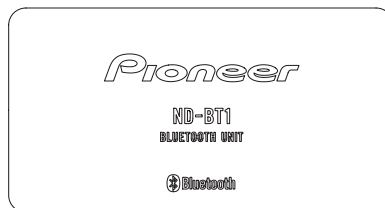


**Pioneer** *sound.vision.soul*

# **Service Manual**



ND-BT1/E5

ORDER NO.  
**CRT3684**

**BLUETOOTH UNIT**

# **ND-BT1** /E5



For details, refer to "Important Check Points for Good Servicing".

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# SAFETY INFORMATION

## CAUTION

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.

## WARNING

This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.  
Health & Safety Code Section 25249.6 - Proposition 65

### ● Service Precaution

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. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.

ND-BT1/E5

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## [Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol. Please be sure to confirm and follow these procedures.

### 1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification (addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris. Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs. In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages. If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries. Please pay attention to your surroundings and repair safely.

### 2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification. Adjustments should be performed in accordance with the procedures/instructions described in this manual.

### 3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance. Make sure the proper amount is applied.

### 4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

### 5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

1 2 3 4

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ND-BT1/E5

# 1. SPECIFICATIONS

## General

Max. Current Consumption .....0.25 A

Dimensions (W x H x D) .....89 mm x 16 mm x 48 mm  
(3-1/2 x 5/8 x 1-7/8 in.)

Weight.....0.16 kg (0.33 lbs)

## Bluetooth

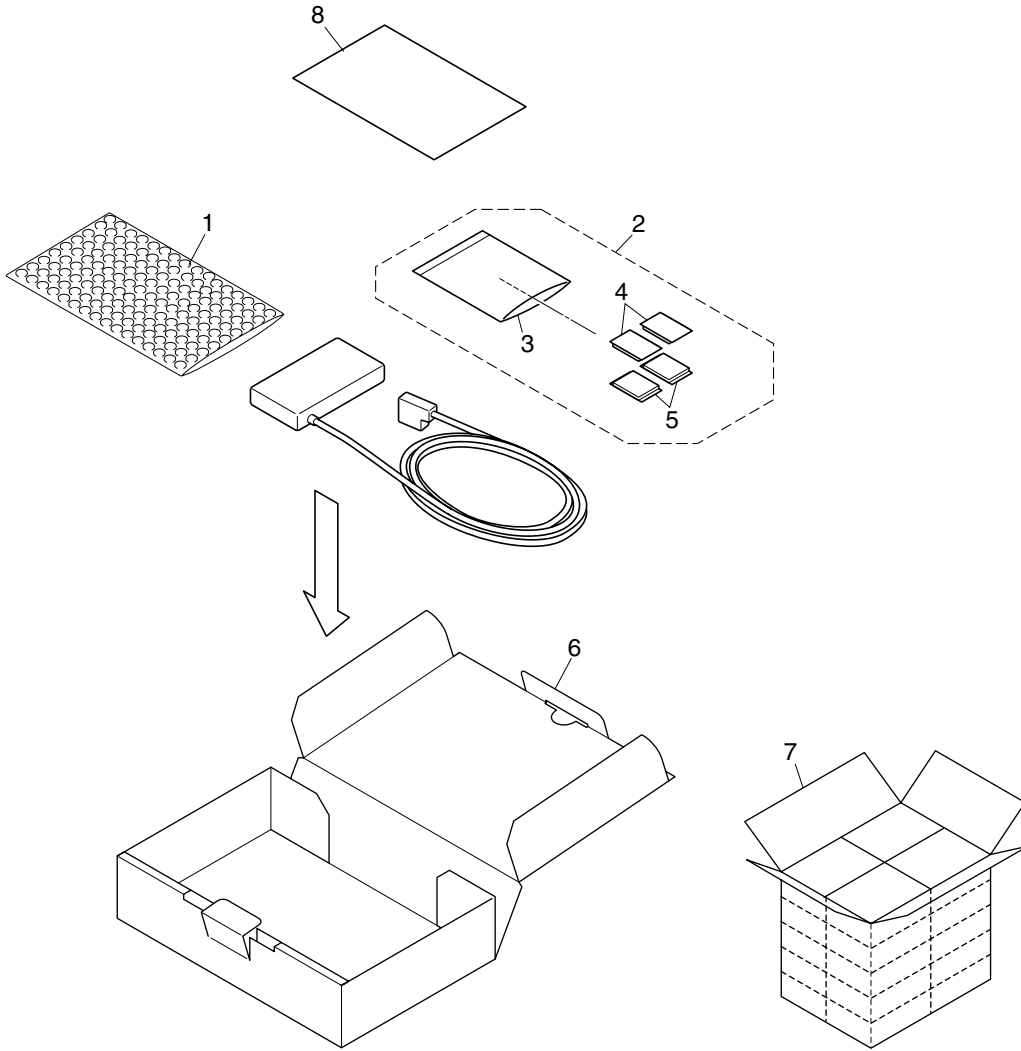
Version .....Bluetooth 1.1 certified

Maximum Output Power .....+4 dBm (Power Class 2)

# 2. EXPLODED VIEWS AND PARTS LIST

NOTES : • Parts marked by " \* " are generally unavailable because they are not in our Master Spare Parts List.  
 • The  $\triangle$  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.  
 • Screw adjacent to  $\nabla$  mark on the product are used for disassembly.  
 • For the applying amount of lubricants or glue, follow the instructions in this manual.  
 (In the case of no amount instructions, apply as you think it appropriate.)

