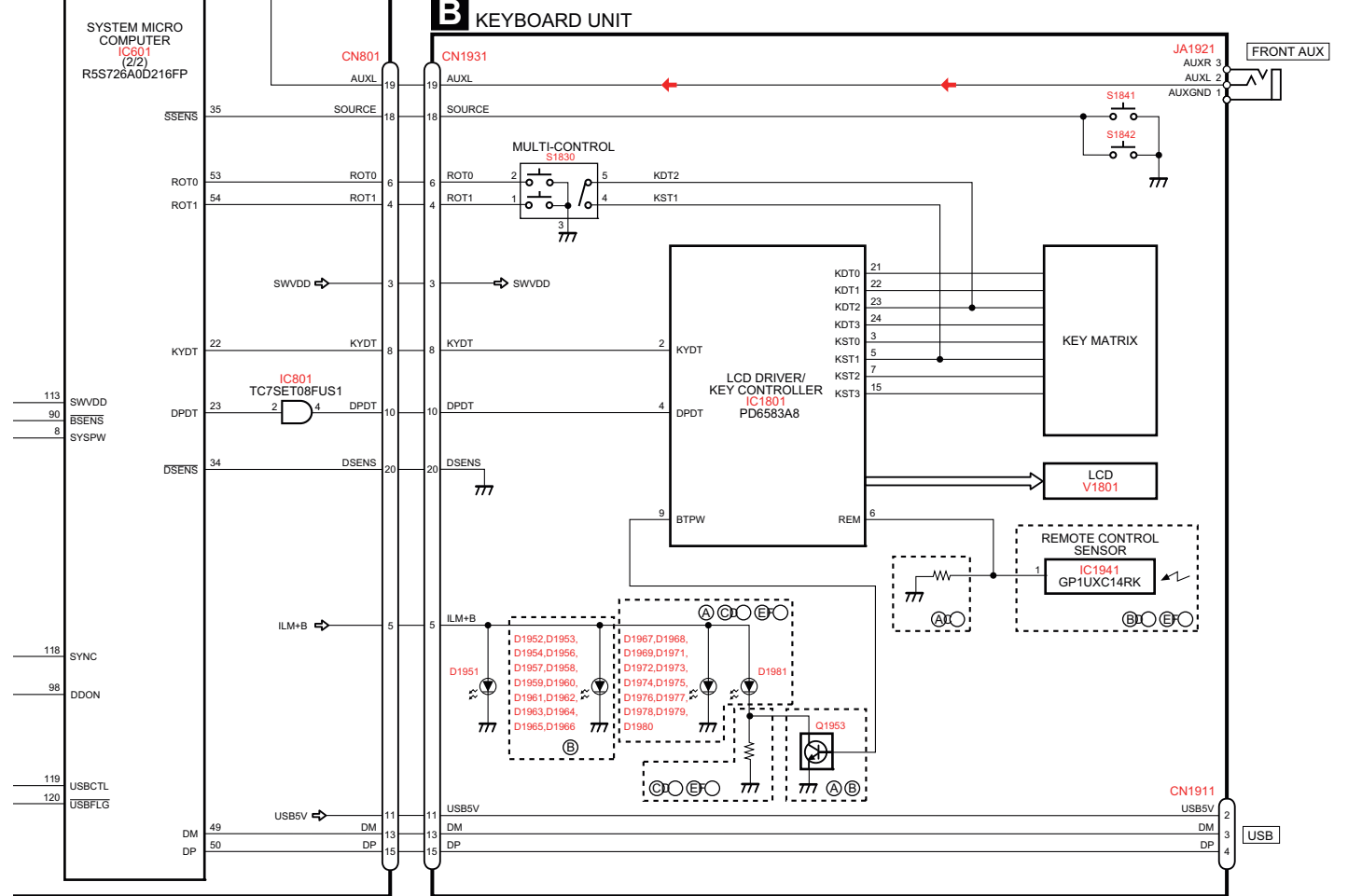
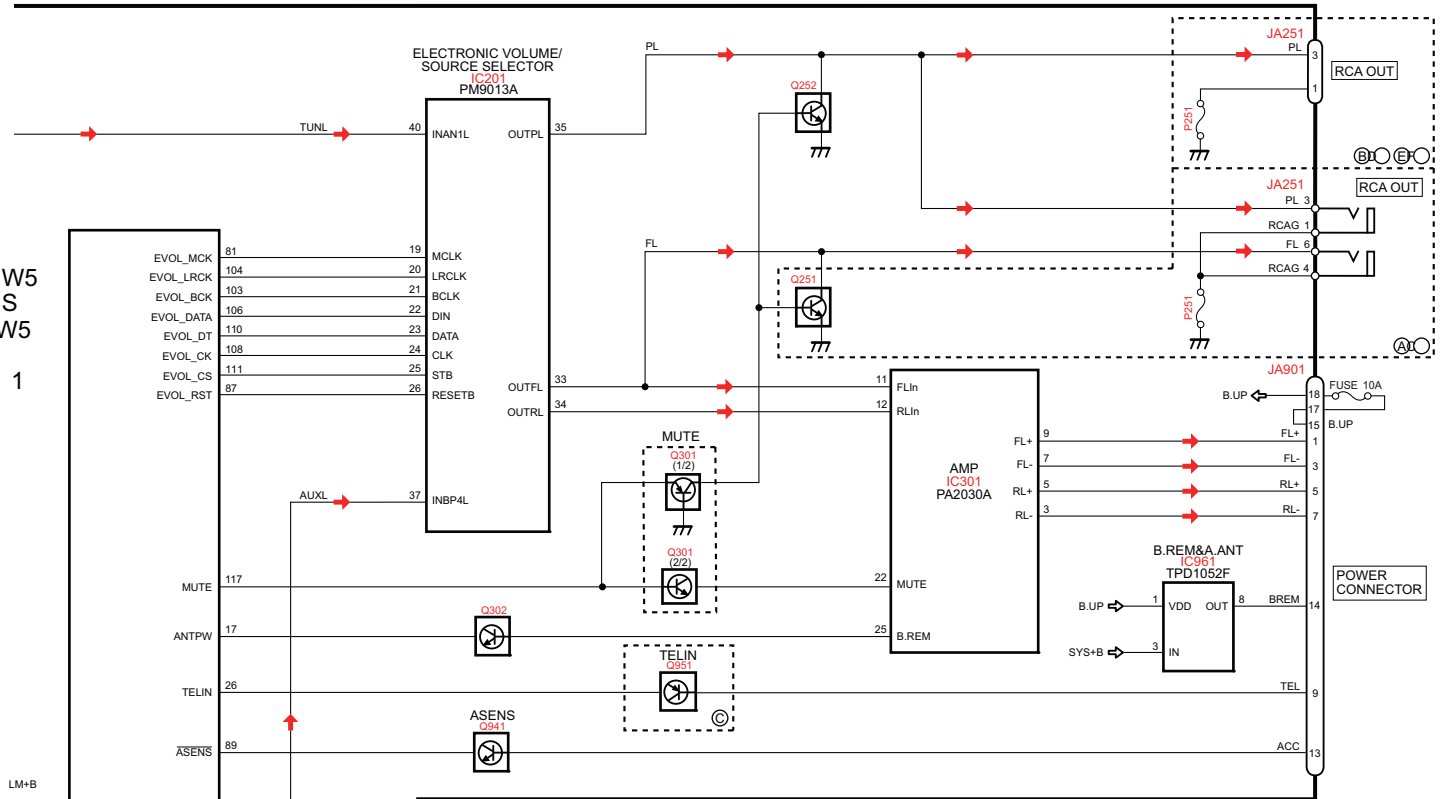
A: MVH-350BT/XMEW5  
 B: MVH-355BT/XMES  
 C: MVH-150UI/XMEW5  
 D: MVH-155UI/XMES  
 E: MVH-155UI/XMES1  
 F: MVH-159UI/XMID

Unit Number : QWM3482(A)  
 Unit Number : QWM3483(B)  
 Unit Number : QWM3477(C)  
 Unit Number : QWM3478(D,E)  
 Unit Number : QWM3479(F)  
 Unit Name : Tuner Amp Unit  
 Unit Number :  
 Unit Name : Keyboard Unit  
 Unit Number : QWM3533(A,B)  
 Unit Name : BT Unit

# 4. BLOCK DIAGRAM

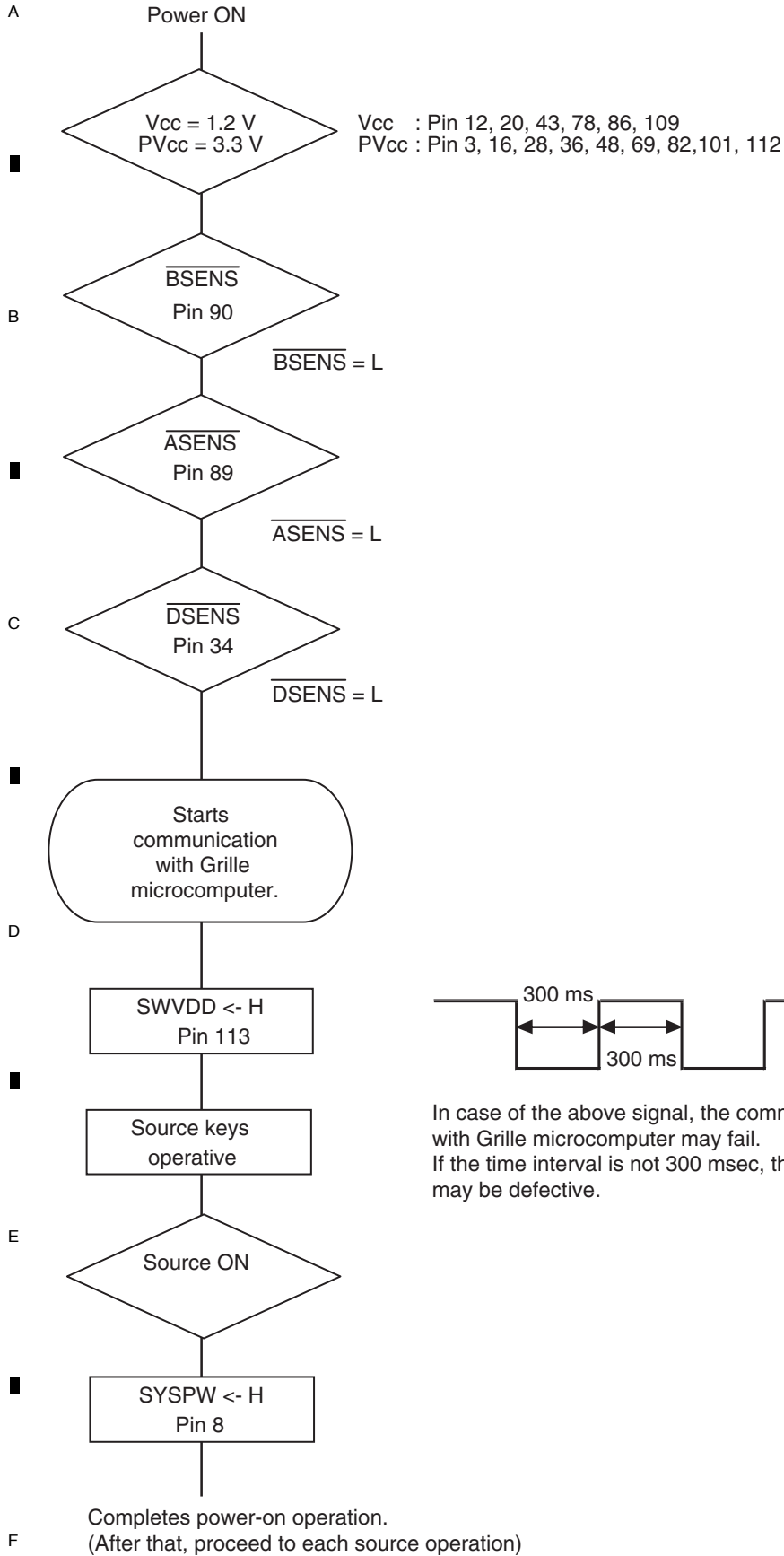


W5  
S  
W5  
1



# 5. DIAGNOSIS

## 5.1 OPERATIONAL FLOWCHART



In case of the above signal, the communication with Grille microcomputer may fail.  
If the time interval is not 300 msec, the oscillator may be defective.

## 5.2 ERROR CODE LIST

### USB storage device/iPod

Message	Cause	Action
<b>FORMAT READ</b>	Sometimes there is a delay between the start of playback and when you start to hear any sound.	Wait until the message disappears and you hear sound.
<b>NO AUDIO</b>	There are no songs.  The connected USB storage device has security enabled.	Transfer the audio files to the USB storage device and connect.  Follow the USB storage device instructions to disable the security.
<b>SKIPPED</b>	The connected USB storage device contains files embedded with Windows MediaäD RM 9/10.	Play an audio file not embedded with Windows Media DRM 9/10.
<b>PROTECT</b>	All the files in the USB storage device are embedded with Windows Media DRM 9/10.	Transfer audio files not embedded with Windows Media DRM 9/10 to the USB storage device and connect.
<b>N/A USB</b>	The USB device connected to is not supported by this unit.	Connect a USB Mass Storage Class compliant device. Disconnect your device and replace it with a compatible USB storage device.
<b>CHECK USB</b>	The USB connector or USB cable has short-circuited.	Check that the USB connector or USB cable is not caught in something or damaged.
<b>CHECK USB</b>	The connected USB storage device consumes more than maximum allowable current.	Disconnect the USB storage device and do not use it. Turn the ignition switch to OFF, then to ACC or ON and then connect only compliant USB storage devices.

Message	Cause	Action
<b>CHECK USB</b>	The iPod operates correctly but does not charge.	Make sure the connection cable for the iPod has not shorted out (e.g., not caught in metal objects). After checking, turn the ignition switch OFF and back ON, or disconnect the iPod and reconnect.
<b>ERROR-19</b>	Communication failed.  iPod failure.	Perform one of the following operations. –Turn the ignition switch OFF and back ON. –Disconnect the USB storage device. –Change to a different source. Then, return to the USB source.  Disconnect the cable from the iPod. Once the iPod's main menu is displayed, reconnect the iPod and reset it.
<b>ERROR-23</b>	USB storage device was not formatted with FAT12, FAT16 or FAT32.	USB storage device should be formatted with FAT12, FAT16 or FAT32.
<b>ERROR-16</b>	The iPod firmware version is old.  iPod failure.	Update the iPod version.  Disconnect the cable from the iPod. Once the iPod's main menu is displayed, reconnect the iPod and reset it.
<b>STOP</b>	There are no songs in the current list.	Select a list that contains songs.
<b>NOT FOUND</b>	No related songs.	Transfer songs to the iPod.

Bluetooth device

Message	Cause	Action
---------	-------	--------

A	<b>ERROR-10</b> The power failed for the Bluetooth module of this unit.	Turn the ignition switch OFF and then to ACC or ON. If the error message is still displayed after performing the above action, please contact your dealer or an authorized Pioneer Service Station.
B		

C

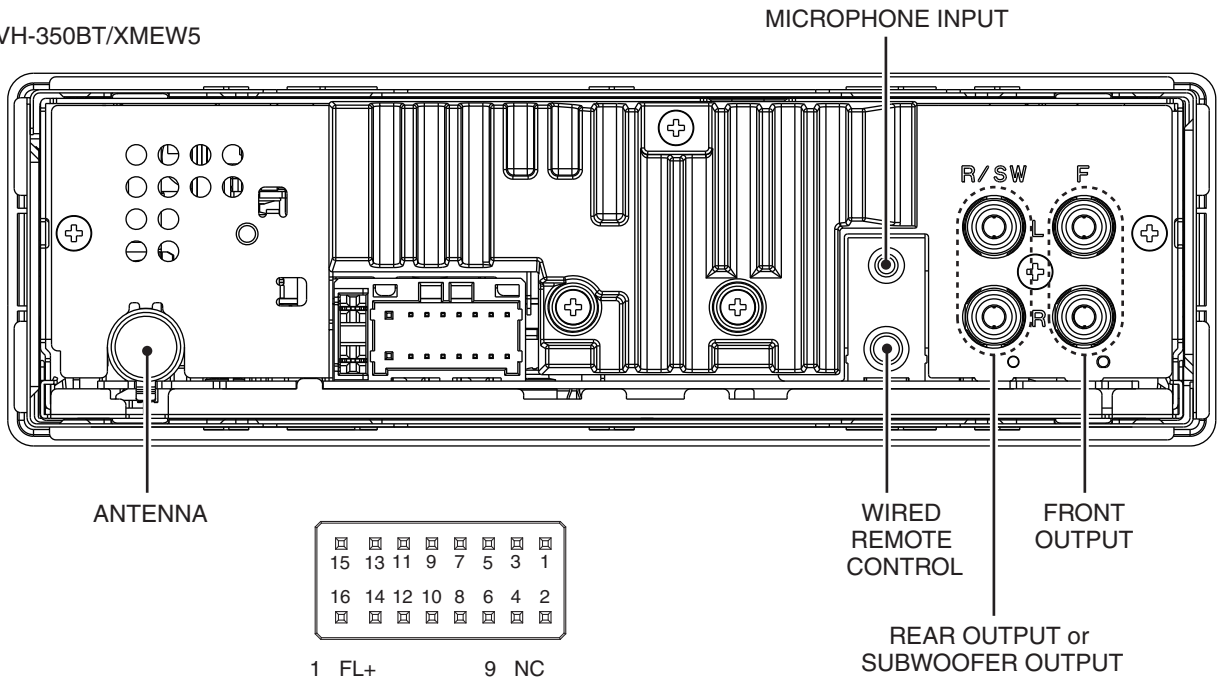
D

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# 5.3 CONNECTOR FUNCTION DESCRIPTION

