ORDER NO. KM41712123CE
F13

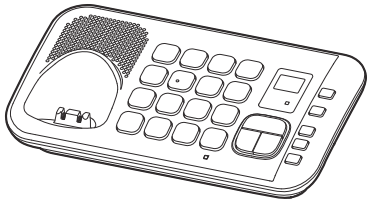
Service Manual

HD Link2Cell Cordless Telephone with Digital Answering Machine

Model No. KX-TGE674
KX-TGEA61

B: Black Version

KX-TGEA61
(Handset)



KX-TGE670
(Base Unit)

(Charger Unit)

Configuration for each model

Model No.	Base Unit	Handset	Charger Unit	Expandable
KX-TGE674	1(TGE670)	4(TGEA61)	3	Up to 6
KX-TGEA61		1(TGEA61)	1	

*KX-TGEA61 is also an optional accessory, which contains a handset and a charger.

Panasonic®

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

IMPORTANT INFORMATION ABOUT LEAD FREE, (PbF), SOLDERING

If lead free solder was used in the manufacture of this product, the printed circuit boards will be marked PbF. Standard leaded, (Pb), solder can be used as usual on boards without the PbF mark.
When this mark does appear, please read and follow the special instructions described in this manual on the use of PbF and how it might be permissible to use Pb solder during service and repair work.

- When you note the serial number, write down all 11 digits. The serial number may be found on the bottom of the unit.
- The illustrations in this Service Manual may vary slightly from the actual product.

1 Safety Precautions

1.1. Safety Precautions

1. Before servicing, unplug the AC power cord to prevent an electric shock.
2. When replacing parts, use only the manufacturer's recommended components.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to perform the following insulation resistance test to prevent the customer from being exposed to shock hazards.

1.2. For Service Technicians

- **Repair service shall be provided in accordance with repair technology information such as service manual so as to prevent fires, injury or electric shock, which can be caused by improper repair work**.
  1. When repair services are provided, neither the products nor their parts or members shall be remodeled.
  2. If a lead wire assembly is supplied as a repair part, the lead wire assembly shall be replaced.
  3. FASTON terminals shall be plugged straight in and unplugged straight out.

- **ICs and LSIs are vulnerable to static electricity.**
  When repairing, the following precautions will help prevent recurring malfunctions.
  1. Cover plastic parts boxes with aluminum foil.
  2. Ground the soldering irons.
  3. Use a conductive mat on worktable.
  4. Do not touch the IC or LSI pins with bare fingers.

2 Warning

2.1. Battery Caution

Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

Attention:

A nickel metal hydride battery that is recyclable powers the product you have purchased.
Please call 1-800-8-BATTERY (1-800-822-8837) for information on how to recycle this battery.

2.2. About Lead Free Solder (PbF: Pb free)

Note:

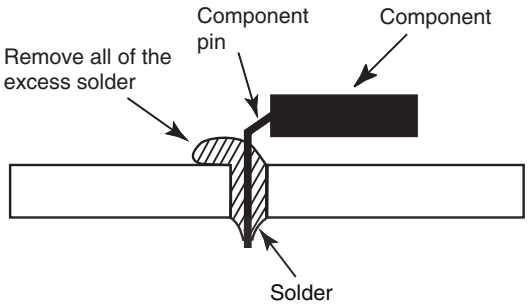
In the information below, Pb, the symbol for lead in the periodic table of elements, will refer to standard solder or solder that contains lead.

We will use PbF solder when discussing the lead free solder used in our manufacturing process which is made from Tin (Sn), Silver (Ag), and Copper (Cu).

This model, and others like it, manufactured using lead free solder will have PbF stamped on the PCB. For service and repair work we suggest using the same type of solder.

Caution

- PbF solder has a melting point that is 50 °F ~ 70 °F (30 °C ~ 40 °C) higher than Pb solder. Please use a soldering iron with temperature control and adjust it to 700 °F ± 20 °F (370 °C ± 10 °C).
- Exercise care while using higher temperature soldering irons.:
  Do not heat the PCB for too long time in order to prevent solder splash or damage to the PCB.
- PbF solder will tend to splash if it is heated much higher than its melting point, approximately 1100 °F (600 °C).
- When applying PbF solder to double layered boards, please check the component side for excess which may flow onto the opposite side (See the figure below).