## 2.1 PACKING



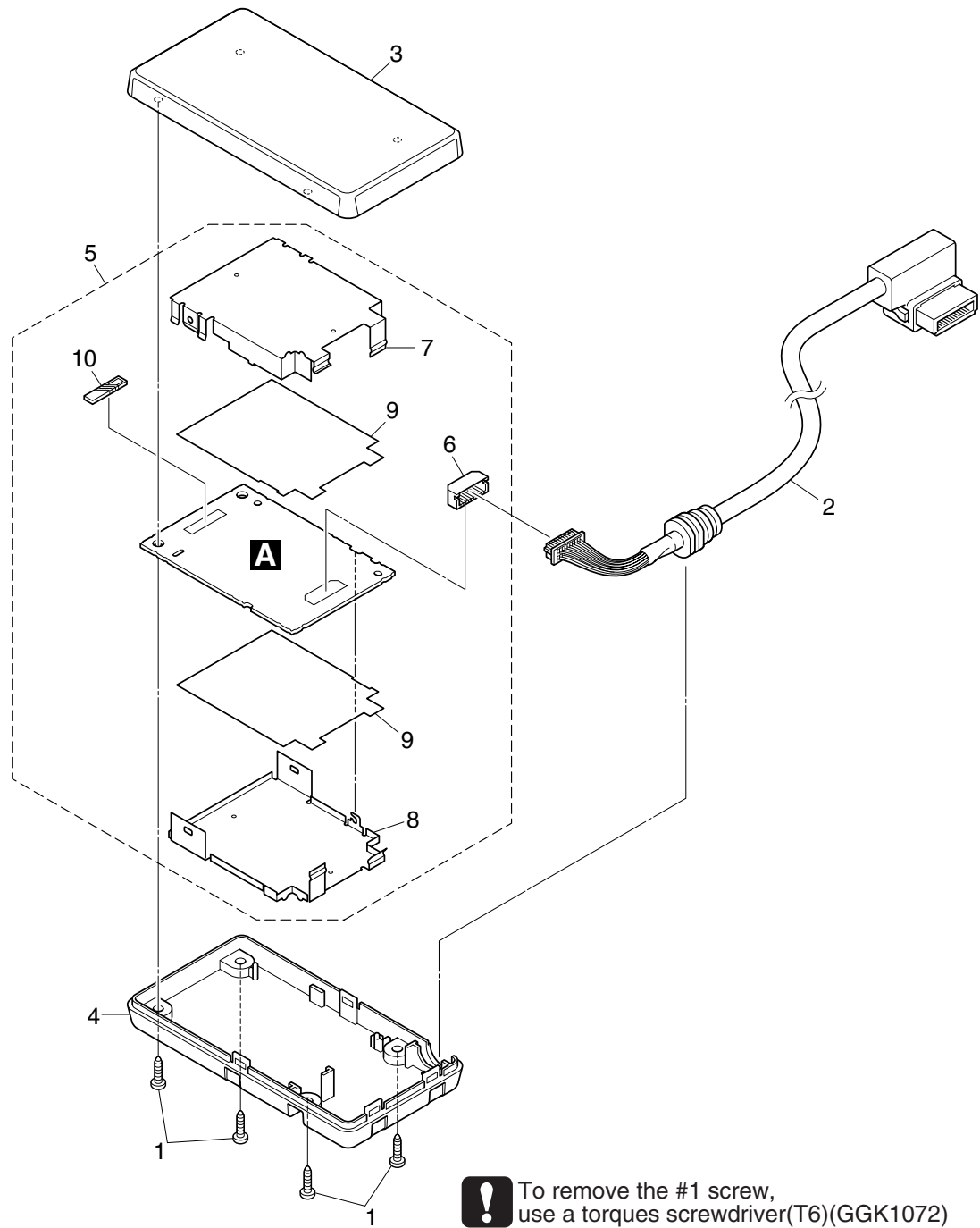
### PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Air Cushioned Bag	CEG1081	6	Carton	CHG5904
2	Accessories Assy	CEA5378	7	Contain Box	CHL5904
* 3	Polyethylene Bag	CEG1158	8	Owner's Manual	CRD4118
4	Fastener	CNM9866			
5	Fastener	CNM9867			

### Owner's Manual

Part No.	Language
CRD4118	English, Spanish, German, French, Italian, Dutch, Russian

## 2.2 EXTERIOR



**!** To remove the #1 screw, use a torque screwdriver(T6)(GGK1072)

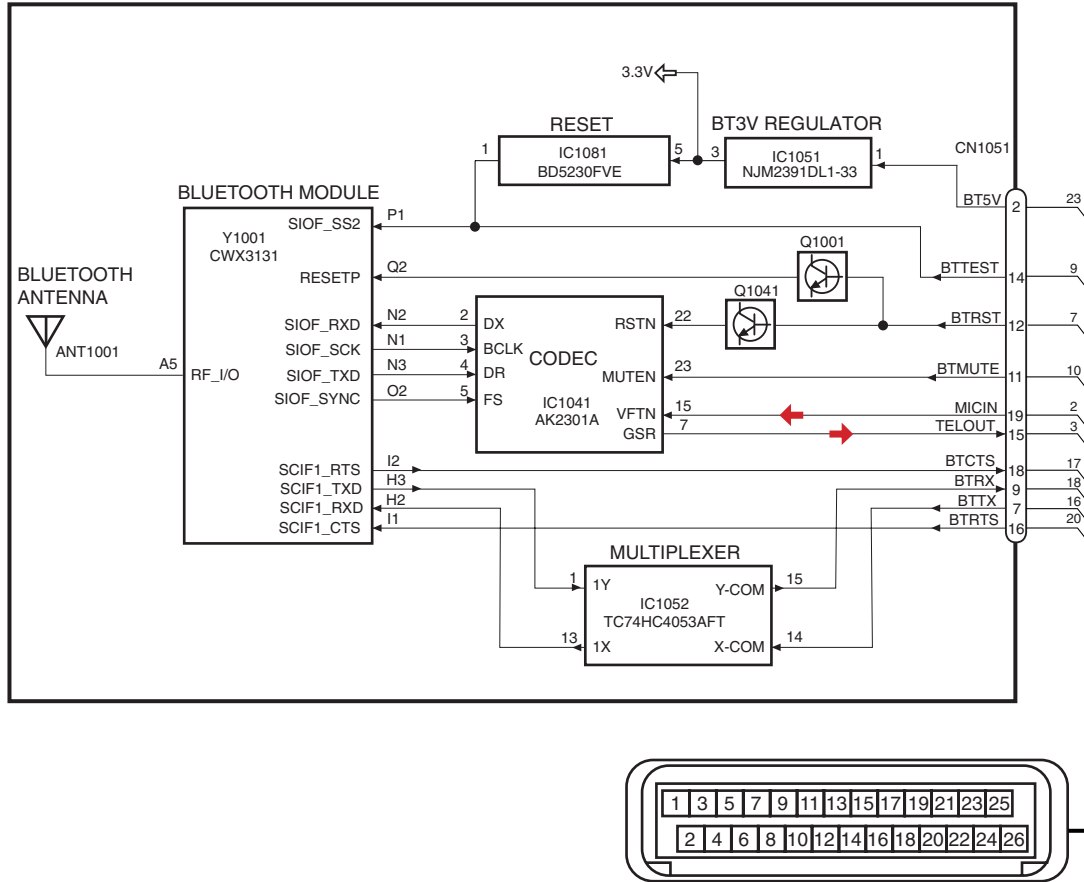
### EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.
1	Screw	BPZ20T100FTB
2	Cord Assy	CDE7963
3	Cover	CNS8686
4	Case	CNS8741
5	Bluetooth Assy	CWN1211
6	Connector(CN1051)	CKS5270
7	Shield	CND3026
8	Shield	CND3027
9	Insulator	CNM9813
10	Antenna(ANT1001)	CTX1095