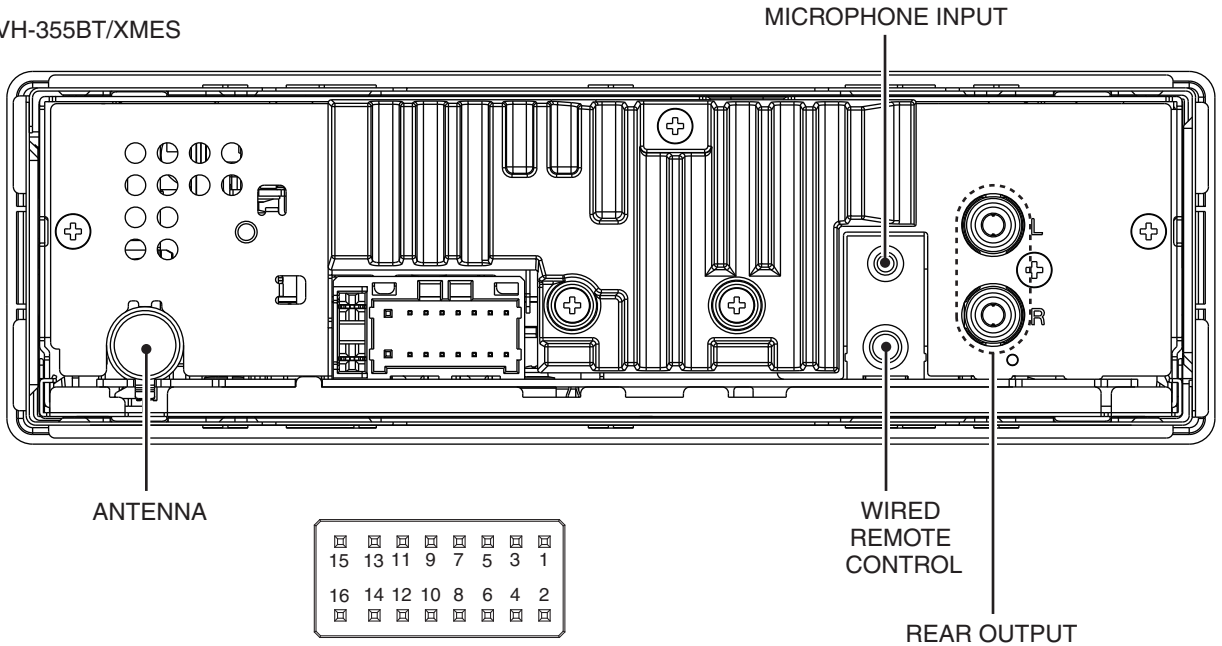
MVH-350BT/XMEW5



15	13	11	9	7	5	3	1
16	14	12	10	8	6	4	2

- |       |          |
|-------|----------|
| 1 FL+ | 9 NC     |
| 2 FR+ | 10 NC    |
| 3 FL- | 11 NC    |
| 4 FR- | 12 NC    |
| 5 RL+ | 13 ACC   |
| 6 RR+ | 14 B.REM |
| 7 RL- | 15 B.UP  |
| 8 RR- | 16 GND   |

MVH-355BT/XMES

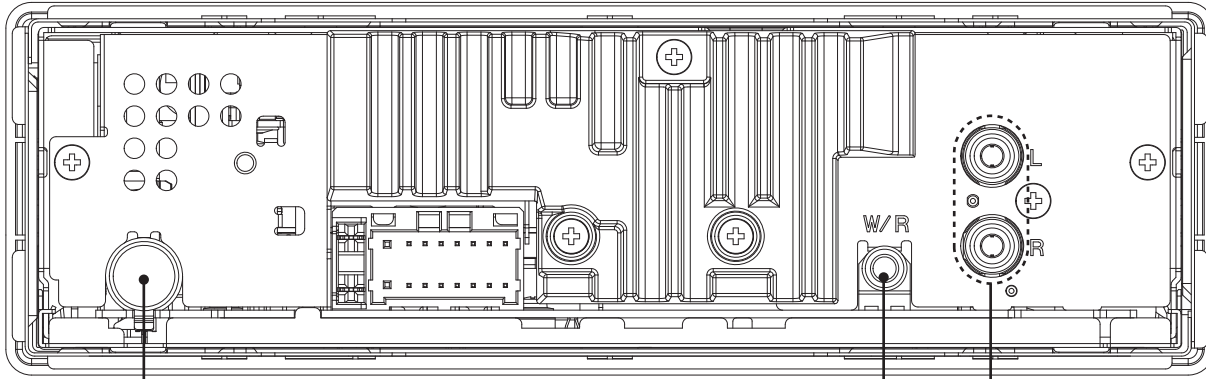


15	13	11	9	7	5	3	1
16	14	12	10	8	6	4	2

- |       |          |
|-------|----------|
| 1 FL+ | 9 NC     |
| 2 FR+ | 10 NC    |
| 3 FL- | 11 NC    |
| 4 FR- | 12 NC    |
| 5 RL+ | 13 ACC   |
| 6 RR+ | 14 B.REM |
| 7 RL- | 15 B.UP  |
| 8 RR- | 16 GND   |

MVH-155UI/XMES, MVH-155UI/XMES1, MVH-159UI/XMID

A



ANTENNA

15	13	11	97	5	31		
16	14	12	10	8	6	4	2

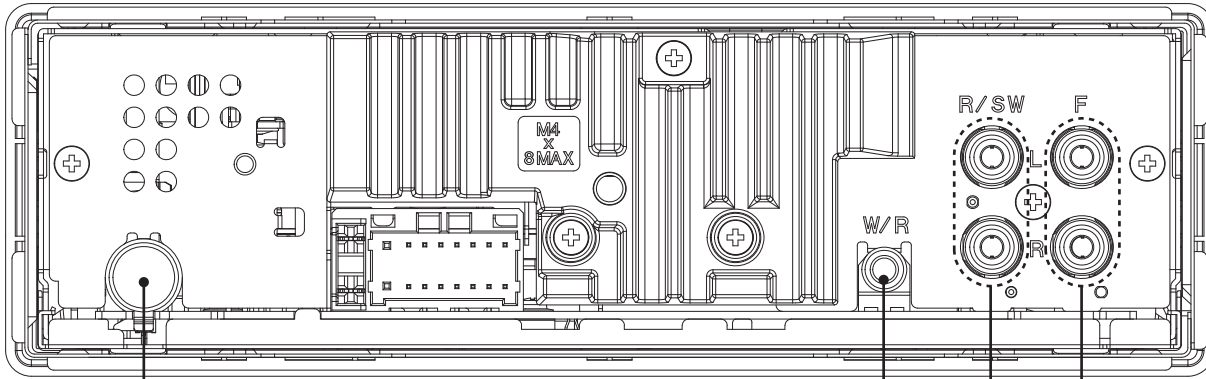
REAR OUTPUT  
WIRED REMOTE CONTROL

1 FL+	9 NC
2 FR+	10 NC
3 FL-	11 NC
4 FR-	12 NC
5 RL+	13 ACC
6 RR+	14 B.REM
7 RL-	15 B.UP
8 RR-	16 GND

C

MVH-150UI/XMEW5

D



ANTENNA

15	13	11	9	7	5	3	1
16	14	12	10	8	6	4	2

WIRED REMOTE CONTROL  
FRONT OUTPUT  
REAR OUTPUT or SUBWOOFER OUTPUT

1 FL+	9 NC
2 FR+	10 NC
3 FL-	11 NC
4 FR-	12 NC
5 RL+	13 ACC
6 RR+	14 B.REM
7 RL-	15 B.UP
8 RR-	16 GND

F

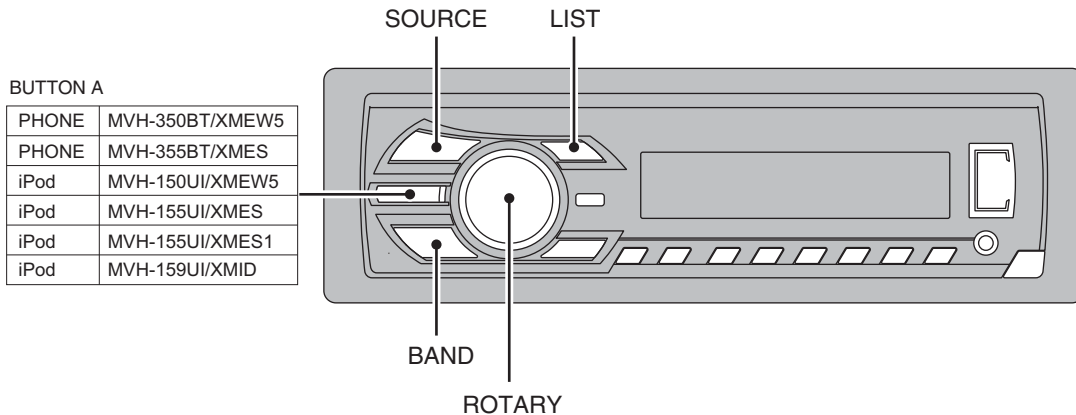


# 6. SERVICE MODE

## 6.1 DISPLAY TEST MODE 1

### [How to enter Test mode]

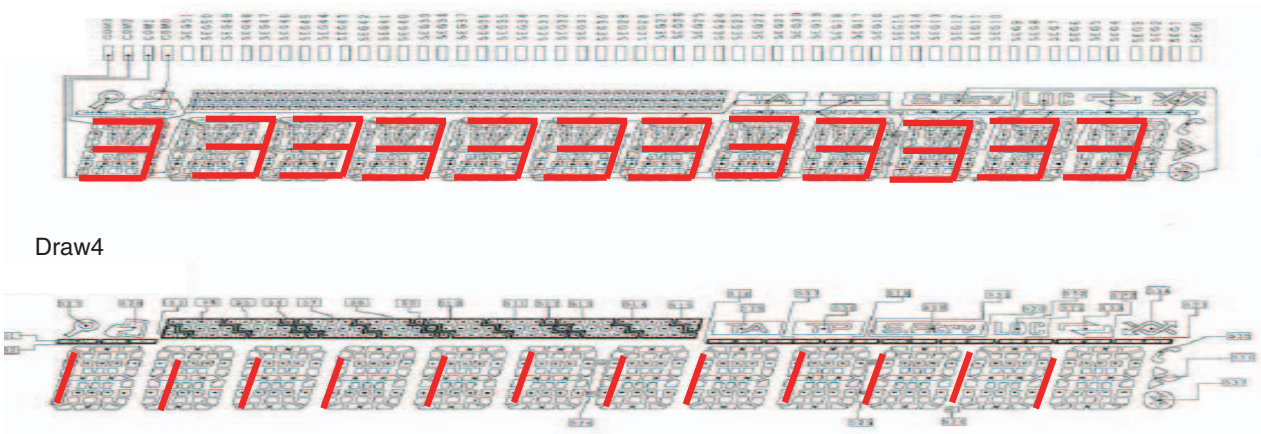
Press and hold BUTTON A and "LIST" buttons together, and turn BUP and ACC on.



Conf. item	Operate	Grille condition	
		Show LCD	ILM
All light up	BUTTON A + LIST	Draw 1	ILM(1)
All light off	SOURCE	No light Draw2	No light
Conf. LCD pattern 1 (* And change ILM color)	BAND	Draw 3	ILM(2) (If not have, ILM(1) light on)
Conf. LCD pattern 2	ROTARY center	Draw 4	ILM(1)

### Drawings Style

- Draw1 ALL light up
- Draw2 ALL light off
- Draw3



## 6.2 DISPLAY TEST MODE 2

The information such as the system microcomputer version is checked.

### [How to enter Test mode]

Press and hold "1" and "3" buttons together, and turn BUP and ACC on.

### [Operation key]

Operation key	Processing	Remarks
① + ③	Enter display test mode Switch to next test mode	

### [Test items]

Start display test mode.  
Press and hold "1" and "3" buttons together, and turn BUP and ACC on.

System Version information is displayed.

S | \$ \$ \$ \$ | # # # |

\$ PD number For PEA010A, "010A" is displayed  
# System microcomputer version For Ver.7.01, "701" is displayed

Switching to next display by pressing "①" + "③" buttons together.

Display is normally updated

Product operation is performed as usual, in appearance.  
Switching to next display by pressing "①" + "③" buttons together.

Display update is stopped

The screen gets still when entering this item.  
Switching to next display by pressing "①" + "③" buttons together.

Key Illumination	Icon
Off	All off
On (an initial value)	All off
On (an initial value or setting value of default menu)	All off
On (an initial value or setting value of default menu)	On (lighting condition of normal times)
On (an initial value or setting value of default menu)	On (state when entering test mode)

\* Initial condition

## 6.3 SOFTWARE VERSION UP METHOD

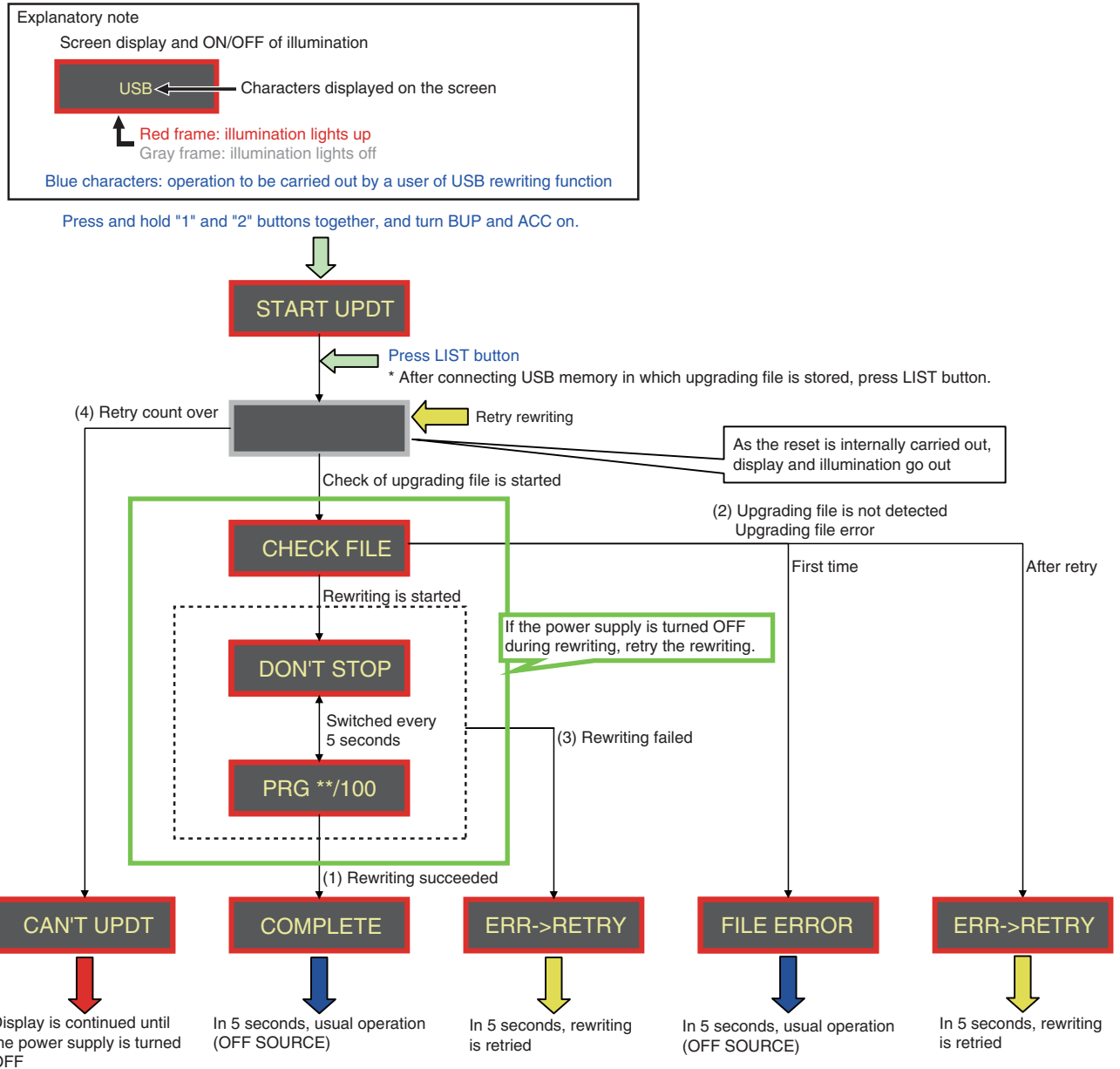
### Overview

This mode is used for upgrading the MCU software of system using USB memory.

### How to enter in USB rewriting mode

Press and hold "1" and "2" buttons together, and turn BUP and ACC on.

### USB rewriting operation flow



### Result of rewriting

(1) Rewriting succeeded	Displayed when USB rewriting is normally terminated. In 5 seconds, usual operation (OFF SOURCE) is started.
(2) Upgrading file error Upgrading file is not detected	Displayed when there is no upgrading file in USB memory or the data of upgrading file is different. In 5 seconds, usual operation (OFF SOURCE) is started. If the upgrading file error is detected or the upgrading file is not detected after the rewriting is retried, the rewriting is failed. In 5 seconds, rewriting is retried.
(3) Rewriting failed	Displayed when the writing of upgrading file in serial Flash is not normally terminated. Or, displayed if the upgrading file error is detected or the upgrading file is not detected after the rewriting is retried. In 5 seconds, rewriting is retried.
(4) Retry count over	Displayed when the retry becomes unavailable because the retry count is exceeded. The display is continued until the power supply is turned OFF. If the power supply is turned ON again, the display is not changed. The upgrading using USB is disabled, so it is necessary to write programs in serial Flash using E10A.

# 7. DISASSEMBLY

While the photograph shown is slightly different from this model in shape, the disassembly procedure is the same.

## ● Removing the Panel Assy (Fig.1)

- ➔ 1 Release the two latches.
- ➔ 2 Release the two latches and then remove the Panel Assy.

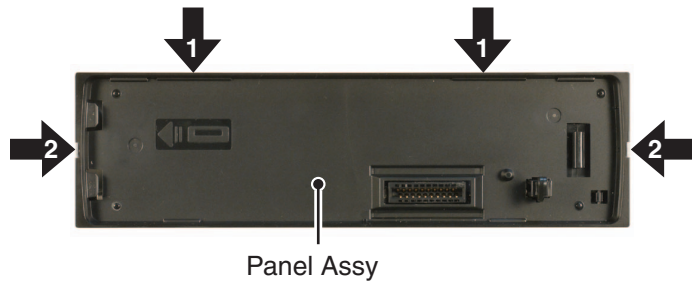
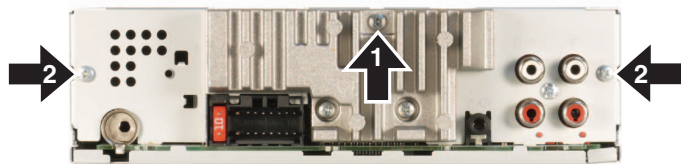


Fig.1

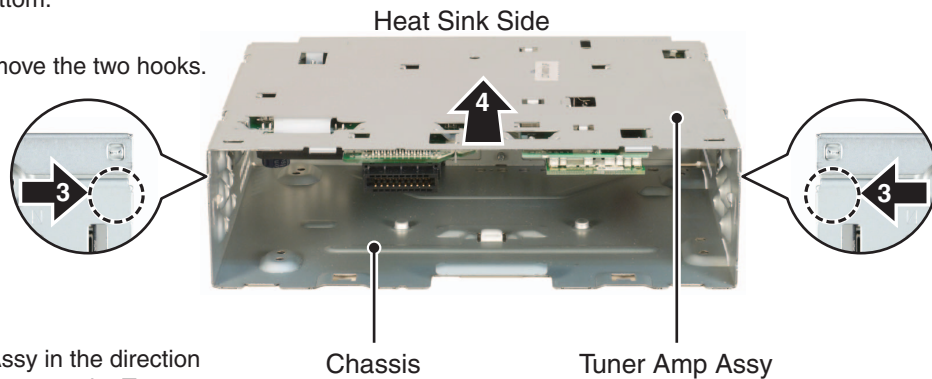
## ● Removing the Tuner Amp Assy (Fig.2)

- ➔ 1 Remove the screw.
- ➔ 2 Remove the two screws.