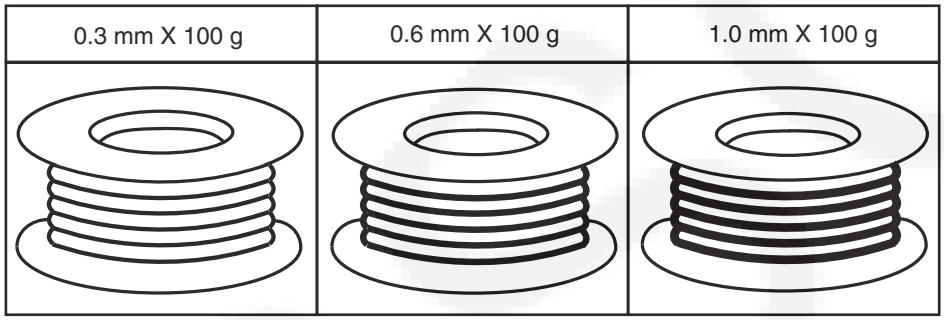


(Slice View)

2.2.1. Suggested PbF Solder

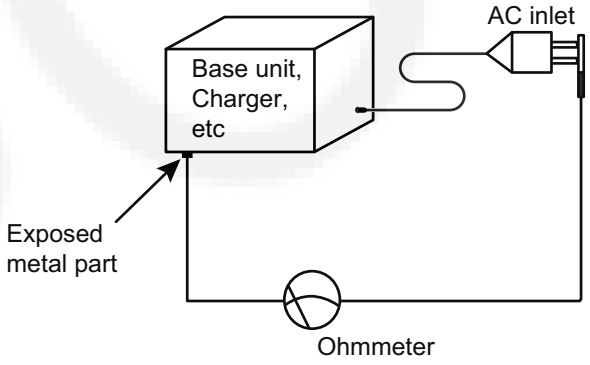
There are several types of PbF solder available commercially. While this product is manufactured using Tin, Silver, and Copper (Sn+Ag+Cu), you can also use Tin and Copper (Sn+Cu), or Tin, Zinc, and Bismuth (Sn+Zn+Bi). Please check the manufacturer's specific instructions for the melting points of their products and any precautions for using their product with other materials.

The following lead free (PbF) solder wire sizes are recommended for service of this product: 0.3 mm, 0.6 mm and 1.0 mm.



2.3. Insulation Resistance Test

1. Unplug the AC inlet and connect the two prongs of the plug with a jumper wire.
2. Measure the resistance value with ohmmeter between the jumpered AC plug and all the terminals as shown in following figures.
3. If the measurement is outside the specified limits, there is a possibility of shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.



Resistance = more than 10MΩ (at DC 500V, for 2 seconds)

2.4. Discarding of P. C. Board

When discarding P. C. Board, delete all personal information such as telephone directory and caller list or scrap P. C. Board.

3 Specifications

- **Standard:**
  DECT 6.0 (Digital Enhanced Cordless Telecommunications 6.0)
  Bluetooth wireless technology 2.1
  – Hands Free Profile (HFP)
  – Headset Profile (HSP)
  – Phone Book Access Profile (PBAP)
  – Object Push Profile (OPP)
  – Serial Port Profile (SPP)
  – Message Access Profile (MAP)
- **Frequency range:**
  1.92 GHz to 1.93 GHz (DECT)
  2.402 GHz to 2.48 GHz (Bluetooth)
- **RF transmission power:**
  115 mW (max.)
- **Power source:**
  120 V AC, 60 Hz
- **Power consumption:**
  Base unit:
  Standby: 1.2 W
  Maximum: 4.5 W
  Charger:
  Standby: 0.1 W
  Maximum: 1.8 W
- **Operating conditions:**
  0 °C – 40 °C (32 °F – 104 °F), 20 % – 80 % relative air humidity (dry)
- **Dimension (H x W x D):**
  Base unit: Approx. 61 mm x 197 mm x 99 mm
  Handset: Approx. 171 mm x 54 mm x 32 mm
  Charger: Approx. 46 mm x 72 mm x 74 mm
- **Mass Weight:**
  Base unit: 280 g
  Handset: 128 g
  Charger: 100 g

Note:

• Design and specifications are subject to change without notice.

4 Location of Controls and Components

Refer to the Operating Instructions.

Note:

You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

5 Installation Instructions

Refer to the Operating Instructions.

Note:

You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

6 Operating Instructions

Refer to the Operating Instructions.