# 3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

## 3.1 BLOCK DIAGRAM

### A BLUETOOTH ASSY



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ND-BT1/E5

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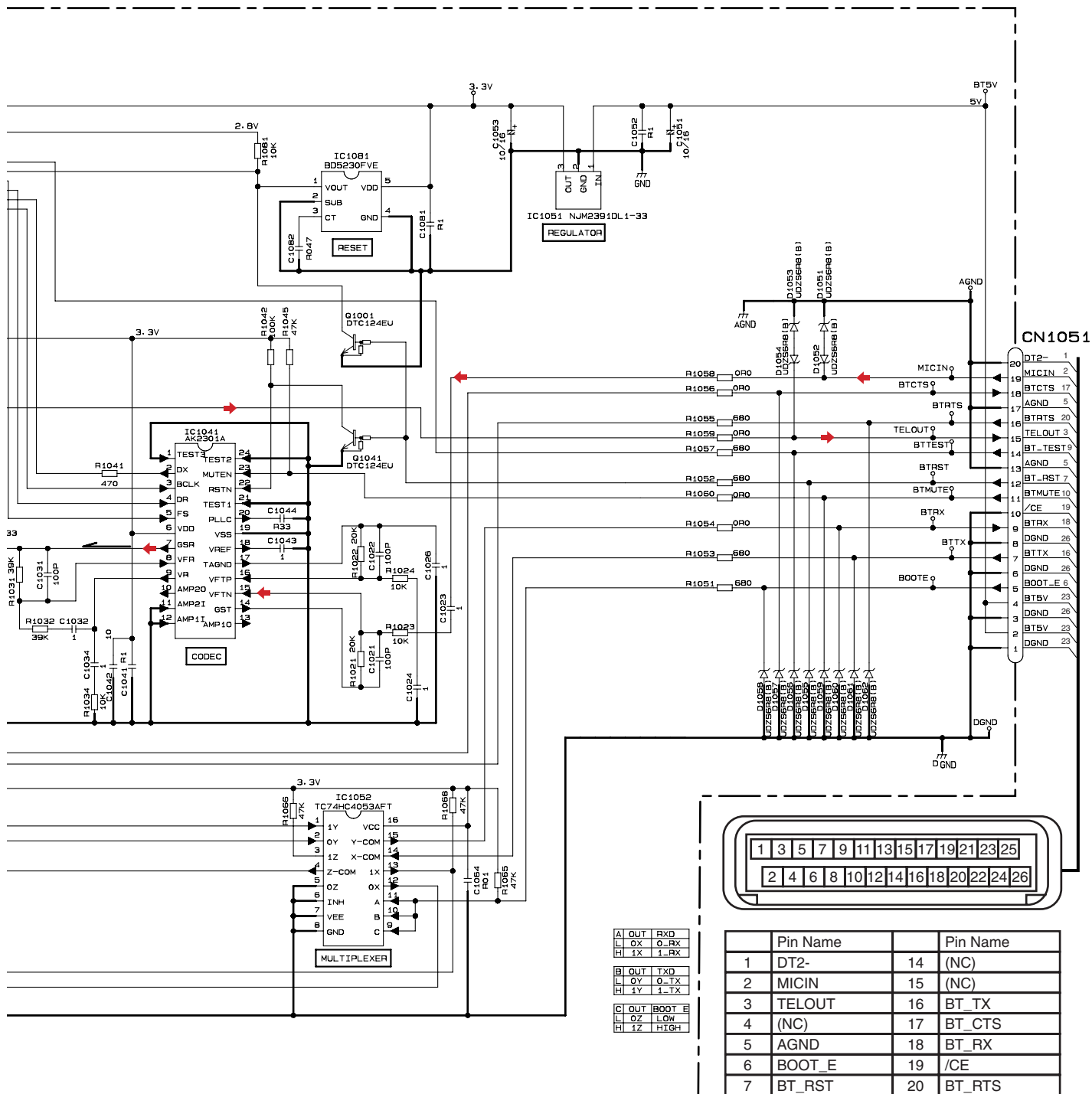
■

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■





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.

Decimal points for resistor and capacitor fixed values are expressed as :  
 2.2 → 2R2  
 0.022 → R022

A	OUT	RXD
L	OY	O_RX
H	1X	1_RX
B	OUT	TXD
L	OY	O_TX
H	1Y	1_TX
C	OUT	BOOT_E
L	OZ	LOW
H	1Z	HIGH

Pin Name	Pin Name
1	14
2	15
3	16
4	17
5	18
6	19
7	20
8	21
9	22
10	23
11	24
12	25
13	26
	GNDE
	GND