The Chassis side is made a bottom.

- ➔ 3 Push the area and remove the two hooks.



- ➔ 4 Slide the Tuner Amp Assy in the direction of the arrow and then remove the Tuner Amp Assy.

Fig.2

## ● Removing the Tuner Amp Unit and the BT Unit (Fig.3)

- ➔ 1 Disconnect the connector.
- ➔ 2 Remove the two screws.
- ➔ 3 Remove the two screws and then remove the Tuner Amp Unit.
- ➔ 4 Remove the screw and then remove the BT Unit.

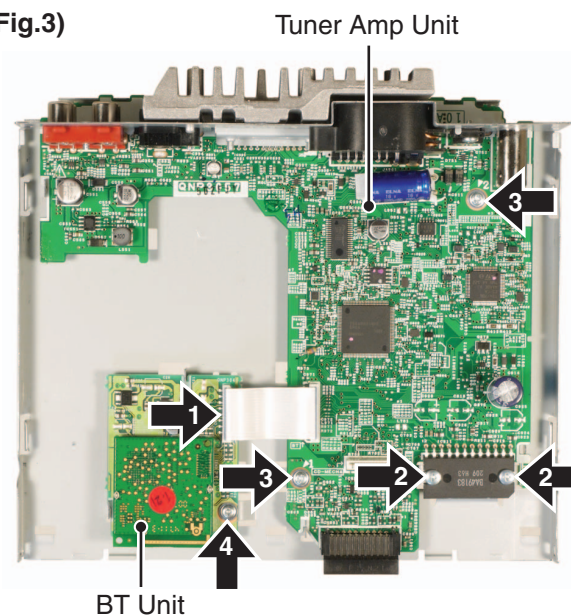


Fig.3

### ● Disassembling the Panel Part (Fig.4, 5)

1. Remove the arm while bending the rib of the panel upward.

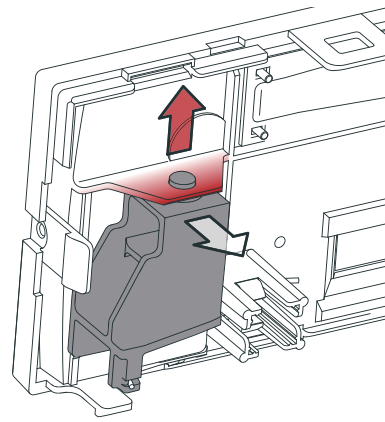


Fig.4

2. Press the upside hook and the bottom side hook of the button at the same time, and pull out the button.

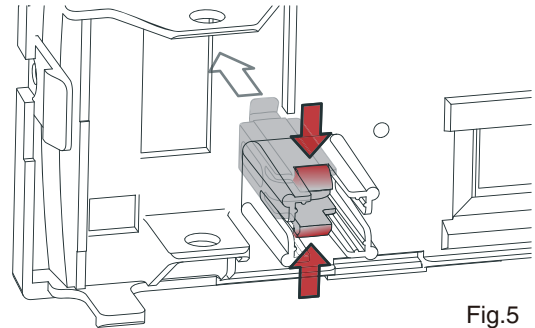


Fig.5

### ● Assembling the Panel Part (Fig.6, 7, 8)

1. Attach the button from the front side of the panel.

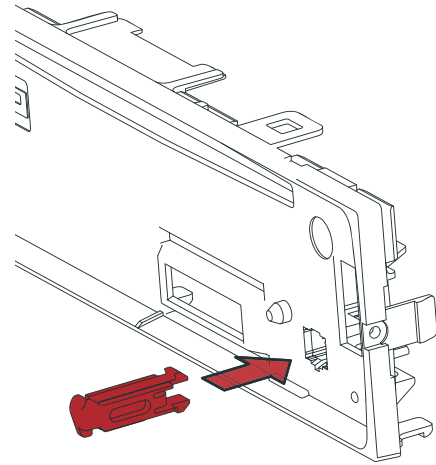


Fig.6

2. Attach the spring to the arm as shown in the figure.

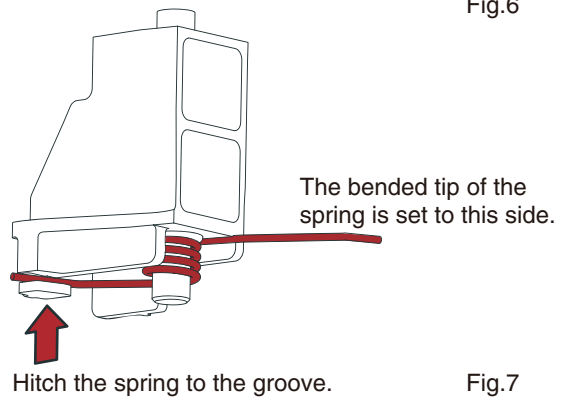


Fig.7

3. Fit the spring in the groove at the position shown in the figure.

4. Fit the boss on the lower side of the arm in the lower hole of the panel, and then warp the rib on the panel in the direction shown in the figure and fit the boss of the arm in the panel.

A

B

C

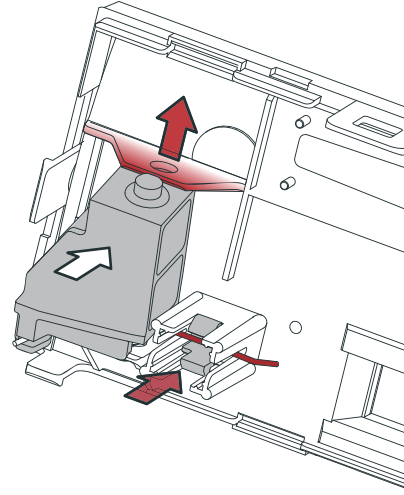


Fig.8

## 8. EACH SETTING AND ADJUSTMENT

### 8.1 PCL OUTPUT CONFIRMATION



#### ● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the TESTIN IC601(Pin 99) terminal to H.

The clock signal is output from the PCL terminal IC601(Pin115).

The frequency of the clock signal is 600 kHz that is divided by 20th of the oscillation frequency of X601 (12MHz).

The clock signal should be 600 kHz(- 25 Hz, + 25 Hz).

If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

F

A

B

C

D

E

F





**(1) EXTERIOR SECTION PARTS LIST**

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Protector	CHP4595	10	Case Assy	QXA3129
2	Microphone Assy	See Contrast table (2)	11	Polyethylene Bag	See Contrast table (2)
3	Holder	See Contrast table (2)	12	Screw	See Contrast table (2)
4	Cushion	See Contrast table (2)	13	Card Remote Control Unit	See Contrast table (2)
5	Cord Assy	See Contrast table (2)	14-1	Owner's Manual	See Contrast table (2)
6	Polyethylene Bag	QEG3001	* 14-2	Warranty Card	See Contrast table (2)
7	Unit Box	See Contrast table (2)	* 14-3	Service Network	See Contrast table (2)
8	Contain Box	See Contrast table (2)			
9	Handle	QNC3021			

**(2) CONTRAST TABLE**

MVH-350BT/XMEW5, MVH-355BT/XMES, MVH-150UI/XMEW5, MVH-155UI/XMES, MVH-155UI/XMES1 and MVH-159UI/XMID are constructed the same except for the following:

Mark	No.	Description	MVH-350BT/XMEW5	MVH-355BT/XMES	MVH-150UI/XMEW5	MVH-155UI/XMES
5	2	Microphone Assy	CPM1083	CPM1083	Not used	Not used
	3	Holder	CZN7192	CZN7192	Not used	Not used
	4	Cushion	CZN7193	CZN7193	Not used	Not used
	4	Cord Assy	QDP3014	CDP1480	QDP3014	CDP1480
7	Unit Box	QHG3336	QHG3337	QHG3331	QHG3332	
8	Contain Box	QHL3336	QHL3337	QHL3331	QHL3332	
11	11	Polyethylene Bag	Not used	CEG1160	Not used	CEG1160
	12	Screw	Not used	TRZ50P080FTC	Not used	TRZ50P080FTC
13	Card Remote Control Unit	Not used	QXE1044	Not used	QXE1047	
14-1	Owner's Manual	QRD3133	QRD3134	QRD3133	QRD3134	
*	14-2	Warranty Card	CRY1376	Not used	CRY1376	Not used
*	14-3	Service Network	Not used	Not used	Not used	Not used

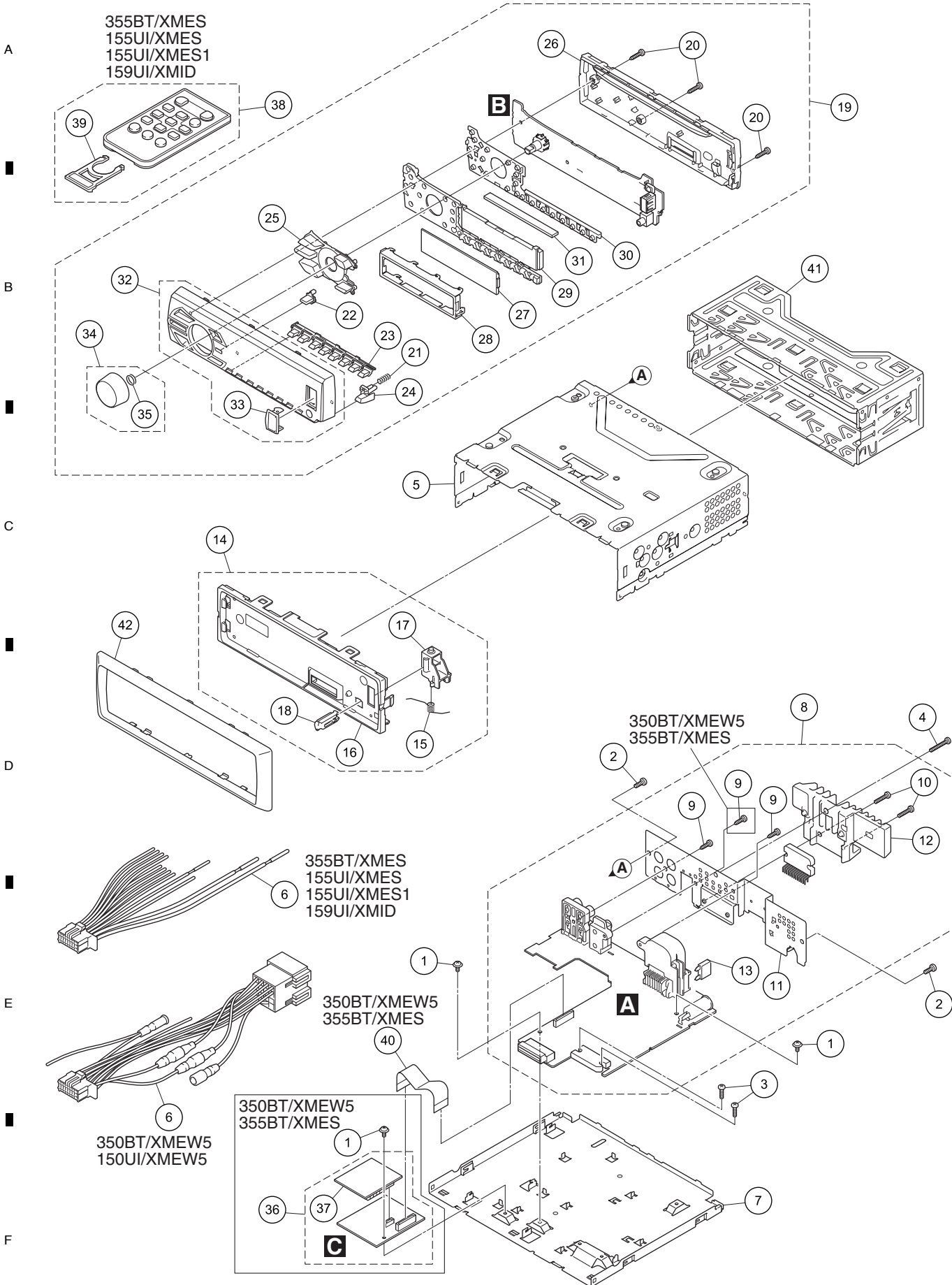
Mark	No.	Description	MVH-155UI/XMES1	MVH-159UI/XMID
5	2	Microphone Assy	Not used	Not used
	3	Holder	Not used	Not used
	4	Cushion	Not used	Not used
	4	Cord Assy	CDP1480	CDP1480
7	Unit Box	QHG3333	QHG3334	
8	Contain Box	QHL3333	QHL3334	
1	1	Polyethylene Bag	CEG1160	CEG1160
12	Screw	TRZ50P080FTC	TRZ50P080FTC	
13	Card Remote Control Unit	QXE1047	QXE1047	
14-1	Owner's Manual	QRD3134	QRB3254	
*	14-2	Warranty Card	CRY1250	CRY1304
*	14-3	Service Network	CRY1251	CRY1305

**Owner's Manual, Installation Manual**

Part No.	Language
QRD3133	English, French, Italian, Spanish(Espanol), German, Dutch, Russian
QRD3134	English, Spanish(Espanol), Portuguese(B), Traditional Chinese, Arabic, Persian
QRB3254	English

# 9.2 EXTERIOR

355BT/XMES  
155UI/XMES  
155UI/XMES1  
159UI/XMID



**(1) EXTERIOR SECTION PARTS LIST**

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Screw	ASZ26P050FTC	22	Button (DISP)	QAC3080
2	Screw	BSZ26P060FTC	23	Button (< > 1-6)	QAC3081
3	Screw	BSZ26P080FTC	24	Button (DETACH)	QAC3082
4	Screw	BSZ26P120FTC	25	Button (SRC, BAND)	See Contrast table (2)
5	Chassis	CNA3181			
			26	Cover	QNS3327
6	Cord Assy	See Contrast table (2)	27	Segment LCD (V1801)	CAW2024
7	Case	See Contrast table (2)	28	Holder	QNC3045
8	Tuner Amp Unit	See Contrast table (2)	29	Lighting Conductor	QNV3051
9	Screw	BPZ26P080FTC	30	Contact Rubber	QNV3052
1	0 Screw	BSZ26P120FTC			
			31	Rubber Connector	QNV3056
11	Holder	See Contrast table (2)	32	Grille Unit	See Contrast table (2)
12	Heat Sink	See Contrast table (2)	33	Door	QAT3006
△	13 Fuse (10 A)	YEK5001	34	Knob Unit	See Contrast table (2)
1	4 Panel Assy	QXA3537	35	Spring	YBL5010
1	5 Spring	QBH3001			
			36	BT Unit	See Contrast table (2)
1	6 Panel	QNS3289	37	BT Module	See Contrast table (2)
1	7 Arm	QNV3025	38	Card Remote Control Unit	See Contrast table (2)
1	8 Button	QNV3026	39	Cover	See Contrast table (2)
19	Detachable Grille Assy	See Contrast table (2)	40	FFC	See Contrast table (2)
2	0 Screw	BPZ20P100FTC			
			41	Holder	QNC3020
2	1 Spring	CBH2210	42	Panel	QNS3387

**(2) CONTRAST TABLE**

MVH-350BT/XMEW5, MVH-355BT/XMES, MVH-150UI/XMEW5, MVH-155UI/XMES, MVH-155UI/XMES1 and MVH-159UI/XMID are constructed the same except for the following:

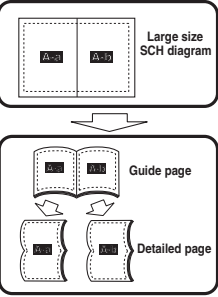
<b>Mark</b>	<b>No.</b>	<b>Description</b>	<b>MVH-350BT/XMEW5</b>	<b>MVH-355BT/XMES</b>	<b>MVH-150UI/XMEW5</b>	<b>MVH-155UI/XMES</b>
6		Cord Assy	QDP3014	CDP1480	QDP3014	CDP1480
7		Case	QNB3006	QNB3006	QNB3005	QNB3005
	8	Tuner Amp Unit	QWM3482	QWM3483	QWM3477	QWM3478
1	1	Holder	QNC3053	QNC3054	QNC3049	QNC3050
12		Heat Sink	QNR3010	QNR3002	QNR3010	QNR3002
19		Detachable Grille Assy	QXA3584	QXA3585	QXA3579	QXA3580
25		Button (SRC, BAND)	QAC3076	QAC3076	QAC3101	QAC3101
32		Grille Unit	QXA3640	QXA3641	QXA3635	QXA3636
34		Knob Unit	QXA3671	QXA3671	QXA3670	QXA3670
	36	BT Unit	QWM3533	QWM3533	Not used	Not used
	37	BT Module	CWX4294	CWX4294	Not used	Not used
38		Card Remote Control Unit	Not used	QXE1044	Not used	QXE1047
	39	Cover	Not used	CNS7068	Not used	CNS7068
	40	FFC	QDE3028	QDE3028	Not used	Not used

<b>Mark</b>	<b>No.</b>	<b>Description</b>	<b>MVH-155UI/XMES1</b>	<b>MVH-159UI/XMID</b>
6		Cord Assy	CDP1480	CDP1480
7		Case	QNB3005	QNB3005
	8	Tuner Amp Unit	QWM3478	QWM3479
1	1	Holder	QNC3050	QNC3050
12		Heat Sink	QNR3002	QNR3002
19		Detachable Grille Assy	QXA3580	QXA3581
25		Button (SRC, BAND)	QAC3101	QAC3079
32		Grille Unit	QXA3636	QXA3637
34		Knob Unit	QXA3670	QXA3673
	36	BT Unit	Not used	Not used
	37	BT Module	Not used	Not used
38		Card Remote Control Unit	QXE1047	QXE1047
39		Cover	CNS7068	CNS7068
	40	FFC	Not used	Not used