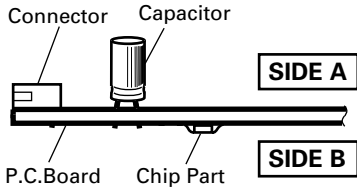
# 4. PCB CONNECTION DIAGRAM

## 4.1 BLUETOOTH ASSY

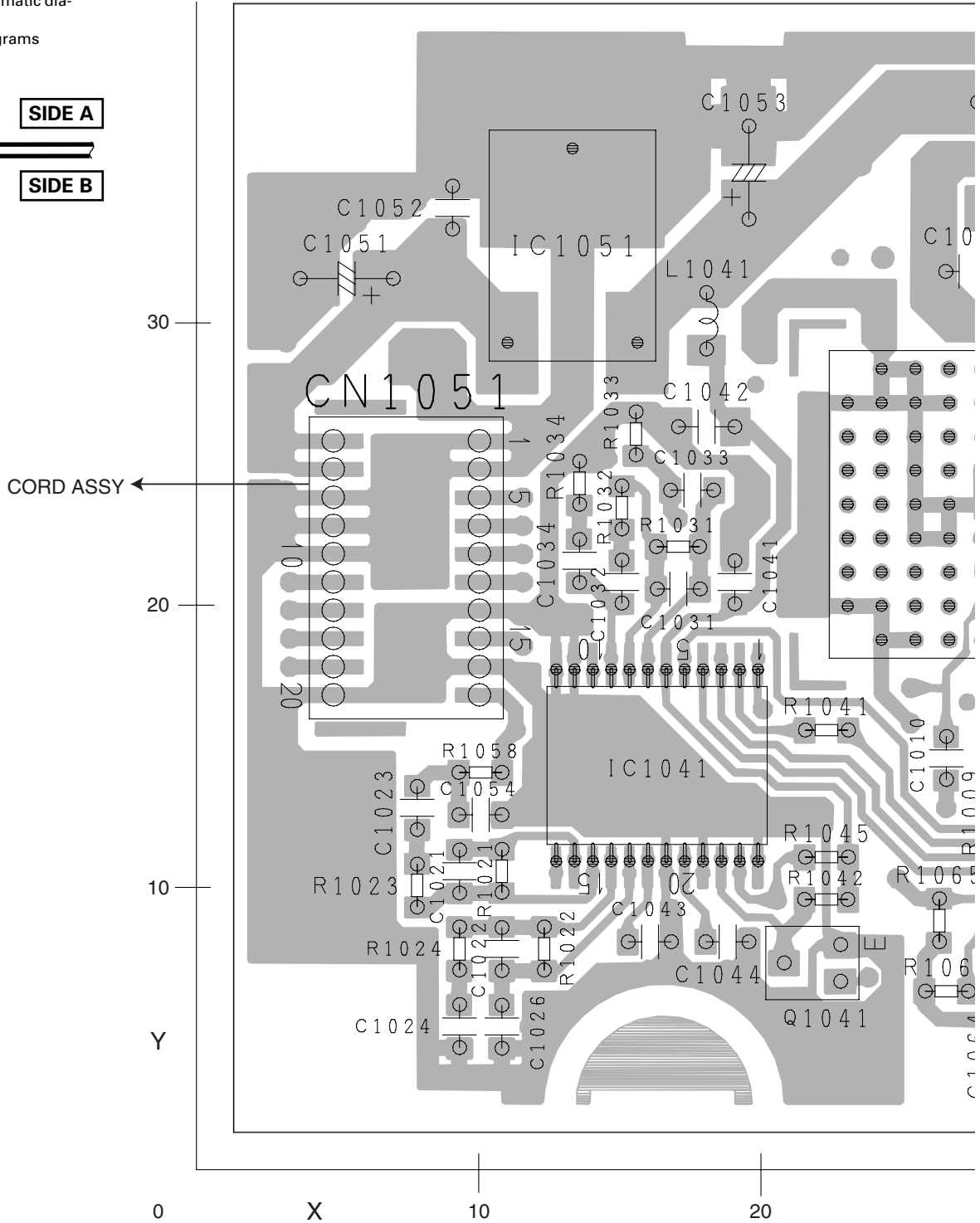
A  
B  
C  
D  
E  
F

### NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
2. Viewpoint of PCB diagrams

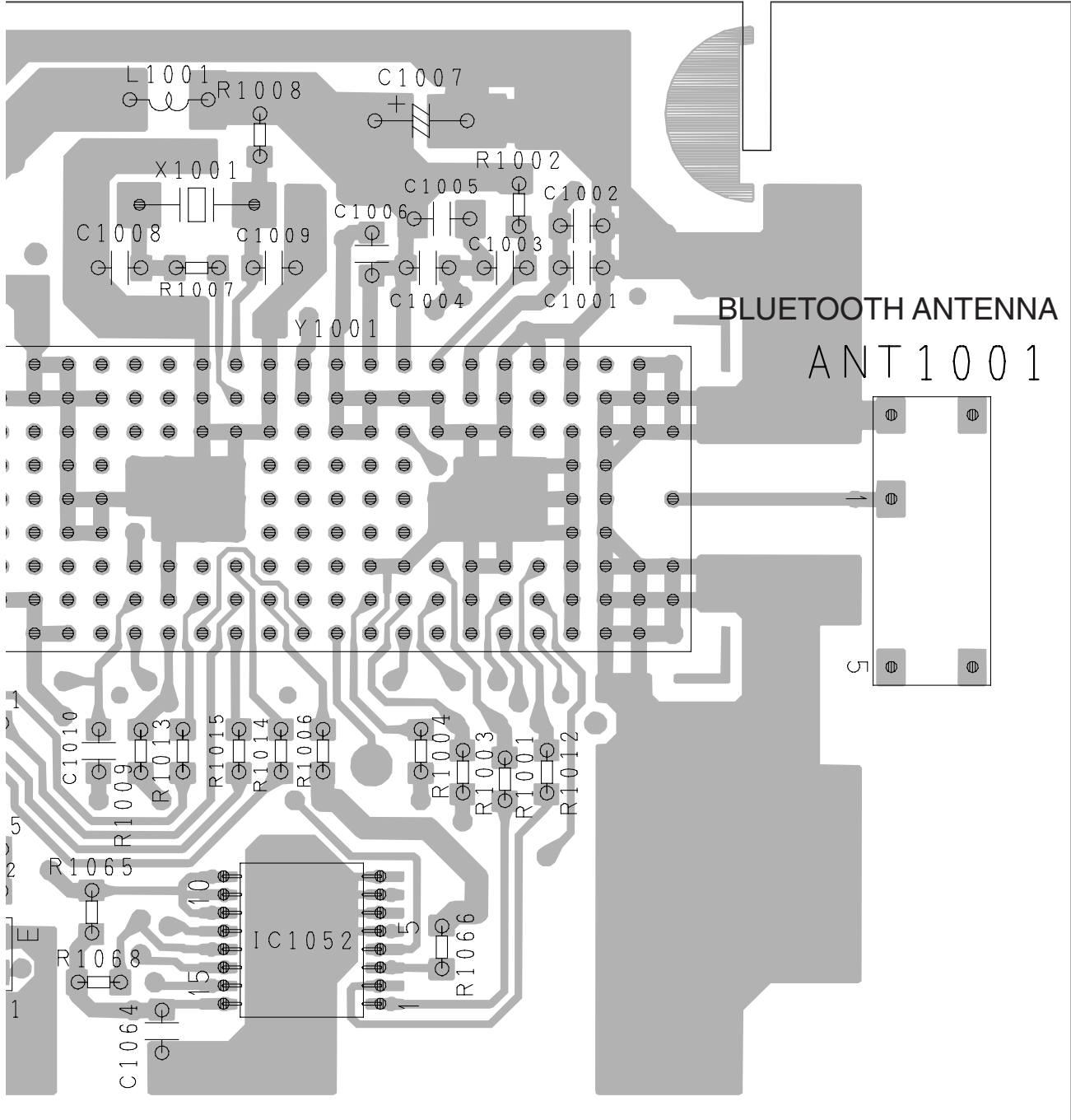


### A BLUETOOTH ASSY

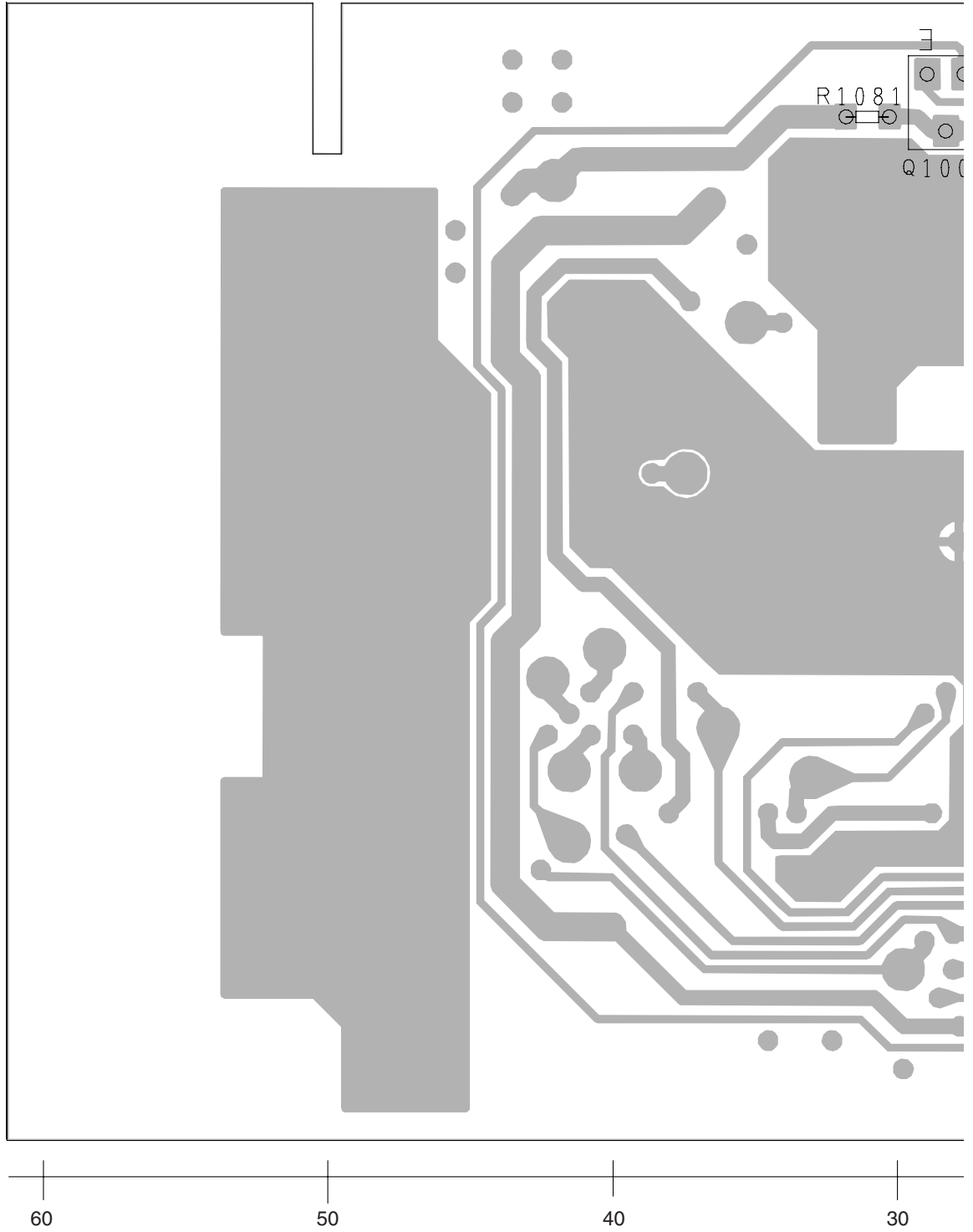


SIDE A

A  
B  
C  
D  
E  
F



# A BLUETOOTH ASSY



A  
B  
C  
D  
E  
F

**A**



# 5. ELECTRICAL PARTS LIST

**NOTE:**

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

*Chip Resistor*

RS1/○S○○○○J,RS1/○○S○○○○J

*Chip Capacitor (except for CQS.....)*

CKS....., CCS....., CSZS.....