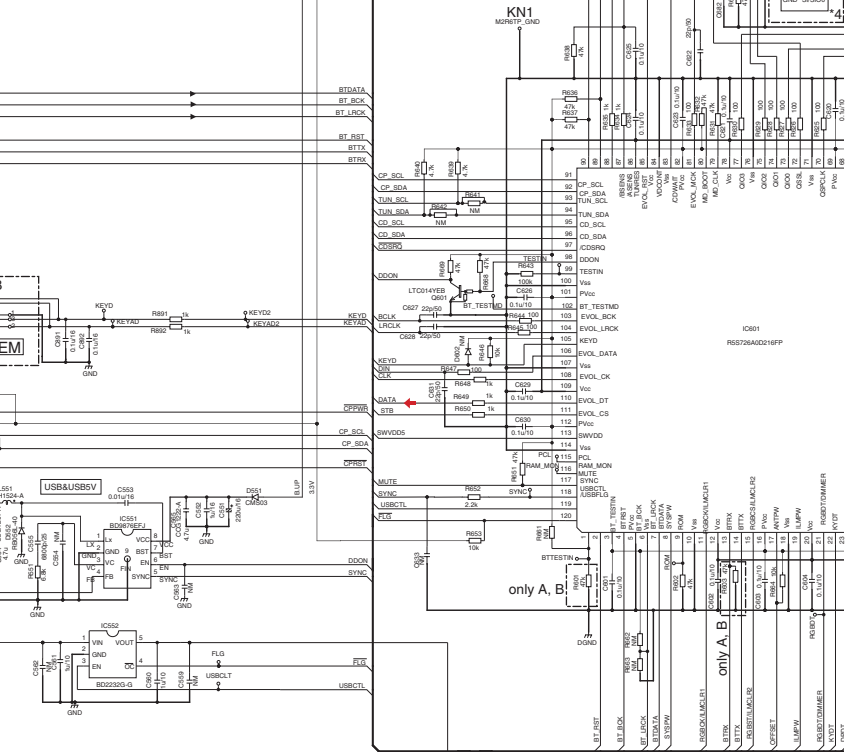
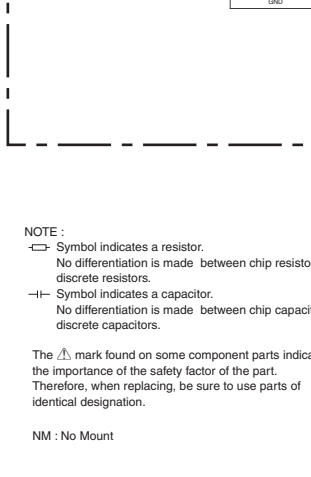
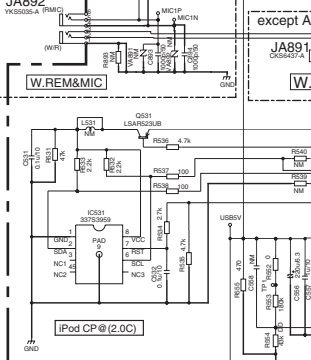
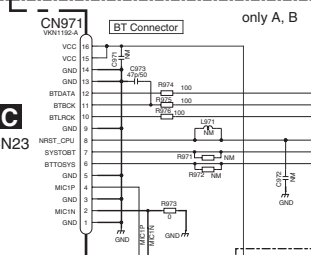
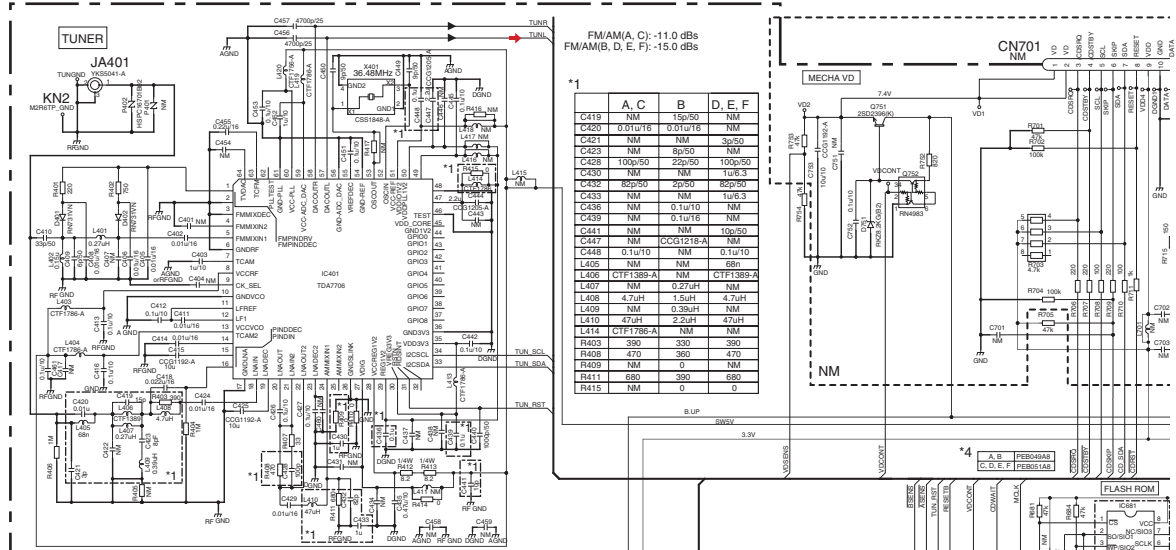
# 10. SCHEMATIC DIAGRAM

## 10.1 TUNER AMP UNIT (GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



**A-a**



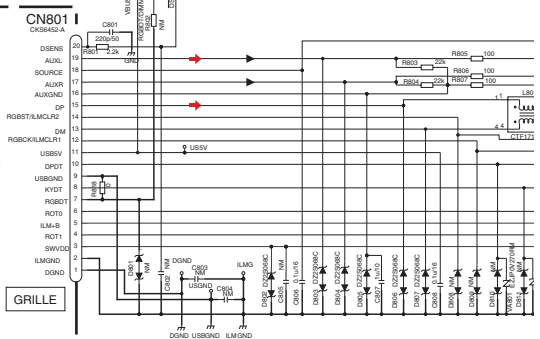
NOTE:  
 □ Symbol indicates a resistor.  
 No differentiation is made between chip resistors and discrete resistors.  
 □ Symbol indicates a capacitor.  
 No differentiation is made between chip capacitors and discrete capacitors.

The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

NM: No Mount

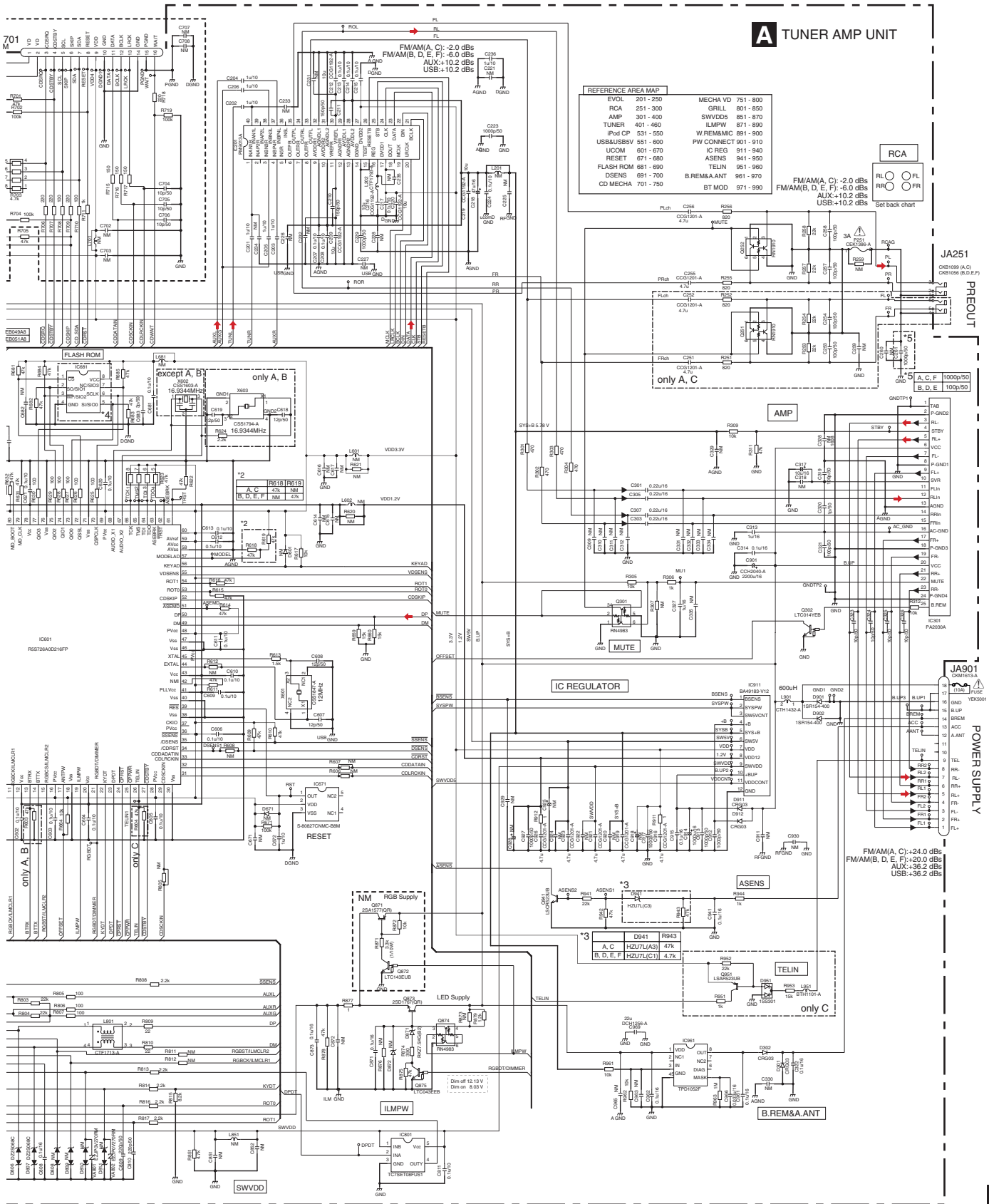
A	MVH-350BT/XMEW5
B	MVH-355BT/XMES
C	MVH-150UI/XMEW5
D	MVH-155UI/XMES
E	MVH-155UI/XMES1
F	MVH-159UI/XMID

**B**  
CN1931



**A**

# A-b



# A TUNER AMP UNIT

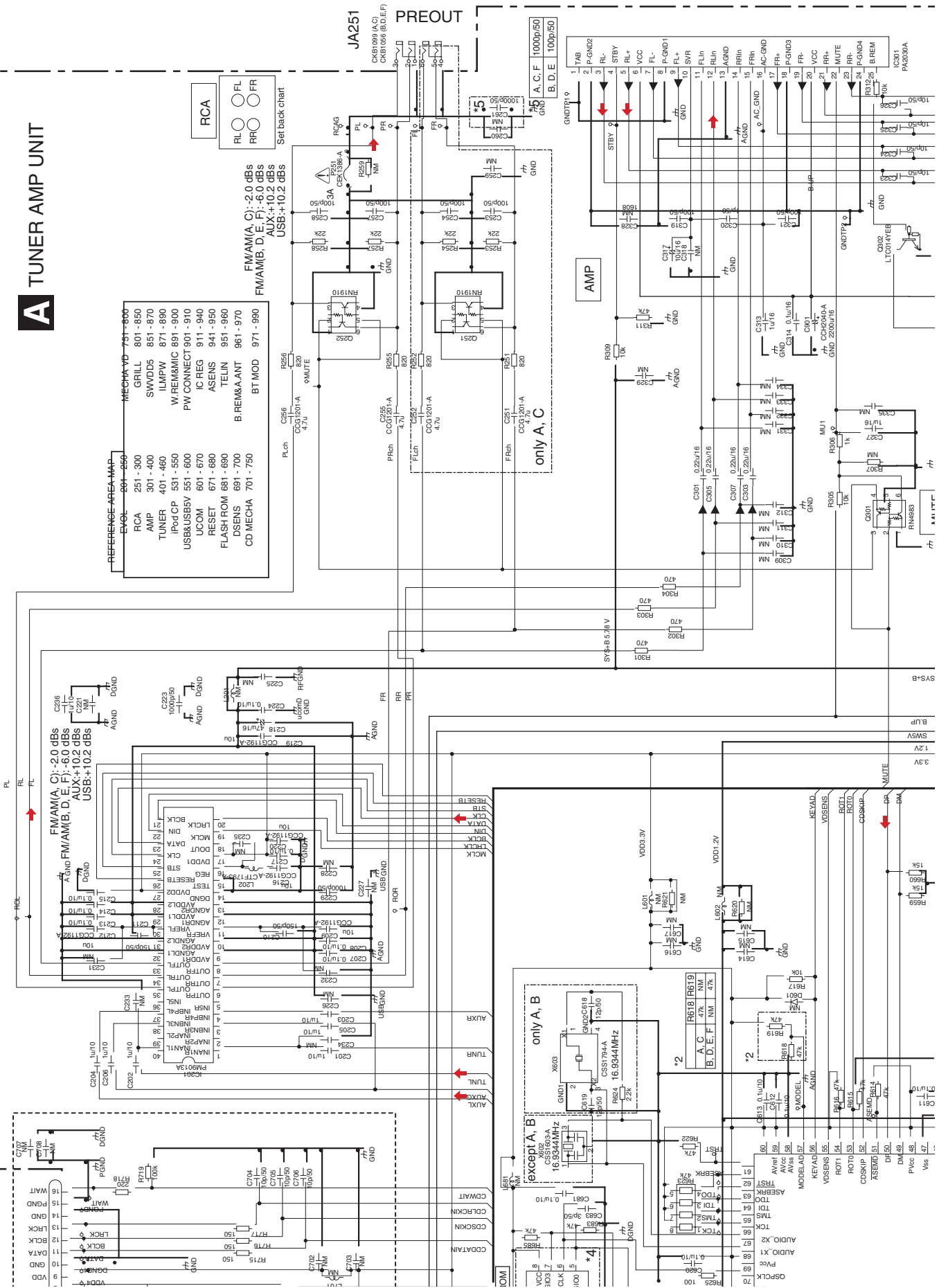
**REFERENCE-AREA-MAP**

EVOL	201-250
RCA	801-850
AMP	851-870
TUNER	871-900
W.REM&MIC	891-900
PW.CONNECT	901-910
UCOM	911-940
RESET	941-950
FLASH.ROM	951-960
DSENS	961-970
CD.MECHA	971-980

**MEDIA.VD** 731-800

GRILL	801-850
SWDDS	851-870
ILMPW	871-900
W.REM&MIC	891-900
PW.CONNECT	901-910
UCOM	911-940
RESET	941-950
FLASH.ROM	951-960
TELIN	961-970
BT.MOD	971-980

**FM/AM(A, C): -2.0 dBs**  
**FM/AM(B, D, E, F): -6.0 dBs**  
**AUX: +10.2 dBs**  
**USB: +10.2 dBs**



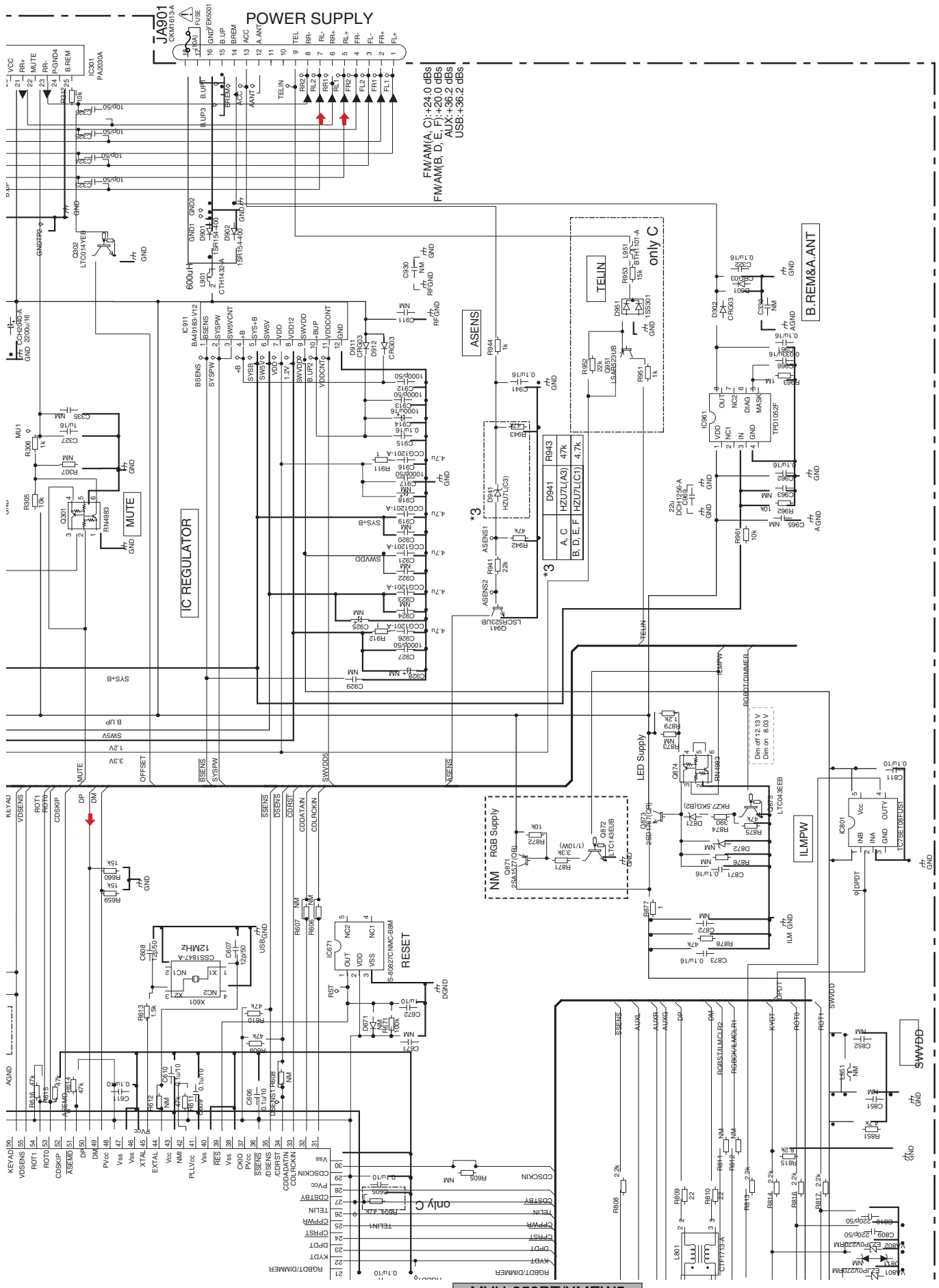
PL  
 RL  
 FL  
 FR  
 RR  
 PR  
 PLch  
 PReh  
 FRch  
 AGND  
 GND

1 2 3 4

A B C D E F

A-a A-b

A-b



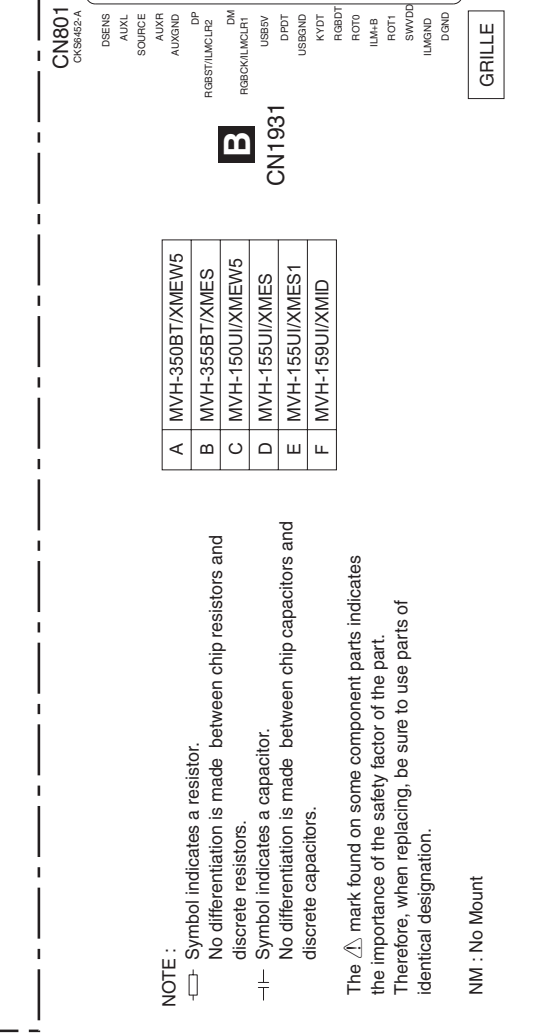
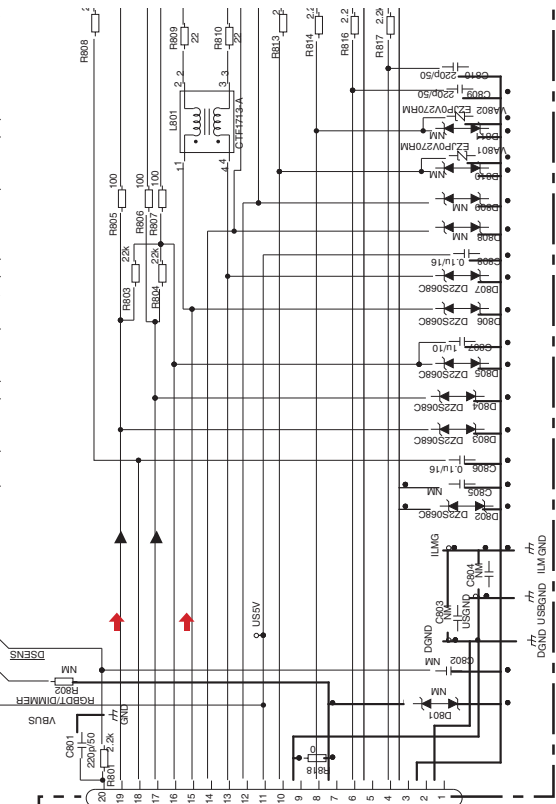
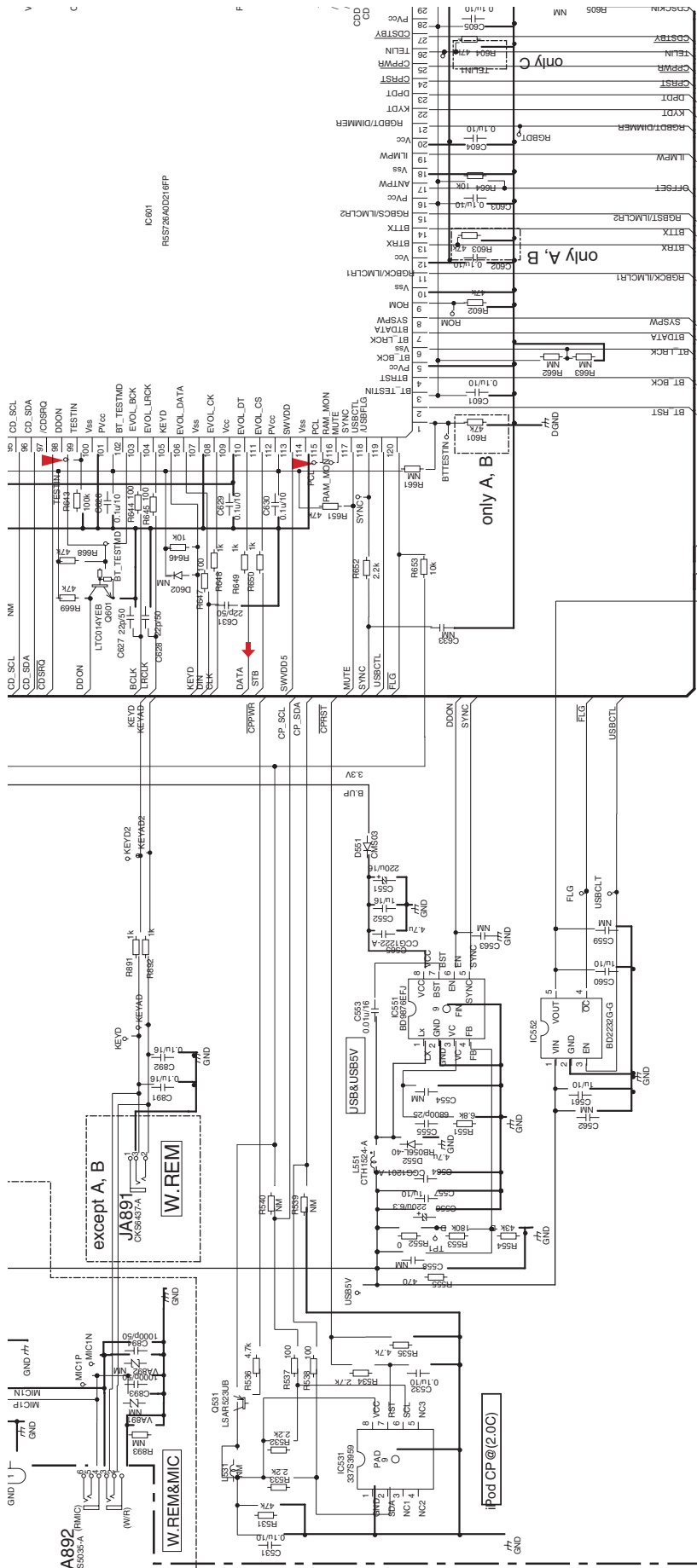
A  
 B  
 C  
 D  
 E  
 F

A-a A-b

**A-b**







A	MVH-350BT/XMEW5
B	MVH-355BT/XMES
C	MVH-150UJ/XMEW5
D	MVH-155UJ/XMES
E	MVH-155UJ/XMES1
F	MVH-159UJ/XMID

NOTE:

- Symbol indicates a resistor.
- No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor.
- No differentiation is made between chip capacitors and discrete capacitors.

The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

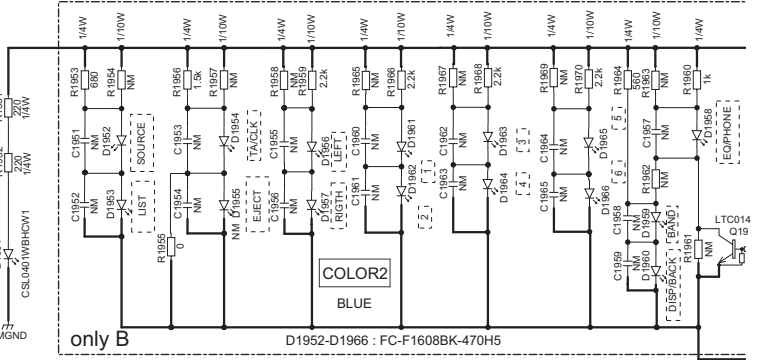
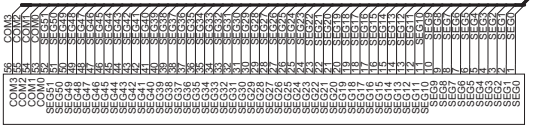
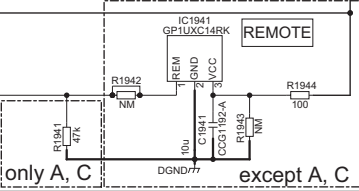
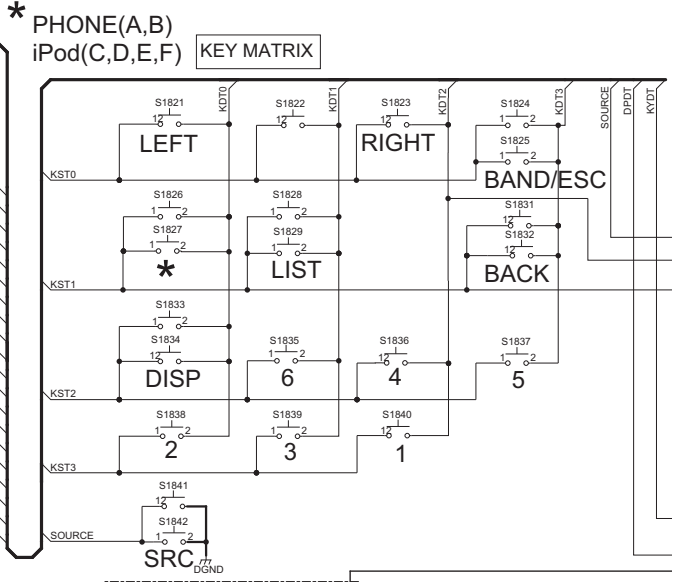
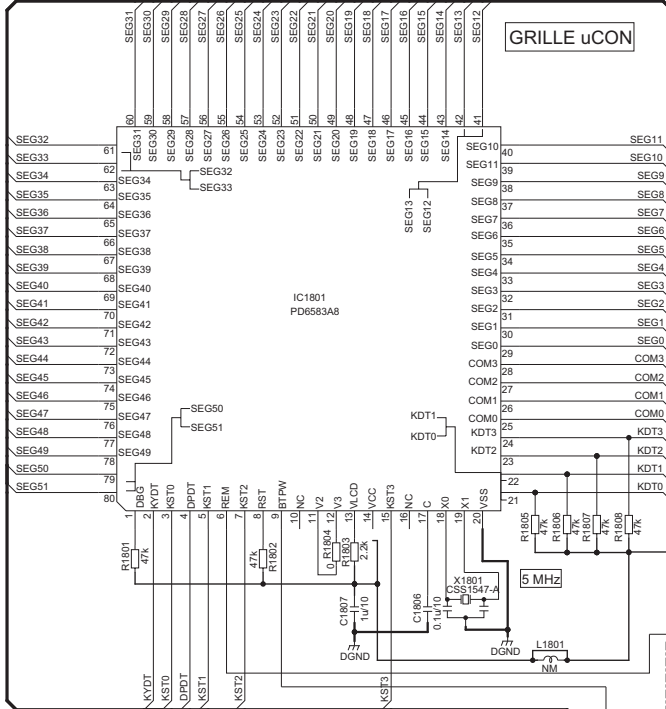
NM : No Mount