- The  $\triangle$  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.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

Circuit Symbol and No.	Part No.	Circuit Symbol and No.	Part No.
<b>Unit Number: CWN1211</b>		R 1008 (A,32,37)	RS1/16S103J
<b>Unit Name : Bluetooth Assy</b>		R 1009 (A,28,15)	RS1/16S473J
		R 1012 (A,43,14)	RS1/16S681J
		R 1013 (A,30,15)	RS1/16S471J
		R 1014 (A,33,15)	RS1/16S471J

<b>A</b>		R 1015 (A,32,15)	RS1/16S471J
<b>Unit Number: CWN1211</b>		R 1021 (A,11,11)	RS1/16S203J
<b>Unit Name : Bluetooth Assy</b>		R 1022 (A,12,8)	RS1/16S203J
		R 1023 (A,8,10)	RS1/16S103J
		R 1024 (A,9,8)	RS1/16S103J

**MISCELLANEOUS**

IC 1041 (A,16,14) IC	AK2301A	R 1031 (A,17,22)	RS1/16S393J
IC 1051 (A,13,34) IC	NJM2391DL1-33	R 1032 (A,15,23)	RS1/16S393J
IC 1052 (A,34,8) IC	TC74HC4053AFT	R 1033 (A,16,26)	RS1/16S103J
IC 1081 (B,23,38) IC	BD5230FVE	R 1034 (A,14,24)	RS1/16S103J
Q 1001 (B,28,38) Transistor	DTC124EU	R 1041 (A,22,16)	RS1/16S471J
		R 1042 (A,22,10)	RS1/16S104J
		R 1045 (A,22,11)	RS1/16S473J
Q 1041 (A,22,7) Transistor	DTC124EU	R 1051 (B,11,30)	RS1/16S681J
D 1051 (B,7,14) Diode	UDZS6R8(B)	R 1052 (B,9,33)	RS1/16S681J
D 1052 (B,11,14) Diode	UDZS6R8(B)	R 1053 (B,17,29)	RS1/16S681J
D 1053 (B,16,17) Diode	UDZS6R8(B)		
D 1054 (B,16,20) Diode	UDZS6R8(B)	R 1054 (B,23,29)	RS1/16S0R0J
		R 1055 (B,21,33)	RS1/16S681J
D 1055 (B,6,33) Diode	UDZS6R8(B)	R 1056 (B,7,26)	RS1/16S0R0J
D 1056 (B,14,34) Diode	UDZS6R8(B)	R 1057 (B,13,36)	RS1/16S681J
D 1057 (B,8,25) Diode	UDZS6R8(B)	R 1058 (A,10,14)	RS1/16S0R0J
D 1058 (B,11,28) Diode	UDZS6R8(B)		
D 1059 (B,19,26) Diode	UDZS6R8(B)	R 1059 (B,17,22)	RS1/16S0R0J
		R 1060 (B,20,25)	RS1/16S0R0J
D 1060 (B,21,29) Diode	UDZS6R8(B)	R 1065 (A,26,9)	RS1/16S473J
D 1061 (B,15,29) Diode	UDZS6R8(B)	R 1066 (A,39,8)	RS1/16S473J
D 1062 (B,19,35) Diode	UDZS6R8(B)	R 1068 (A,27,6)	RS1/16S473J
L 1001 (A,29,38) Inductor	LCTAW1R0J3225		
L 1041 (A,18,30) Inductor	LCYC2R2K2125	R 1081 (B,31,37)	RS1/16S103J
Y 1001 (A,35,24) BT Module	CWX3131		
ANT1001 (A,56,21) Antenna	CTX1095		

**RESISTORS**

R 1001 (A,41,14)	RS1/16S681J
R 1002 (A,42,34)	RS1/16S0R0J
R 1003 (A,40,14)	RS1/16S681J
R 1004 (A,38,15)	RS1/16S103J
R 1006 (A,35,15)	RS1/16S103J

**CAPACITORS**

C 1001 (A,44,32)	CCSRCH101J50
C 1002 (A,44,33)	CKSRYB105K10
C 1003 (A,41,32)	CKSRYB104K16
C 1004 (A,38,32)	CKSRYB104K16
C 1005 (A,39,34)	CKSQYB475K6R3
C 1006 (A,36,32)	CKSRYB104K16
C 1007 (A,38,37)	CEVW100M16
C 1010 (A,27,15)	CCSRCH150J50

<u>Circuit Symbol and No.</u>		<u>Part No.</u>
C 1021	(A,9,11)	CCSRCH101J50
C 1022	(A,11,8)	CCSRCH101J50
C 1023	(A,8,13)	CKSRYB105K10
C 1024	(A,9,5)	CKSRYB105K10
C 1026	(A,11,5)	CKSRYB105K10
C 1031	(A,17,21)	CCSRCH101J50
C 1032	(A,15,21)	CKSRYB105K10
C 1033	(A,18,24)	CKSRYB105K10
C 1034	(A,14,22)	CKSRYB105K10
C 1041	(A,19,21)	CKSRYB104K16
C 1042	(A,18,26) 10 $\mu$ F	CCG1171
C 1043	(A,16,8)	CKSRYB105K10
C 1044	(A,19,8)	CKSRYB334K10
C 1051	(A,5,32)	CEVW100M16
C 1052	(A,9,34)	CKSRYB104K16
C 1053	(A,20,35)	CEVW100M16
C 1056	(B,13,30)	CCSRCH101J50
C 1064	(A,29,5)	CKSRYB103K50
C 1081	(B,25,37)	CKSRYB104K16
C 1082	(B,21,37)	CKSRYB473K50

A

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# 6. ADJUSTMENT

## 6.1 BLUETOOTH TEST MODE

### ● Bluetooth Test Mode (when using BT Built-in mobile phone)

#### 0. Specifications for BT Built-in mobile phone

A mobile phone supporting Bluetooth Ver. 1.1 and mounting HFP and OPP is required.  
Models with which connection has been verified are recommended.

\*HFP : Hands-Free Profile, OPP : Object Push Profile

Recommended mobile phone model;  
for AVIC-HD1BT/EW5 (ND-BT1/E5)  
- SonyEricsson S700i/K750i

for AVIC-Z1/UC + ND-BT1/E5  
- AUDIOVOX SMT5600

Notes: SMT5600 is not possible to transfer whole address book at a time.  
It can be transferred one by one on this model.

#### 1. Caution

\*This is a precaution for the case where the mobile phone is actually connected at the serviced site.

For AVIC-HD1BT/EW5 and AVIC-Z1/UC, up to 5 sets of Bluetooth units can be registered.

When more than 5 sets are tried to be registered, the 6th set and beyond will be overwritten. (Overwriting will be made by selecting the model number to be overwritten.)

In the case of overwriting, be careful as the device information stored by the user will be deleted.

#### 2. Outline of functions

When checking the operation using the BT built-in mobile phone, check the connection under the normal operation.

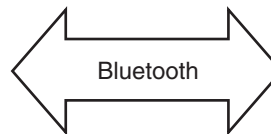
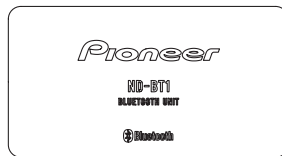
- Checking of Bluetooth connection (authentication connection and voice connection)
- Checking of Bluetooth antenna sensitivity (connection)

#### 3. Configuration diagram

AVIC-HD1BT/EW5, AVIC-Z1/UC




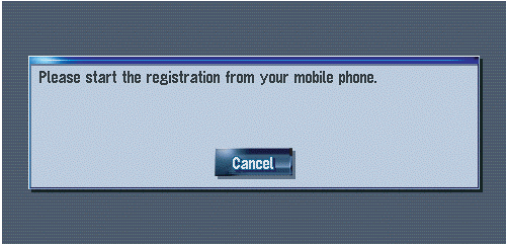
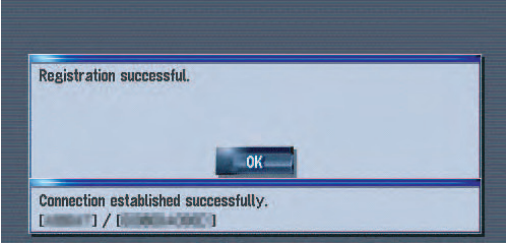
ND-BT1/E5



Mobile Phone



#### 4. Procedure for checking

Display	Operation Method																
 <p>Connection Status</p> <table border="1"> <tr><td>Speed Pulse</td><td>: 0</td></tr> <tr><td>GPS Aerial</td><td>: NOK </td></tr> <tr><td>Phone Connection Status</td><td>: OK </td></tr> <tr><td>Installation Position</td><td>: OK</td></tr> <tr><td>Handbrake</td><td>: On</td></tr> <tr><td>Power Voltage</td><td>: 11.9V</td></tr> <tr><td>Illumination</td><td>: Off</td></tr> <tr><td>Back Signal</td><td>: Low</td></tr> </table> <p>Back</p>	Speed Pulse	: 0	GPS Aerial	: NOK	Phone Connection Status	: OK	Installation Position	: OK	Handbrake	: On	Power Voltage	: 11.9V	Illumination	: Off	Back Signal	: Low	<p>ND-BT1/E5 will be connected to the connectable product, and start.</p> <p>Select [Menu]→[Settings]→[Hardware]→[Connection Status].</p> <p>Make sure on the left screen that the items under Phone Connection Status are indicating [OK]. In this case, because registration of the BT telephone has not been completed, level indication of the antenna bar is not displayed even though the status is indicated as OK. * In the case of NOK, possible case is poor connection between ND-BT1/E5 and navigation product or failure of the wired section of ND-BT1/E5.</p>
Speed Pulse	: 0																
GPS Aerial	: NOK																
Phone Connection Status	: OK																
Installation Position	: OK																
Handbrake	: On																
Power Voltage	: 11.9V																
Illumination	: Off																
Back Signal	: Low																
<p style="text-align: center;">↓</p> 	<p>Select [Menu]→[Info/Phone]→[Phone Menu]→[Phone Settings]→[Registration]→[Mobile].</p> <p>Search for the Bluetooth device and enter the passkey by operating the mobile telephone.</p> <p>* In case the device name is not displayed in Bluetooth device search, the possible cause is the failure of the wireless section of ND-BT1/E5.</p>																
<p style="text-align: center;">↓</p> 	<p>When the connection with the BT telephone is completed, the screen as shown on the left will be displayed.</p> <p>Antenna bar will be displayed on the [Connection Status] screen.</p> <p>When the connection is successfully established, conduct speech test and check the voice transmission and reception.</p>																

## Bluetooth Test Mode (using spectrum analyzer)

### 1. Cautions

If there is a spectrum analyzer supporting 2.4 GHz at the service site, confirmation of transmission carrier becomes possible.  
Since ND-BT1/E5 cannot operate singly, the AVIC-HD1/EW5 or AVIC-Z1/UC is required.

Carrier existence is checked by removing the product case and applying the probe onto the "ANT" land of the base unit.

Since it is done by probe connection, the level cannot be confirmed accurately.

### 2. Function outline

Simple operation check on Bluetooth is executed in test mode using a spectrum analyzer supporting 2.4 GHz.

Output check on Bluetooth unit

### 3. Configuration diagram

AVIC-HD1/EW5, AVIC-Z1/UC



ND-BT1/E5

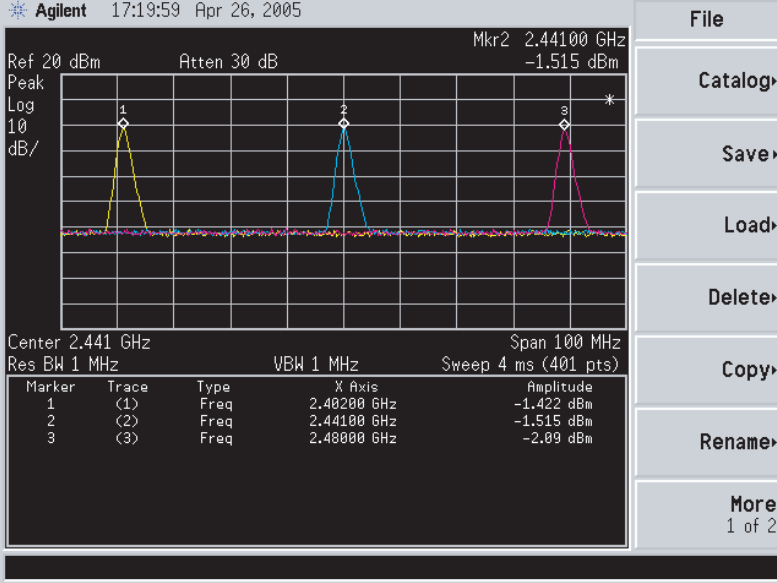


Spectrum analyzer supporting 2.4 GHz



### 4. Procedure for test mode startup

Display	Operation Method										
<p style="text-align: center;">↓</p>	<p>Enter the test mode using a product connectable to ND-BT1/E5.</p> <p>When the test screen is displayed, select [Bluetooth Unit Test] from the menu.</p> <table border="0"> <tr> <td>1) Loop Back(TX)</td> <td>Test (Not used for servicing.)</td> </tr> <tr> <td>2) Page Scan</td> <td>Test (Not used for servicing.)</td> </tr> <tr> <td>3) Inquiry Scan</td> <td>Test (Not used for servicing.)</td> </tr> <tr> <td>4) Local TX</td> <td>Test (Not used for servicing.)</td> </tr> <tr> <td>5) Local TX(No Modulated)</td> <td>Test (Not used for servicing.)</td> </tr> </table> <p>5) Select Local TX(No Modulated) Test.</p>	1) Loop Back(TX)	Test (Not used for servicing.)	2) Page Scan	Test (Not used for servicing.)	3) Inquiry Scan	Test (Not used for servicing.)	4) Local TX	Test (Not used for servicing.)	5) Local TX(No Modulated)	Test (Not used for servicing.)
1) Loop Back(TX)	Test (Not used for servicing.)										
2) Page Scan	Test (Not used for servicing.)										
3) Inquiry Scan	Test (Not used for servicing.)										
4) Local TX	Test (Not used for servicing.)										
5) Local TX(No Modulated)	Test (Not used for servicing.)										