A-b

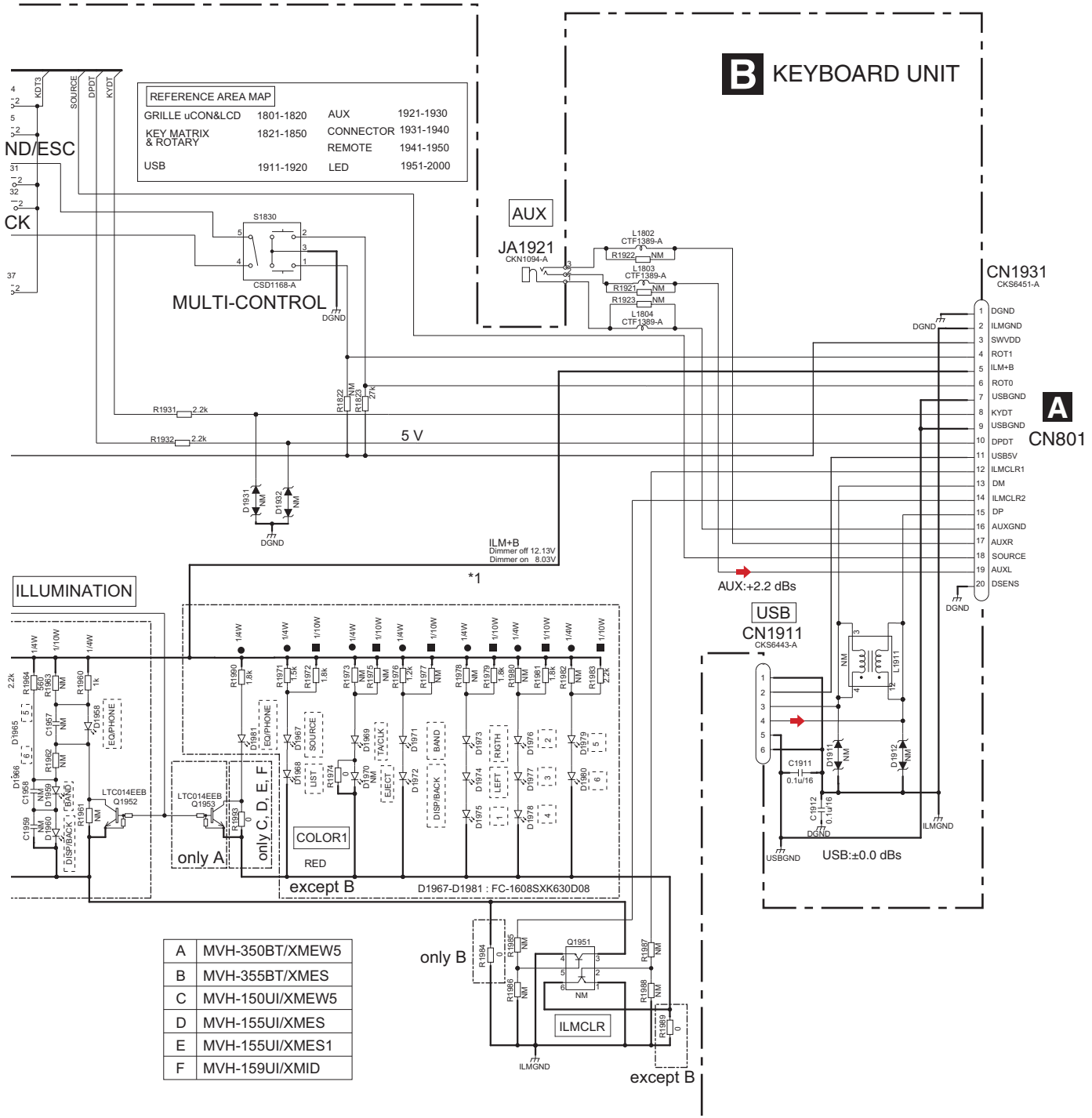
A-a

A-a

# 10.2 KEYBOARD UNIT



A  
B  
C  
D  
E  
F



# 10.3 BT UNIT

A

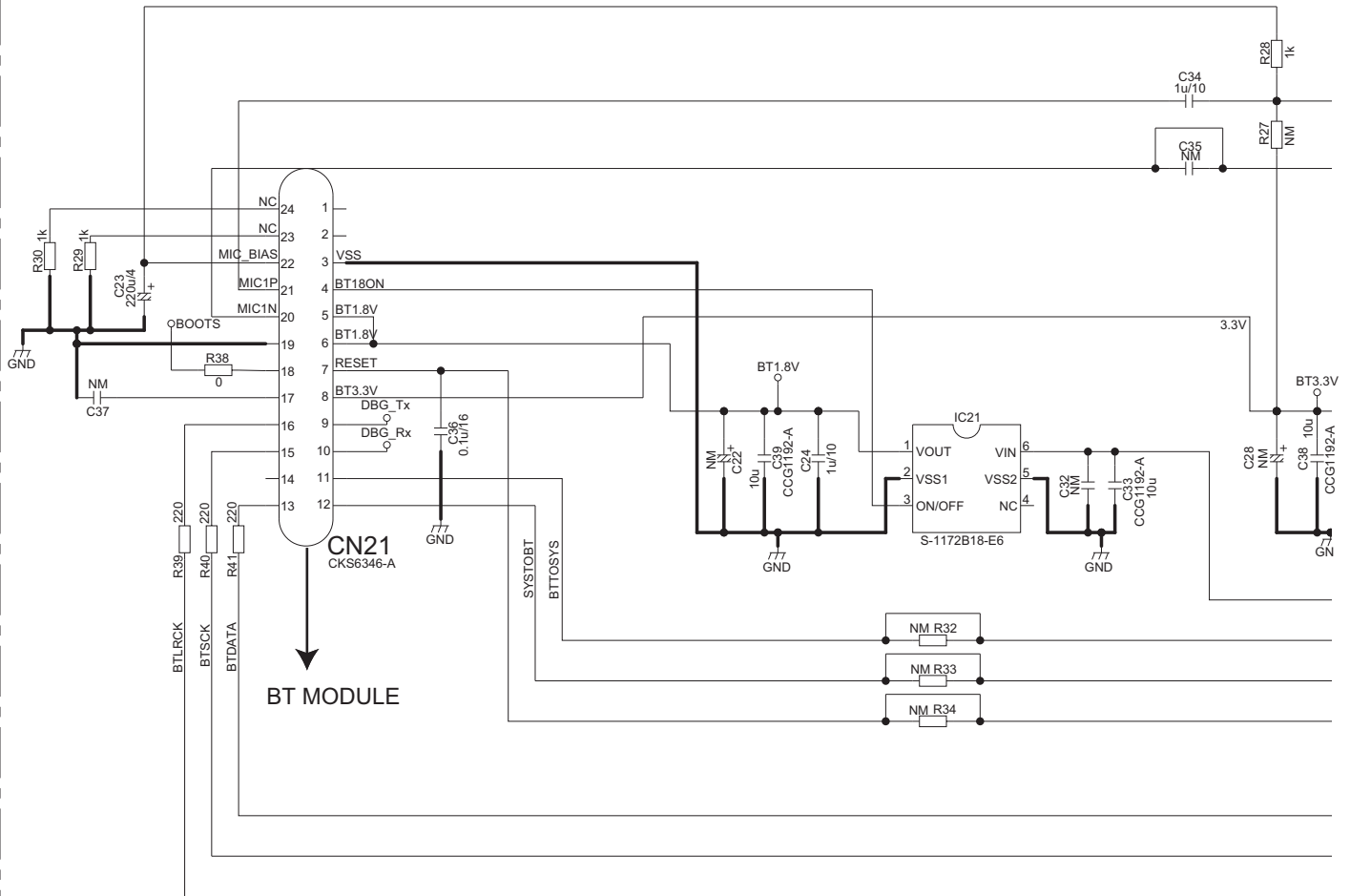
B

C

D

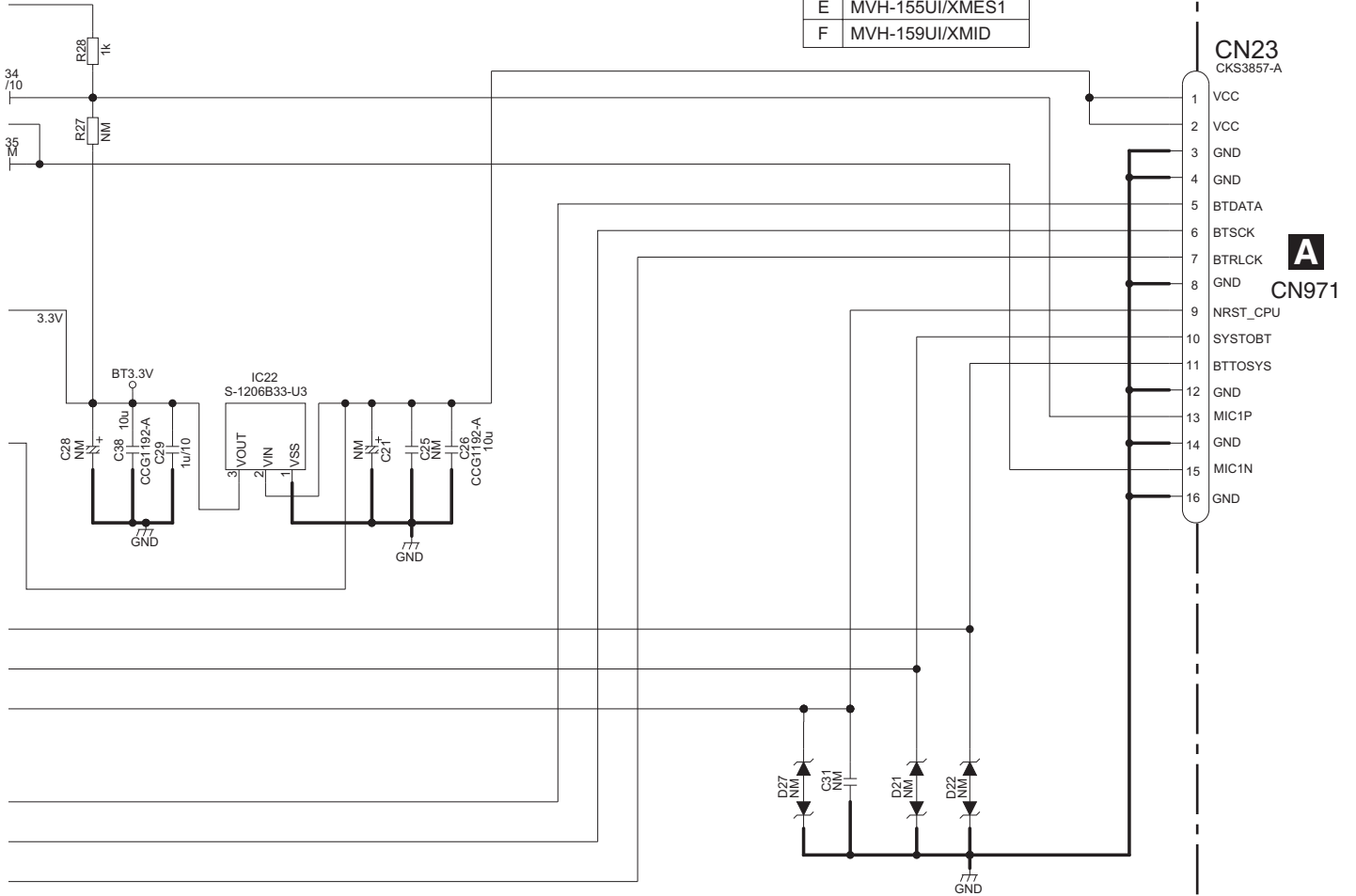
E

F



**C** BT UNIT  
(only A, B)

A	MVH-350BT/XMEW5
B	MVH-355BT/XMES
C	MVH-150UI/XMEW5
D	MVH-155UI/XMES
E	MVH-155UI/XMES1
F	MVH-159UI/XMID



# 11. PCB CONNECTION DIAGRAM

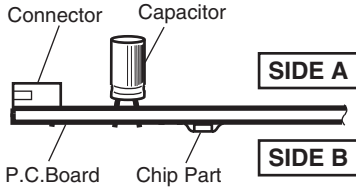
## 11.1 TUNER AMP UNIT

A

### NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination. For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams



B

C

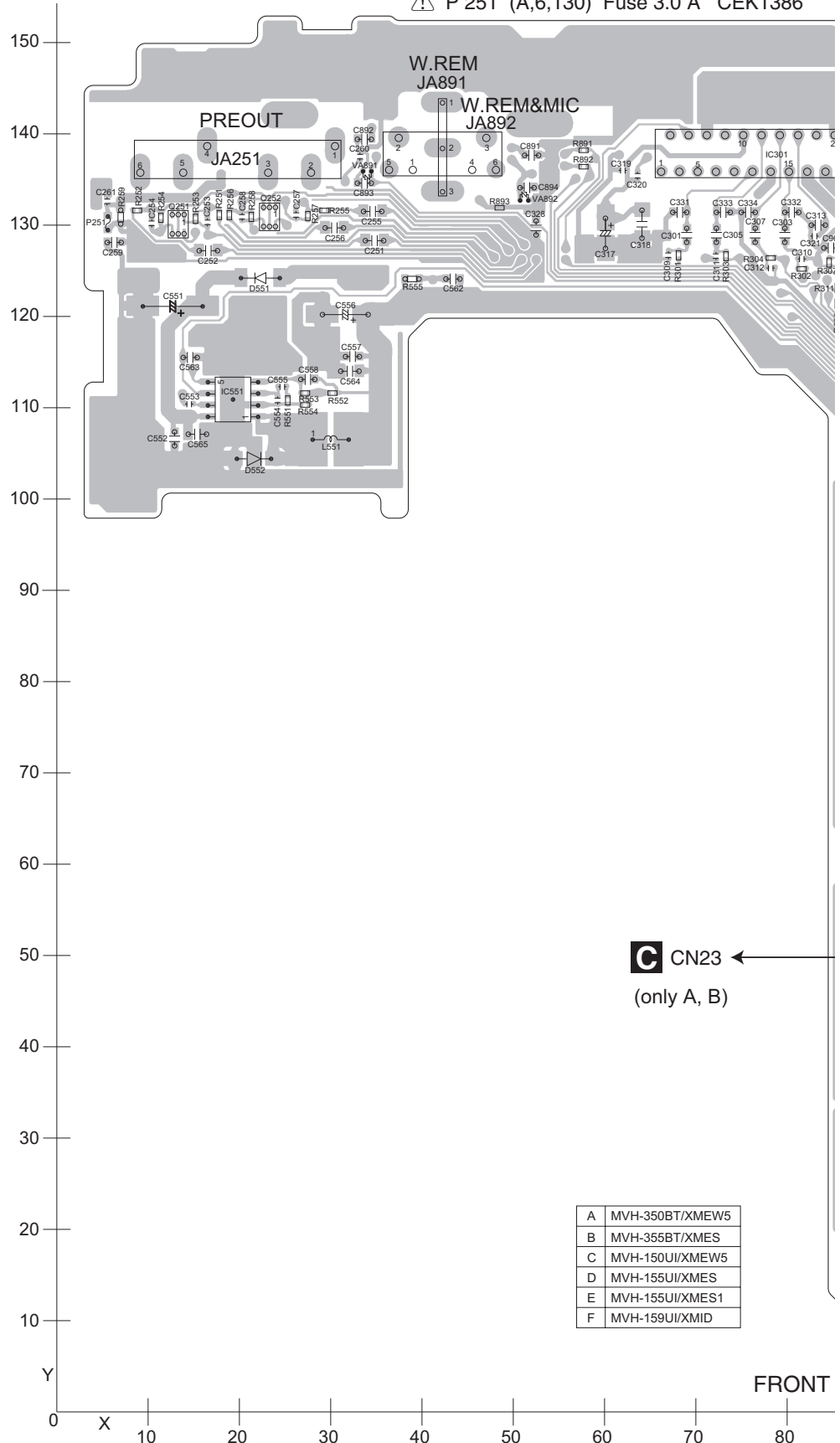
D

E

F

### **A** TUNER AMP UNIT

⚠ P 251 (A,6,130) Fuse 3.0 A CEK1386



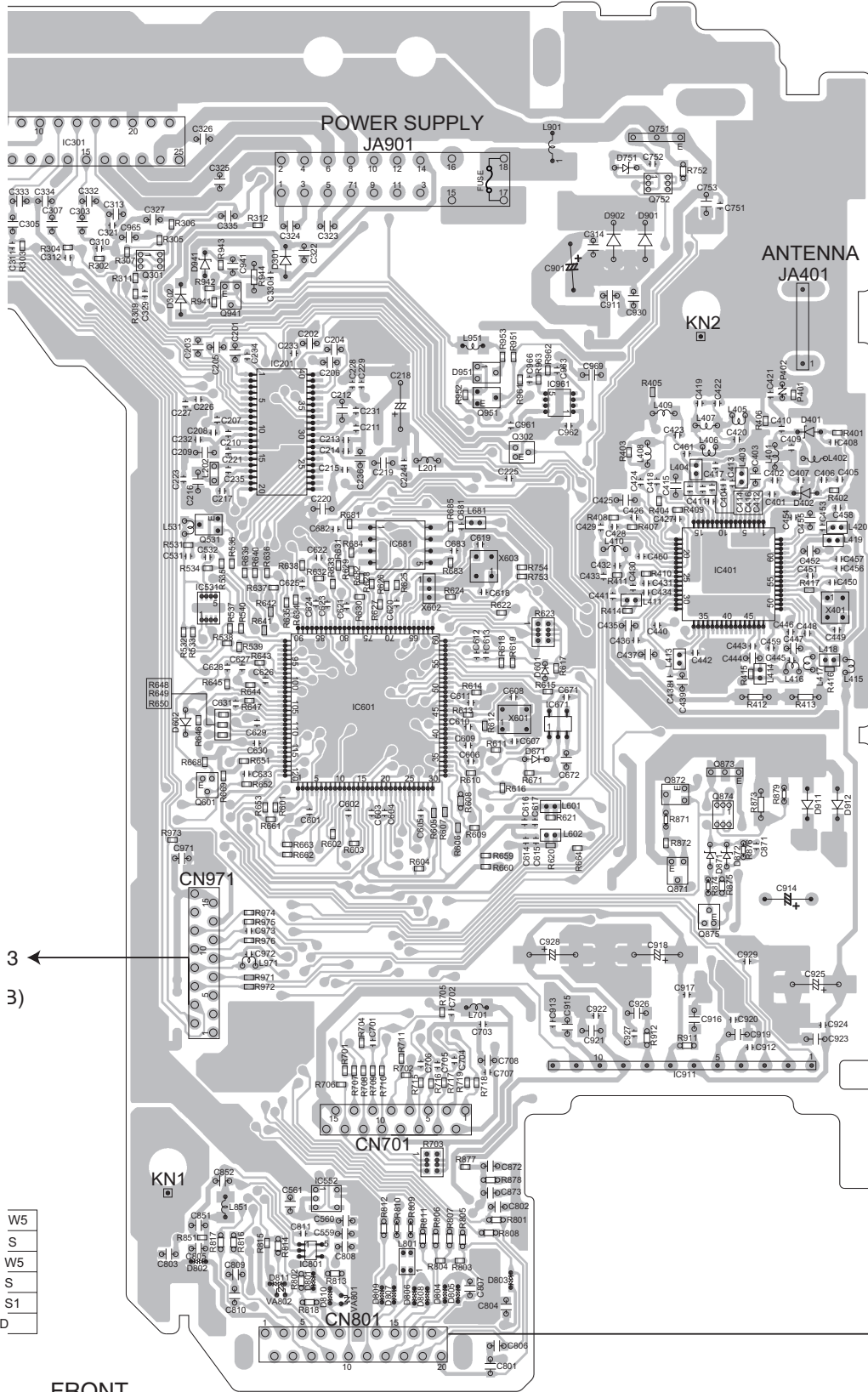
A	MVH-350BT/XMEW5
B	MVH-355BT/XMES
C	MVH-150UI/XMEW5
D	MVH-155UI/XMES
E	MVH-155UI/XMES1
F	MVH-159UI/XMID

**A**

MVH-350BT/XMEW5

SIDE A

CEK1386



3  
3)

- W5
- S
- W5
- S1
- D

B CN1931

FRONT

80 90 100 110 120 130 140 150 160

MVH-350BT/XMEW5

A

# A TUNER AMP UNIT

A

B

B

C

C

D

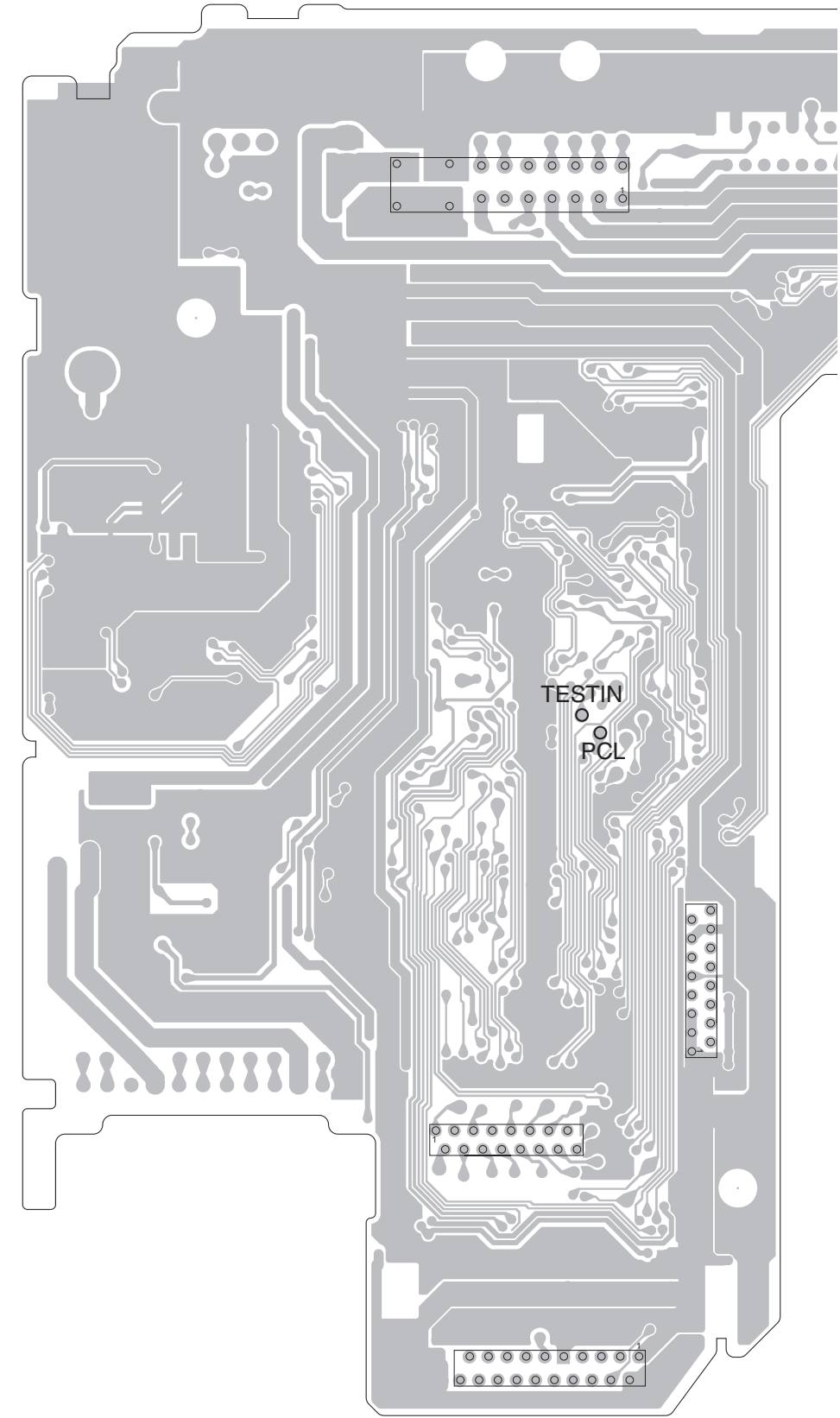
D

E

E

F

F

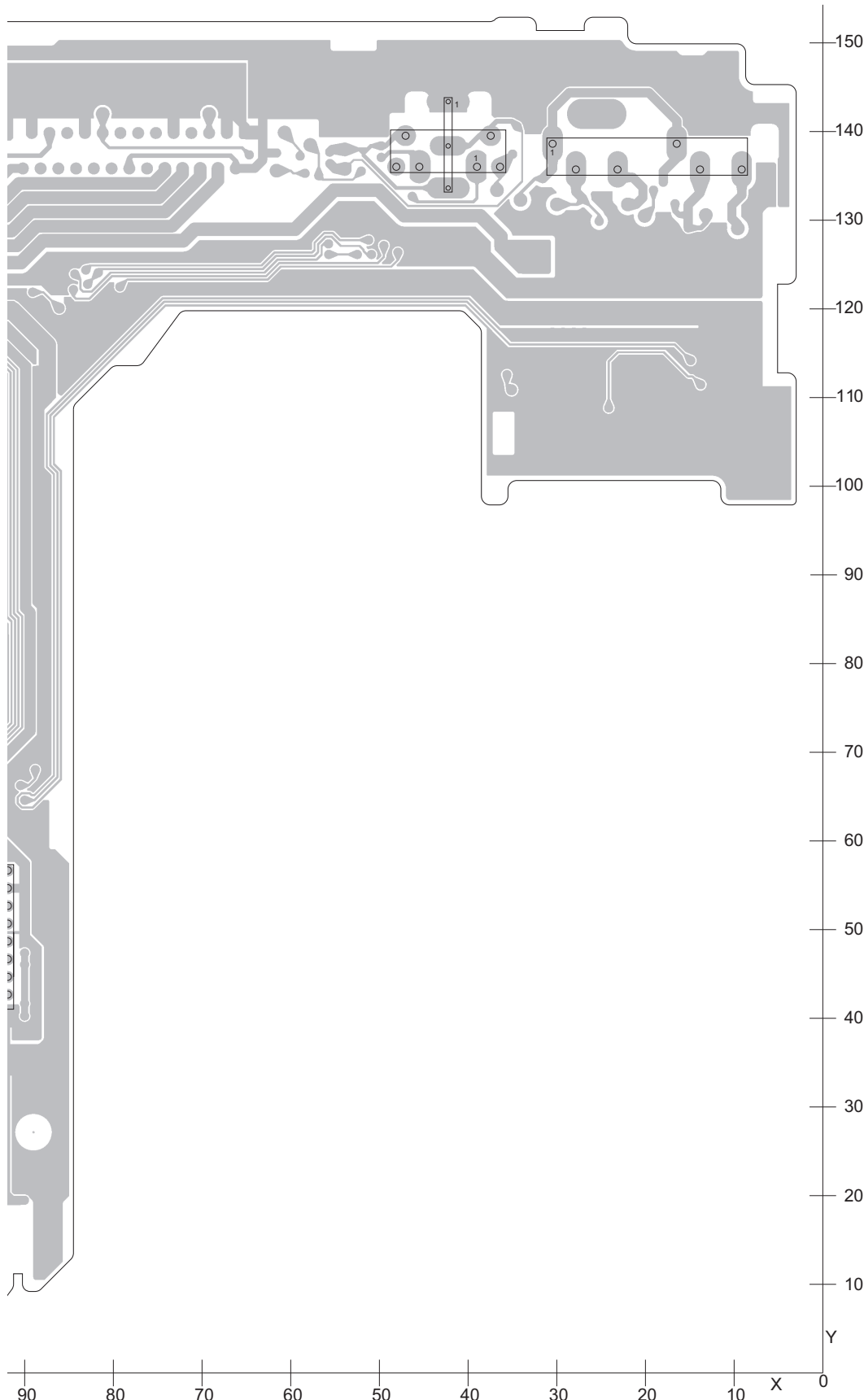


160 150 140 130 120 110 100 90 80

# A



SIDE B



A

B

C

D

E

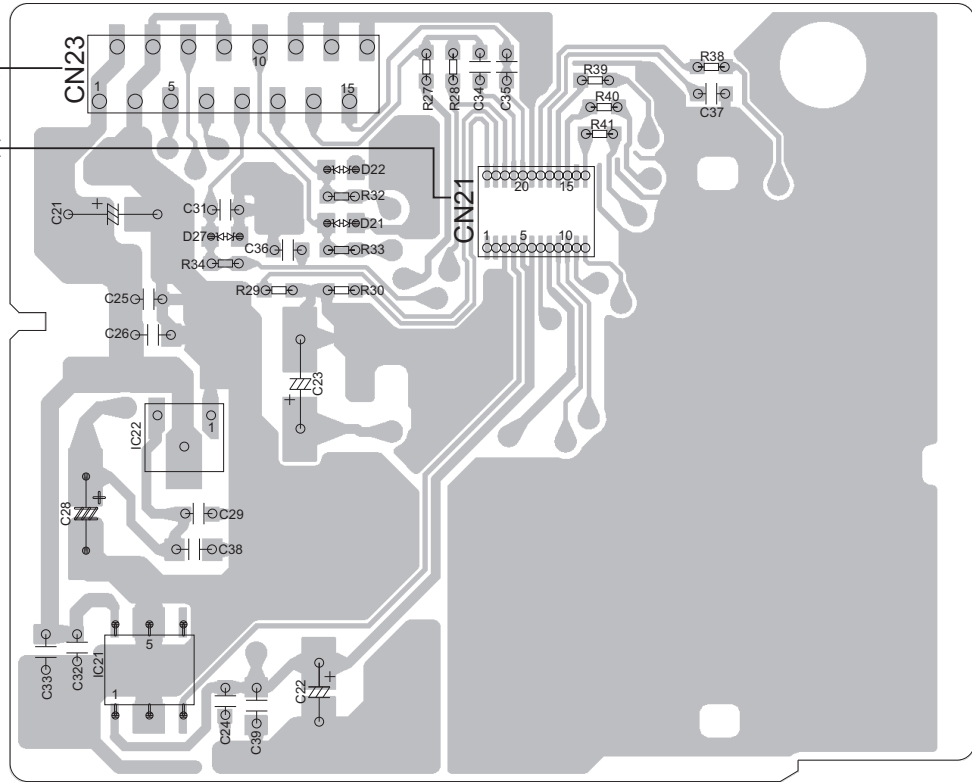
F



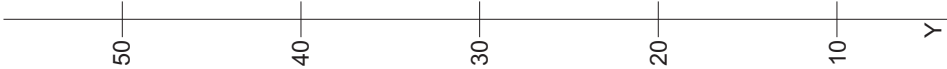
# 11.3 BT UNIT

**C** BT UNIT  
(only A, B)

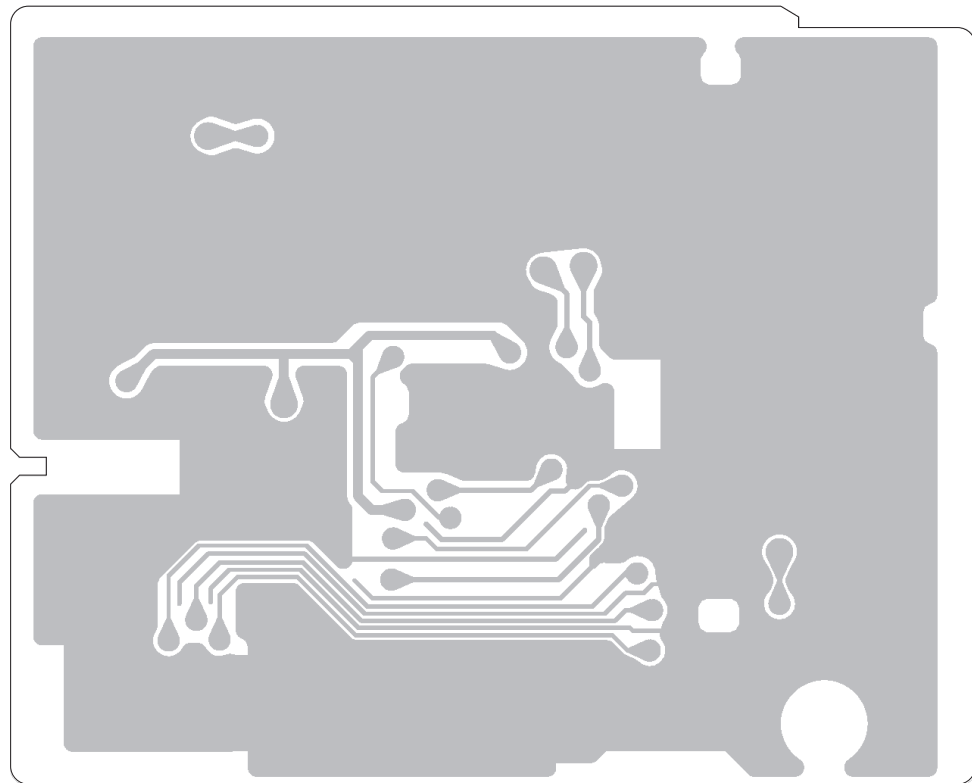
**A** CN971  
BT MODULE



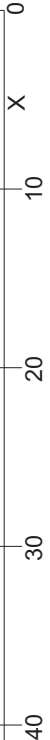
**SIDE A**



**C** BT UNIT  
(only A, B)



**SIDE B**



A	MVH-350BT/XMEW5
B	MVH-355BT/XMES
C	MVH-150UI/XMEW5
D	MVH-155UI/XMES
E	MVH-155UI/XMES1
F	MVH-159UI/XMID



5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
L 202	(A,94,102) Inductor	CTF1793					
L 401	(A,155,104) Chip Coil	LCTAWR27J2520	R 404	(A,142,99)	RS1/16SS105J		
L 402	(A,159,104) Chip Coil	LCTAWR15J2520	R 406	(A,154,108)	RS1/16SS105J		
L 403	(A,151,102) Inductor	CTF1786	R 407	(A,139,96)	RS1/16SS330J		
L 404	(A,146,102) Inductor	CTF1786	R 408	(A,137,97) (A,C,D,E,F)	RS1/16SS471J		
L 405	(A,151,108) Inductor(D,E,F)	LCYB68NJ1608		(A,137,97) (B)	RS1/16SS361J		
L 406	(A,147,105) Inductor(A,C,D,E,F)	CTF1389	R 409	(A,144,98) (B)	RS1/16SS0R0J		
L 407	(A,147,107) Chip Coil(B)	LCTAWR27J2520	R 410	(A,141,91)	RS1/16SS0R0J		
L 408	(A,141,104) Inductor(A,C,D,E,F)	LCTAW4R7J2520	R 411	(A,138,91) (A,C,D,E,F)	RS1/16SS681J		
L 409	(A,141,104) Chip Coil(B)	LCTAW1R5J2520		(A,138,91) (B)	RS1/16SS391J		
L 409	(A,143,109) Chip Coil(B)	LCTAWR39J2520	R 412	(A,152,78)	RS1/4SA8R2J		
L 410	(A,137,94) Chip Coil(A,C,D,E,F)	LCTAW470J2520	R 413	(A,158,78)	RS1/4SA8R2J		
L 413	(A,144,82) Inductor	LCTAW2R2J2520	R 414	(A,139,87)	RS1/16SS0R0J		
L 414	(A,153,80) Inductor(A,C)	CTF1786	R 415	(A,152,80) (B,D,E,F)	RS1/16SS0R0J		
L 419	(A,161,95) Inductor	CTF1786	R 531	(A,91,94)	RS1/16SS473J		
L 420	(A,161,96) Inductor	CTF1786	R 532	(A,91,85)	RS1/16SS222J		
L 551	(A,30,107) Inductor	CTH1524	R 533	(A,92,85)	RS1/16SS222J		
L 801	(A,115,17) Inductor	CTF1713	R 534	(A,93,92)	RS1/16SS272J		
L 901	(A,112,141) Choke Coil 600 uH	CTH1432	R 535	(A,95,92)	RS1/16SS472J		
L 951	(A,122,116) Chip Coil(C)	BTH1101	R 536	(A,96,92)	RS1/16SS472J		
X 401	(A,161,88) Crystal Resonator 36.48 MHz	CSS1848	R 537	(A,96,85)	RS1/16SS101J		
X 601	(A,126,76) Crystal Resonator 12 MHz	CSS1847	R 538	(A,95,84)	RS1/16SS101J		
X 602	(A,117,90) Oscillator(C,D,E,F)	CSS1603	R 551	(A,25,111)	RS1/16SS682J		
X 603	(A,123,92) Resonator 16.93 MHz(A,B)	CSS1794	R 552	(A,30,112)	RS1/16SS0R0J		
△ P251	(A,6,130) Fuse 3.0 A	CEK1386	R 553	(A,27,112)	RS1/16SS1803D		
P 402	(A,155,111) Surge Absorber	HSPC16701B02	R 554	(A,27,110)	RS1/16SS4302D		
VA801	(A,108,13) Varistor	EZJP0V270RM	R 555	(A,39,124)	RS1/10SR471J		
VA802	(A,101,13) Varistor	EZJP0V270RM	R 601	(A,101,66) (A,B)	RS1/16SS473J		
CN801	(A,109,4) Connector	CKS6452	R 602	(A,107,63)	RS1/16SS473J		
CN971	(A,93,49) Connector(A,B)	VKN1192	R 603	(A,109,62) (A,B)	RS1/16SS473J		
JA251	(A,19,138) Pin Jack(A,C)	CKB1099	R 604	(A,116,59) (C)	RS1/16SS473J		
JA401	(A,158,129) Antenna Jack	YKS5041	R 609	(A,122,64)	RS1/16SS473J		
JA891	(A,42,138) Jack(C,D,E,F)	CKS6437	R 610	(A,122,70)	RS1/16SS473J		
JA892	(A,42,141) Jack(A,B)	YKS5035	R 611	(A,124,72)	RS1/16SS473J		
JA901	(A,113,141) Connector	CKM1613	R 613	(A,121,76)	RS1/16SS152J		
△	Fuse 10 A	YEK5001	R 614	(A,122,78)	RS1/16SS473J		
<b>RESISTORS</b>				R 615	(A,130,79)	RS1/16SS473J	
R 251	(A,18,131) (A,C)	RS1/16SS821J	R 616	(A,125,68)	RS1/16SS473J		
R 252	(A,9,132) (A,C)	RS1/16SS821J	R 617	(A,131,81)	RS1/16SS103J		
R 253	(A,15,131) (A,C)	RS1/16SS223J	R 618	(A,125,82) (A,C)	RS1/16SS473J		
R 254	(A,11,131) (A,C)	RS1/16SS223J	R 619	(A,126,82) (B,D,E,F)	RS1/16SS473J		
R 255	(A,29,132)	RS1/16SS821J	R 622	(A,125,87)	RS1/16SS473J		
R 256	(A,19,131)	RS1/16SS821J	R 623	(A,130,85)	RAB4CQ473J		
R 257	(A,28,131)	RS1/16SS223J	R 624	(A,120,89) (A,B)	RS1/16SS222J		
R 258	(A,21,131)	RS1/16SS223J	R 625	(A,114,90)	RS1/16SS101J		
R 301	(A,68,127)	RS1/16SS471J	R 626	(A,113,90)	RS1/16SS101J		
R 302	(A,82,125)	RS1/16SS471J	R 627	(A,112,88)	RS1/16SS101J		
R 303	(A,73,127)	RS1/16SS471J	R 628	(A,111,90)	RS1/16SS101J		
R 304	(A,78,126)	RS1/16SS471J	R 629	(A,109,92)	RS1/16SS101J		
R 305	(A,88,127)	RS1/16SS103J	R 630	(A,110,89)	RS1/16SS101J		
R 306	(A,89,129)	RS1/16SS102J	R 631	(A,107,92)	RS1/16SS473J		
R 309	(A,86,121)	RS1/16SS103J	R 632	(A,105,91)	RS1/16SS473J		
R 311	(A,86,123)	RS1/16SS473J	R 633	(A,107,90)	RS1/16SS101J		
R 312	(A,99,129)	RS1/16SS103J	R 634	(A,103,88)	RS1/16SS102J		
R 401	(A,161,106)	RS1/16SS221J	R 635	(A,102,88)	RS1/16SS102J		
R 402	(A,161,100)	RS1/16SS751J	R 636	(A,100,91)	RS1/16SS473J		
R 403	(A,139,104) (A,C,D,E,F)	RS1/16SS391J	R 637	(A,100,90)	RS1/16SS473J		
	(A,139,104) (B)	RS1/16SS331J	R 638	(A,104,92)	RS1/16SS473J		
			R 639	(A,97,91)	RS1/16SS472J		
			R 640	(A,98,91)	RS1/16SS472J		
			R 643	(A,99,82)	RS1/16SS104J		

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Circuit Symbol and No.Part No.Circuit Symbol and No.Part No.