Display	Operation Method																				
<pre>Bluetooth Unit Test Local TX(No Modulate) Test  1) TX Frequency [ 00:2402MHz ] 2) RX Frequency [ 00 ]  [OK]Select [Ret]Return [Up Down]Change Item</pre>	<p>Bring the cursor to [TX Frequency], and push [OK] button.</p>																				
<pre>Bluetooth Unit Test Local TX(No Modulate) Test  1) TX Frequency [ 00:2402MHz ] 00:2402MHz 2) RX Frequency [ 00 ] 27:2441MHz 4E:2480MHz  [OK]Select [Ret]Return [Up Down]Change Item</pre>	<p>As the selectable frequencies will be displayed on the right side of the screen, bring the cursor by using up/down cursor and push [OK] button.</p> <p>00 : 2 402 MHz (default value)  27 : 2 441 MHz  4E : 2 480 MHz</p>																				
<pre>Bluetooth Unit Test Local TX(No Modulate) Test  1) TX Frequency [ 00:2402MHz ] 2) RX Frequency [ 00 ]  OK [OK]Exec [Ret]Return [Menu]Parameter Change</pre>	<p>Press [Ret] key to return to the top screen of Local TX (No Modulated) Test.</p> <p>* On the top screen, " [OK] Exec " is displayed on the lower left position of the screen.</p> <p>Push [OK] button on the top screen, and take measurement using a spectrum analyzer.</p> <p>Apply a probe to [ANT] land on the PCB, and check if any carrier is displayed at the designated frequency band. Furthermore, make sure that carrier is displayed at each of the three bands.</p>																				
 <p>Agilent 17:19:59 Apr 26, 2005</p> <p>Ref 20 dBm Atten 30 dB Mkr2 2.44100 GHz -1.515 dBm</p> <p>Peak Log 10 dB/</p> <p>Center 2.441 GHz Span 100 MHz  Res BW 1 MHz VBW 1 MHz Sweep 4 ms (401 pts)</p> <table border="1"> <thead> <tr> <th>Marker</th> <th>Trace</th> <th>Type</th> <th>X Axis</th> <th>Amplitude</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>(1)</td> <td>Freq</td> <td>2.40200 GHz</td> <td>-1.422 dBm</td> </tr> <tr> <td>2</td> <td>(2)</td> <td>Freq</td> <td>2.44100 GHz</td> <td>-1.515 dBm</td> </tr> <tr> <td>3</td> <td>(3)</td> <td>Freq</td> <td>2.48000 GHz</td> <td>-2.09 dBm</td> </tr> </tbody> </table> <p>File  Catalog  Save  Load  Delete  Copy  Rename  More  1 of 2</p>	Marker	Trace	Type	X Axis	Amplitude	1	(1)	Freq	2.40200 GHz	-1.422 dBm	2	(2)	Freq	2.44100 GHz	-1.515 dBm	3	(3)	Freq	2.48000 GHz	-2.09 dBm	
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# 7. GENERAL INFORMATION

## 7.1 DIAGNOSIS

### 7.1.1 DISASSEMBLY

#### ● Removing the Case (Fig.1)

- 1 Remove the four screws by tolcs driver (GGK1072) and then remove the Case.

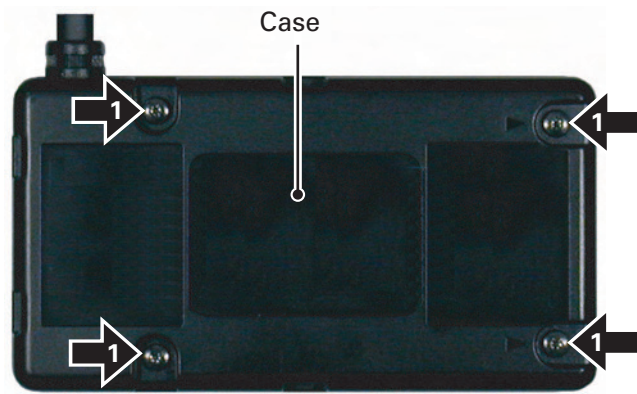


Fig.1

#### ● Removing the Bluetooth Assy (Fig.2)

- 1 Remove the solder.

Remove the Bluetooth Assy.

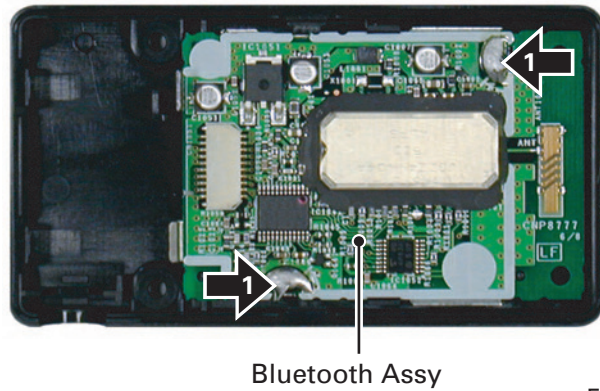
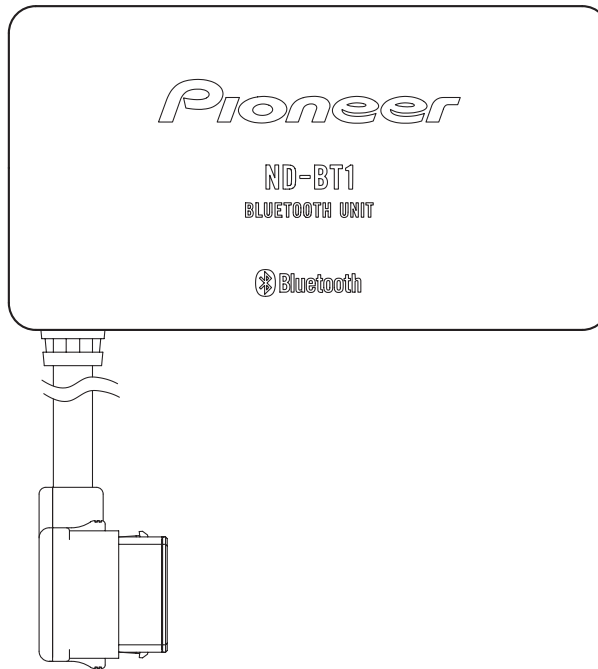
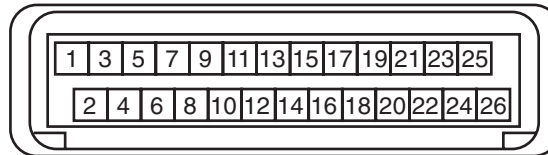


Fig.2



TO NAVIGATION UNIT

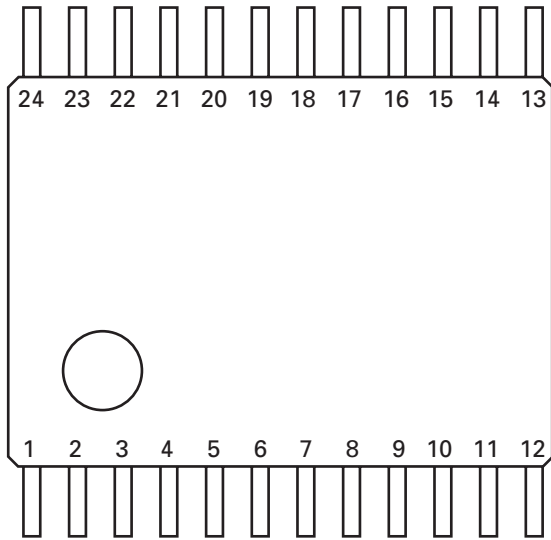


	Pin Name		Pin Name
1	DT2-	14	(NC)
2	MICIN	15	(NC)
3	TELOUT	16	BT_TX
4	(NC)	17	BT_CTS
5	AGND	18	BT_RX
6	BOOT_E	19	/CE
7	BT_RST	20	BT_RTS
8	(NC)	21	(NC)
9	BT_TEST	22	(NC)
10	BT_MUTE	23	BT5V
11	(NC)	24	(NC)
12	(NC)	25	(NC)
13	(NC)	26	DGND
		GNDE	GND

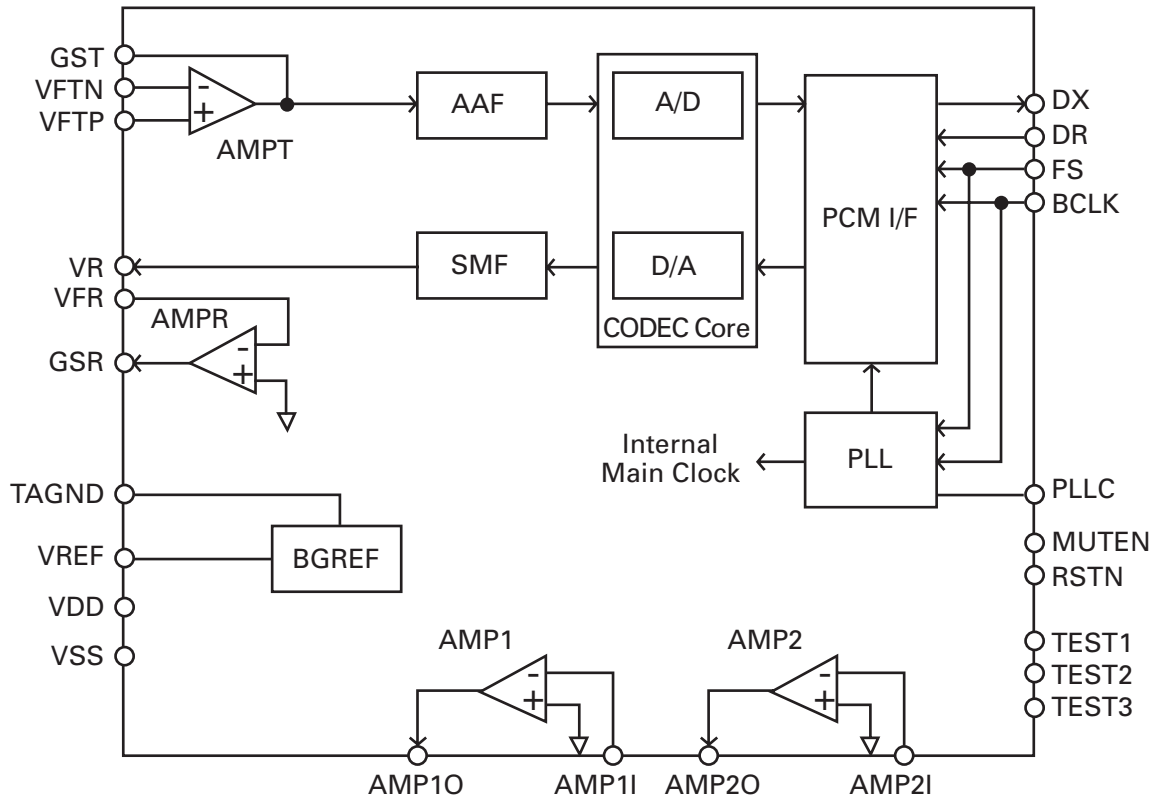
# 7.2 IC

AK2301A

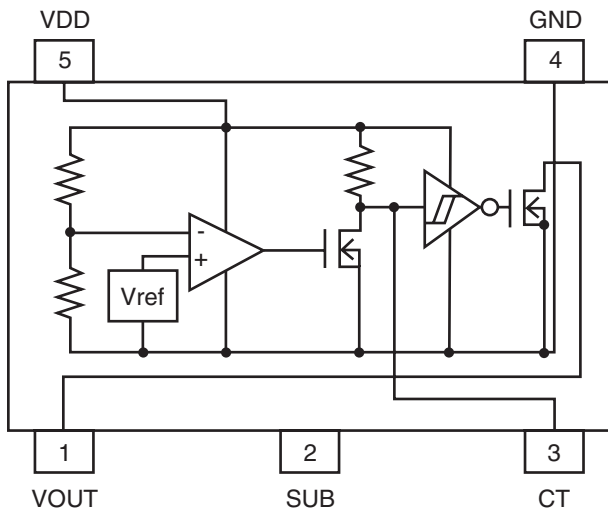
● Pin Layout



● Block Diagram



BD5230FVE



A  
B  
C  
D  
E  
F

# 8. OPERATIONS

## About this unit

This unit is used to connect a Bluetooth enabled cellular phone to a Pioneer HDD Navigation System.

## About Bluetooth



Bluetooth is a short-range wireless radio connectivity technology that is developed as a cable replacement for cellular phones, handheld PCs and other devices. Bluetooth operates in 2.4 GHz frequency range and transmits voice and data at speeds up to 1 megabit per second. Bluetooth was launched by a special interest group (SIG) that comprises of Ericsson Inc., Intel Corp., Nokia Corp., Toshiba and IBM in 1998, and it is currently developed by nearly 2 000 companies worldwide.

- 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.

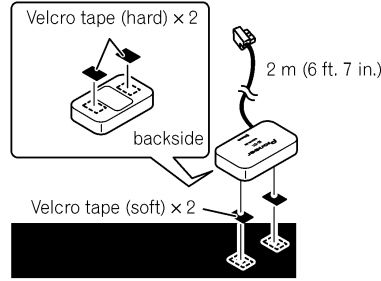
## Operating environment

This unit should be used within the temperature ranges shown below.

Operating temperature range : -10 to +60 °C  
(14 to 140 °F)  
EN300328 ETC test temperature : -20 and +55 °C  
(-4 and 131 °F)

- The line-of-sight distance between this unit and your cellular phone must be 10 meters or less in sending and receiving voice and data via Bluetooth technology. However, the transmission distance may become shorter than the estimated distance, depending on the environment in use.
- There are some Bluetooth enabled cellular phones that can be incompatible with this unit due to their Bluetooth version.
- The performance test of this unit with all Bluetooth enabled cellular phones is not conducted. Also, it is not guaranteed that this unit can be connected to all Bluetooth enabled cellular phones.
- About the Bluetooth profile and its overview  
It is required that the Bluetooth enabled cellular phone to be connected to this unit is implemented with the same profile.  
**HFP** (Hands Free Profile): the profile used for hands-free calling  
**OPP** (Object Push Profile): the profile used for transferring data such as address books

## Installation notes



- This unit may be installed in relatively unnoticeable positions such as the passenger seat floor, however, before fixing the unit, check the reception condition of the Bluetooth unit with the setup-status monitor of navigation system.
- Referring to Operation Manual included in navigation system, check the connection and fine-tune the reception of this unit.
- Thoroughly wipe off the surface before affixing the velcro tape.
- Do not install the unit where it may (i) obstruct the driver's vision, (ii) impair the performance of any of the vehicle's operating systems or safety features, including air bags, hazard lamp buttons or (iii) impair the driver's ability to safely operate the vehicle.
- When disconnecting a connector, pull the connector itself. Do not pull the lead, as you may pull it out of the connector.
- Do not install the unit in places where it may become subject to high temperatures or humidity, such as:
  - \* Places close to a heater outlet.
  - \* Places exposed to direct sunlight, such as on top of the dashboard or the rear shelf.
- Places that may be splashed by rain, for example close to the door.
- Use supplied velcro tapes to secure the unit so that it doesn't move. It is extremely dangerous if cords are exposed on the floor as they may become entangled with the brake pedal etc. Hide cords so that they do not get in the way when you are driving.
- Do not disassemble or modify this unit. To do so may cause a fault.

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5

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6

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7

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8

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A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

ND-BT1/E5

■

7

■

8

■