R 644	(A,98,79)	RS1/16SS101J
R 645	(A,95,79)	RS1/16SS101J
R 646	(A,92,75)	RS1/16SS103J
R 647	(A,98,78)	RS1/16SS101J
R 648	(A,95,76)	RS1/16SS102J
R 649	(A,95,75)	RS1/16SS102J
R 650	(A,95,74)	RS1/16SS102J
R 651	(A,97,71)	RS1/16SS473J
R 652	(A,98,69)	RS1/16SS222J
R 653	(A,100,66)	RS1/16SS103J
R 659	(A,123,61)	RS1/16SS153J
R 660	(A,123,60)	RS1/16SS153J
R 664	(A,133,62)	RS1/16SS103J
R 668	(A,93,71)	RS1/16SS473J
R 669	(A,95,69)	RS1/16SS473J
R 671	(A,128,70)	RS1/16SS104J
R 681	(A,109,97)	RS1/16SS473J
R 682	(A,110,91)	RS1/16SS473J
R 683	(A,120,92)	RS1/16SS473J
R 684	(A,109,94)	RS1/16SS473J
R 685	(A,120,96)	RS1/16SS473J
R 705	(A,119,44)	RS1/16SS473J
R 754	(A,127,92)	RS1/16SS473J
R 801	(A,124,22)	RS1/10SR222J
R 803	(A,121,17)	RS1/16SS223J
R 804	(A,118,17)	RS1/16SS223J
R 805	(A,121,19)	RS1/10SR101J
R 806	(A,118,20)	RS1/10SR101J
R 807	(A,119,20)	RS1/10SR101J
R 808	(A,124,20)	RS1/10SR222J
R 809	(A,115,21)	RS1/10SR220J
R 810	(A,114,21)	RS1/10SR220J
R 813	(A,107,16)	RS1/10SR222J
R 814	(A,101,19)	RS1/10SR222J
R 815	(A,100,19)	RS1/16SS822J
R 816	(A,96,19)	RS1/10SR222J
R 817	(A,95,19)	RS1/10SR222J
R 818	(A,104,13)	RS1/10SR0R0J
R 851	(A,93,20)	RS1/16SS472J
R 874	(A,147,58)	RS1/10SR391J
R 875	(A,149,58)	RS1/10SR473J
R 877	(A,121,27)	RS1/16SS1R0J
R 878	(A,124,26)	RS1/10SR473J
R 879	(A,156,67)	RS1/10SR122J
R 891	(A,58,138)	RS1/16SS102J
R 892	(A,58,136)	RS1/16SS102J
R 911	(A,145,40)	RS1/10SR1R0J
R 912	(A,141,41)	RS1/10SR1R0J
R 941	(A,94,121)	RS1/16SS223J
R 942	(A,94,122)	RS1/16SS473J
R 943	(A,95,125) (A,C)	RS1/16SS473J
	(A,95,125) (B,D,E,F)	RS1/16SS472J
R 944	(A,98,123)	RS1/4SA102J
R 951	(A,126,115) (C)	RS1/16SS102J
R 952	(A,121,111) (C)	RS1/16SS223J
R 953	(A,125,115) (C)	RS1/16SS153J
R 961	(A,127,112)	RS1/16SS103J
R 962	(A,130,113)	RS1/16SS103J
R 963	(A,129,112)	RS1/16SS105J
R 973	(A,90,63) (A,B)	RS1/16SS0R0J

CAPACITORS

R 974	(A,98,55) (A,B)	RS1/16SS101J
R 975	(A,98,54) (A,B)	RS1/16SS101J
R 976	(A,98,52) (A,B)	RS1/16SS101J
C 201	(A,96,115)	CKSRYB105K10
C 202	(A,104,116)	CKSRYB105K10
C 203	(A,92,116)	CKSRYB105K10
C 204	(A,107,115)	CKSRYB105K10
C 205	(A,94,116)	CKSRYB105K10
C 206	(A,107,114)	CKSRYB105K10
C 207	(A,94,108)	CKSSYB104K10
C 208	(A,94,106)	CKSSYB104K10
C 209	(A,93,104) 10 uF	CCG1192
C 210	(A,96,106)	CCSSCH151J50
C 211	(A,109,107)	CCSSCH151J50
C 212	(A,108,109) 10 uF	CCG1192
C 213	(A,108,106)	CKSSYB104K10
C 214	(A,108,104)	CKSSYB104K10
C 215	(A,108,102)	CKSSYB104K10
C 216	(A,92,101) 10 uF	CCG1192
C 217	(A,95,100)	CKSSYB104K10
C 218	(A,114,109) Capacitor	CEVW470M16
C 219	(A,112,103) 10 uF	CCG1192
C 220	(A,106,98) 10 uF	CCG1192
C 223	(A,91,101)	CKSSYB102K50
C 224	(A,115,103)	CKSSYB104K10
C 229	(A,110,112)	CKSSYB102K50
C 236	(A,110,104)	CKSRYB105K10
C 251	(A,35,128) 4.7 uF(A,C)	CCG1201
C 252	(A,17,127) 4.7 uF(A,C)	CCG1201
C 253	(A,17,130) (A,C)	CCSSCH101J50
C 254	(A,10,130) (A,C)	CCSSCH101J50
C 255	(A,35,132) 4.7 uF	CCG1201
C 256	(A,30,130) 4.7 uF	CCG1201
C 257	(A,26,131)	CCSSCH101J50
C 258	(A,20,131)	CCSSCH101J50
C 261	(A,6,133) (A,C,F) (A,6,133) (B,D,E)	CKSSYB102K50 CCSSCH101J50
C 301	(A,69,129)	CKSRYB224K16
C 303	(A,80,129)	CKSRYB224K16
C 305	(A,72,129)	CKSRYB224K16
C 307	(A,77,129)	CKSRYB224K16
C 313	(A,83,130)	CKSRYB105K16
C 314	(A,135,126)	CKSRYB104K16
C 317	(A,60,129)	CEVW100M16
C 319	(A,62,136)	CCSSCH101J50
C 320	(A,64,135)	CCSSCK1R0C50
C 321	(A,83,129)	CCSSCH101J50
C 322	(A,104,126)	CKSRYB104K16
C 323	(A,106,129)	CCSRCH100D50
C 324	(A,102,129)	CCSRCH100D50
C 325	(A,95,134)	CCSRCH100D50
C 326	(A,93,138)	CCSRCH100D50
C 327	(A,87,129)	CKSRYB105K16
C 402	(A,155,101)	CKSSYB103K16
C 403	(A,152,102)	CKSRYB105K10
C 405	(A,162,101)	CKSSYB103K16
C 406	(A,160,101)	CKSSYB103K16

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<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
C 408	(A,161,105)	CKSSYB103K16		C 605	(A,116,65)	CKSSYB104K10	
C 409	(A,156,105)	CCSSCH6R0D50		C 606	(A,122,71)	CKSSYB104K10	
C 410	(A,155,107)	CCSSCH330J50		C 607	(A,126,73)	CCSSCH120J50	A
C 411	(A,148,99)	CKSSYB103K16		C 608	(A,126,78)	CCSSCH120J50	
C 412	(A,148,101)	CKSSYB104K10		C 609	(A,121,73)	CKSSYB104K10	
C 413	(A,150,101)	CKSSYB104K10		C 610	(A,121,75)	CKSSYB104K10	
C 414	(A,145,100)	CKSSYB103K16		C 611	(A,122,77)	CKSSYB104K10	
C 415	(A,144,101) 10 uF	CCG1192		C 612	(A,122,82)	CKSSYB104K10	
C 416	(A,147,100)	CKSSYB104K10		C 613	(A,123,82)	CKSSYB104K10	
C 418	(A,142,101)	CKSSYB223K16		C 618	(A,123,89) (A,B)	CCSSCH120J50	
C 419	(A,146,110) (B)	CCSSCH150J50		C 619	(A,123,94) (A,B)	CCSSCH120J50	
C 420	(A,150,106) (A,B,C)	CKSSYB103K16		C 620	(A,114,88)	CKSSYB104K10	
C 421	(A,154,111) (D,E,F)	CCSSCJ3R0C50		C 621	(A,108,88)	CKSSYB104K10	
C 423	(A,144,106) (B)	CCSSCH8R0D50		C 622	(A,105,93)	CCSSCH220J50	B
C 424	(A,140,101)	CKSSYB103K16		C 623	(A,106,88)	CKSSYB104K10	
C 425	(A,138,99) 10 uF	CCG1192		C 624	(A,105,88)	CKSSYB104K10	
C 426	(A,139,97)	CKSSYB104K10		C 625	(A,104,90)	CKSSYB104K10	
C 427	(A,144,97)	CKSSYB104K10		C 626	(A,100,80)	CKSSYB104K10	
C 428	(A,137,96) (A,C,D,E,F)	CCSSCH101J50		C 627	(A,97,81)	CCSSCH220J50	
C 428	(A,137,96) (B)	CCSSCH220J50		C 628	(A,95,81)	CCSSCH220J50	
C 429	(A,136,96)	CKSSYB103K16		C 629	(A,99,75)	CKSSYB104K10	
C 430	(A,139,90) (D,E,F)	CKSSYB105K6R3		C 630	(A,99,73)	CKSSYB104K10	
C 432	(A,138,92) (A,C,D,E,F)	CCSSCH820J50		C 631	(A,96,77)	CCSSCH220J50	
C 432	(A,138,92) (B)	CCSSCK2R0C50		C 672	(A,132,71)	CKSRYB105K10	
C 433	(A,136,91) (D,E,F)	CKSSYB105K6R3		C 681	(A,121,96)	CKSSYB104K10	C
C 435	(A,139,86)	CKSRYB474K10		C 683	(A,120,94)	CCSSCJ3R0C50	
C 436	(A,140,84) (B)	CKSSYB104K10		C 801	(A,124,6)	CKSRYB221K50	
C 439	(A,145,80) (B)	CKSRYB104K16		C 806	(A,125,8)	CKSRYB104K16	
C 440	(A,142,86)	CKSSYB102K50		C 807	(A,122,14)	CKSRYB105K10	
C 441	(A,137,89) (D,E,F)	CCSSCH100D50		C 808	(A,108,19)	CKSRYB104K16	
C 442	(A,146,83)	CKSSYB104K10		C 809	(A,96,16)	CCSRCH221J50	
C 444	(A,152,82) 2.2 uF	CCG1218		C 810	(A,96,13)	CCSRCH221J50	
C 445	(A,156,82)	CKSSYB104K10		C 811	(A,104,20)	CKSSYB104K10	
C 447	(A,157,83) 2.2 uF(B)	CCG1218		C 871	(A,153,62)	CKSRYB104K16	
C 447	(A,157,83) 2.2 uF(B)	CCG1218		C 873	(A,124,24)	CKSRYB104K16	
C 448	(A,158,85) (A,C,D,E,F)	CKSSYB104K10		C 891	(A,52,138)	CKSRYB104K16	D
C 449	(A,161,85)	CCSSCH9R0D50		C 892	(A,34,139)	CKSRYB104K16	
C 450	(A,161,90)	CCSSCH9R0D50		C 893	(A,34,135) (A,B)	CKSRYB102K50	
C 451	(A,158,91)	CKSSYB104K10		C 894	(A,52,134) (A,B)	CKSRYB102K50	
C 452	(A,158,94)	CKSRYB105K10		C 901	(A,133,124) 2 200 uF/16 V	CCH2040	
C 453	(A,160,96)	CKSSYB104K10		C 912	(A,152,40)	CKSSYB102K50	
C 455	(A,158,97)	CKSRYB224K16		C 913	(A,131,43)	CKSSYB102K50	
C 456	(A,161,92)	CKSSYB472K25		C 914	(A,156,56) 1 000 uF/16 V	CCH2024	
C 457	(A,161,93)	CKSSYB472K25		C 915	(A,132,42)	CKSRYB104K16	
C 461	(A,145,104)	CKSSYB104K16		C 916	(A,146,43) 4.7 uF	CCG1201	
C 531	(A,91,93)	CKSSYB104K10		C 917	(A,145,46)	CKSSYB102K50	E
C 532	(A,93,93)	CKSSYB104K10		C 919	(A,151,42) 4.7 uF	CCG1201	
C 551	(A,13,121) Capacitor	CEVW221M16		C 921	(A,135,42) 4.7 uF	CCG1201	
C 552	(A,13,107)	CKSRYB105K16		C 923	(A,159,41) 4.7 uF	CCG1201	
C 553	(A,15,110)	CKSSYB103K16		C 926	(A,140,44) 4.7 uF	CCG1201	
C 555	(A,25,112)	CKSSYB682K25		C 927	(A,139,42)	CKSSYB102K50	
C 556	(A,32,120)	CEVQW221M6R3		C 941	(A,96,124)	CKSRYB104K16	
C 557	(A,32,116)	CKSRYB105K10		C 961	(A,126,107)	CKSSYB104K16	
C 560	(A,108,21)	CKSRYB105K10		C 962	(A,132,107)	CKSSYB104K16	
C 561	(A,102,23)	CKSRYB105K10		C 966	(A,128,112)	CKSSYB333K16	
C 564	(A,32,114) 4.7 uF	CCG1201		C 969	(A,135,113) 22 uF	DCH1256	F
C 565	(A,15,107) 4.7 uF	CCG1222		C 973	(A,98,53) (A,B)	CCSSCH470J50	
C 601	(A,104,66)	CKSSYB104K10					
C 602	(A,109,65)	CKSSYB104K10					
C 603	(A,111,65)	CKSSYB104K10					
C 604	(A,112,65)	CKSSYB104K10					



Circuit Symbol and No.Part No.Circuit Symbol and No.Part No.

Unit Number :

Unit Name : Keyboard Unit

R 1932	(B,45,11)	RS1/10SR222J
R 1941	(B,128,25) (A,C)	RS1/10SR473J
R 1944	(B,133,27) (B,D,E,F)	RS1/10SR101J
R 1951	(B,56,16)	RS1/4SA221J
R 1952	(B,56,18)	RS1/4SA221J

**A** MISCELLANEOUS

IC 1801	(B,85,23) IC	PD6583A8
IC 1941	(A,157,39) Remote IC(B,D,E,F)	GP1UXC14RK
Q 1952	(B,10,19) Transistor(B)	LTC014EEB
Q 1953	(B,16,19) Transistor(A)	LTC014EEB
D 1951	(A,65,22) White LED	CSL0401WBHCW1(A)

R 1953	(B,17,27) (B)	RS1/4SA681J
R 1955	(B,26,32) (B)	RS1/10SR0R0J
R 1956	(B,19,26) (B)	RS1/4SA152J
R 1959	(B,21,9) (B)	RS1/10SR222J
R 1960	(B,20,20) (B)	RS1/4SA102J

D 1952	(A,18,32) Blue LED(B)	FC-F1608BK-470H5
D 1953	(A,53,31) Blue LED(B)	FC-F1608BK-470H5
D 1954	(A,55,20) Blue LED(B)	FC-F1608BK-470H5
D 1956	(A,68,6) Blue LED(B)	FC-F1608BK-470H5
D 1957	(A,79,6) Blue LED(B)	FC-F1608BK-470H5

R 1964	(B,14,9) (B)	RS1/4SA561J
R 1966	(B,20,14) (B)	RS1/10SR222J
R 1968	(B,23,14) (B)	RS1/10SR222J
R 1970	(B,141,19) (B)	RS1/10SR222J
R 1971	(B,11,32) (A,C,D,E,F)	RS1/4SA152J

D 1958	(A,12,21) Blue LED(B)	FC-F1608BK-470H5
D 1959	(A,18,9) Blue LED(B)	FC-F1608BK-470H5
D 1960	(A,54,8) Blue LED(B)	FC-F1608BK-470H5
D 1961	(A,90,6) Blue LED(B)	FC-F1608BK-470H5
D 1962	(A,101,6) Blue LED(B)	FC-F1608BK-470H5

R 1973	(B,52,16) (A,C,D,E,F)	RS1/4SA182J
R 1974	(B,26,30) (A,C,D,E,F)	RS1/10SR0R0J
R 1976	(B,16,13) (A,C,D,E,F)	RS1/4SA122J
R 1979	(B,28,11) (A,C,D,E,F)	RS1/10SR182J
R 1981	(B,51,14) (A,C,D,E,F)	RS1/10SR182J
R 1984	(B,47,10) (B)	RS1/10SR0R0J

D 1963	(A,112,6) Blue LED(B)	FC-F1608BK-470H5
D 1964	(A,123,6) Blue LED(B)	FC-F1608BK-470H5
D 1965	(A,133,6) Blue LED(B)	FC-F1608BK-470H5
D 1966	(A,144,6) Blue LED(B)	FC-F1608BK-470H5
D 1967	(A,17,31) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1968	(A,54,31) Red LED(A,C,D,E,F)	FC-1608SXX630D08

R 1983	(B,140,19) (A,C,D,E,F)	RS1/10SR222J
R 1989	(B,54,9) (A,C,D,E,F)	RS1/10SR0R0J
R 1990	(B,19,22) (A,C,D,E,F)	RS1/4SA182J
R 1993	(B,14,18) (C,D,E,F)	RS1/10SR0R0J

D 1969	(A,58,20) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1971	(A,17,10) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1972	(A,53,8) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1973	(A,80,6) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1974	(A,69,6) Red LED(A,C,D,E,F)	FC-1608SXX630D08

CAPACITORS

C 1806	(B,66,23)	CKSRYB104K16
C 1807	(B,71,20)	CKSRYB105K10
C 1911	(B,148,21)	CKSRYB104K16
C 1912	(B,144,23)	CKSRYB104K16
C 1941	(B,137,30) 10 uF(B,D,E,F)	CCG1192

D 1975	(A,92,6) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1976	(A,102,6) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1977	(A,113,6) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1978	(A,124,6) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1979	(A,135,6) Red LED(A,C,D,E,F)	FC-1608SXX630D08

**C**

Unit Number : QWM3533(A,B)

Unit Name : BT Unit

D 1980	(A,145,6) Red LED(A,C,D,E,F)	FC-1608SXX630D08
D 1981	(A,12,22) Red LED(A,C,D,E,F)	FC-1608SXX630D08
L 1802	(B,133,7) Inductor	CTF1389
L 1803	(B,130,8) Inductor	CTF1389
L 1804	(B,139,6) Inductor	CTF1389

MISCELLANEOUS

IC 21	(A,8,48) IC	S-1172B18-E6
IC 22	(A,21,46) IC	S-1206B33-U3
CN21	(A,34,27) Connector	CKS6346
CN23	(A,42,44) Connector	CKS3857

X 1801	(B,70,25) Ceramic Resonator 5.00 MHz	CSS1547
S 1830	(A,37,20) Encoder(MULTI-CONTROL)	CSD1168
CN1911	(A,156,25) Connector	CKS6443
CN1931	(B,109,10) Connector	CKS6451
JA1921	(A,155,9) Jack	CKN1094

RESISTORS

R 28	(A,42,31)	RS1/10SR102J
R 29	(A,30,41)	RS1/10SR102J
R 30	(A,30,37)	RS1/10SR102J
R 38	(A,42,17)	RS1/10SR0R0J
R 39	(A,41,23)	RS1/10SR221J

RESISTORS

R 1801	(B,82,13)	RS1/10SR473J
R 1802	(B,73,20)	RS1/10SR473J
R 1803	(B,75,24)	RS1/10SR222J
R 1804	(B,75,22)	RS1/10SR0R0J
R 1805	(B,58,29)	RS1/10SR473J

R 40	(A,40,23)	RS1/10SR221J
R 41	(A,38,23)	RS1/10SR221J

CAPACITORS

C 23	(A,24,40) Capacitor	CEVW221M4
C 24	(A,7,44)	CKSRYB105K10
C 26	(A,27,48) 10 uF	CCG1192
C 29	(A,17,45)	CKSRYB105K10
C 33	(A,9,54) 10 uF	CCG1192

R 1806	(B,60,30)	RS1/10SR473J
R 1807	(B,60,31)	RS1/10SR473J
R 1808	(B,58,32)	RS1/10SR473J
R 1823	(B,50,23)	RS1/10SR273J
R 1931	(B,43,11)	RS1/10SR222J

C 34	(A,42,30)	CKSRYB105K10
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**Circuit Symbol and No.**

6  
**Part No.**

C 36	(A,32,40)	CKSRYB104K16
C 38	(A,15,46) 10 uF	CCG1192
C 39	(A,6,42) 10 uF	CCG1192

A

B

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D

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