Note:

You can download and refer to the Operating Instructions (Instruction book) on TSN Server.

7 Schematic Diagram

7.1. For Schematic Diagram

7.1.1. Base Unit (Schematic Diagram (Base Unit_Main))

Notes:

1. DC voltage measurements are taken with voltmeter from the negative voltage line.

> Important Safety Notice:
> Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only the manufacture's specified parts.

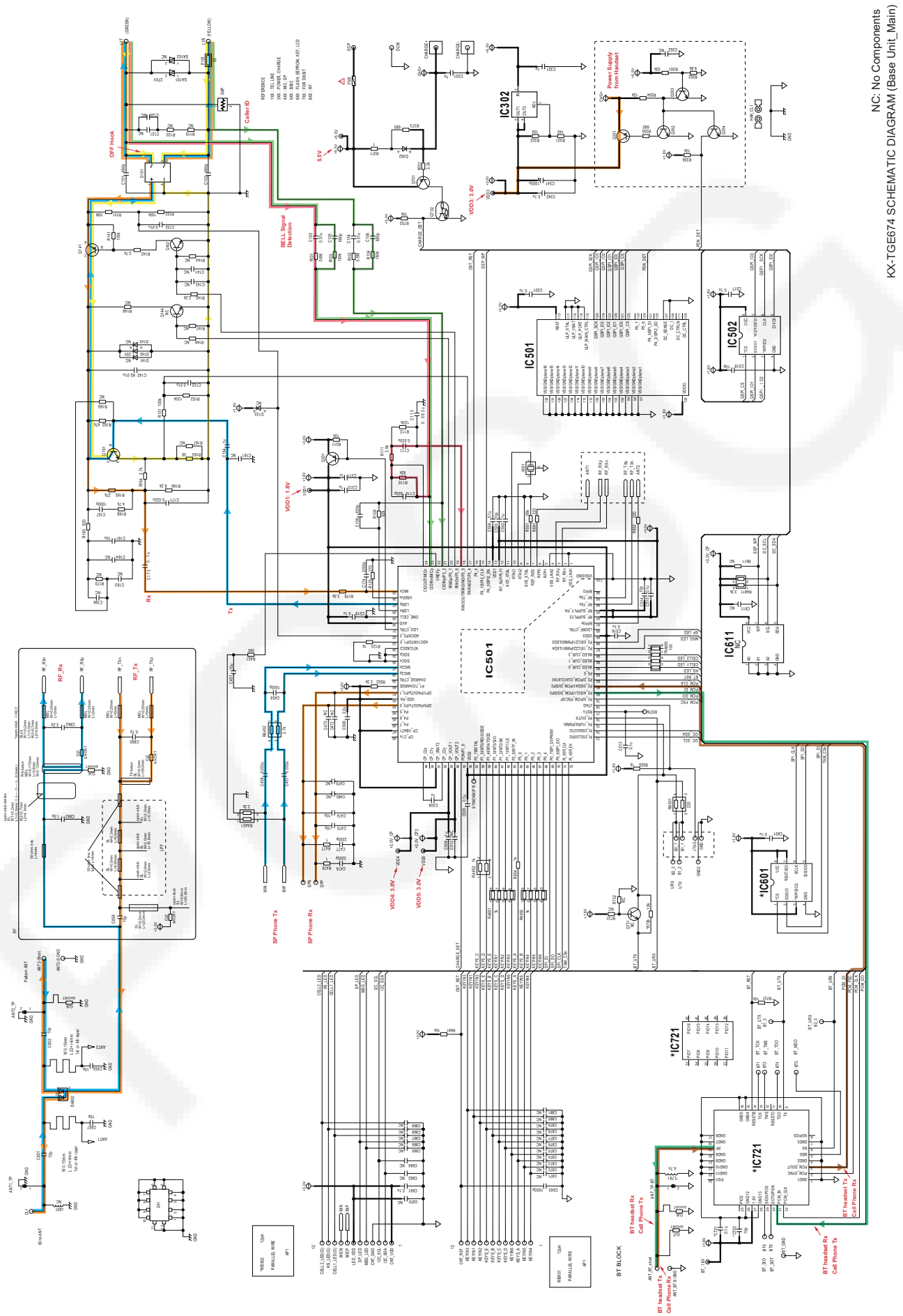
2. The schematic diagrams may be modified at any time with the development of new technology.

7.1.2. Handset (Schematic Diagram (Handset_Main))

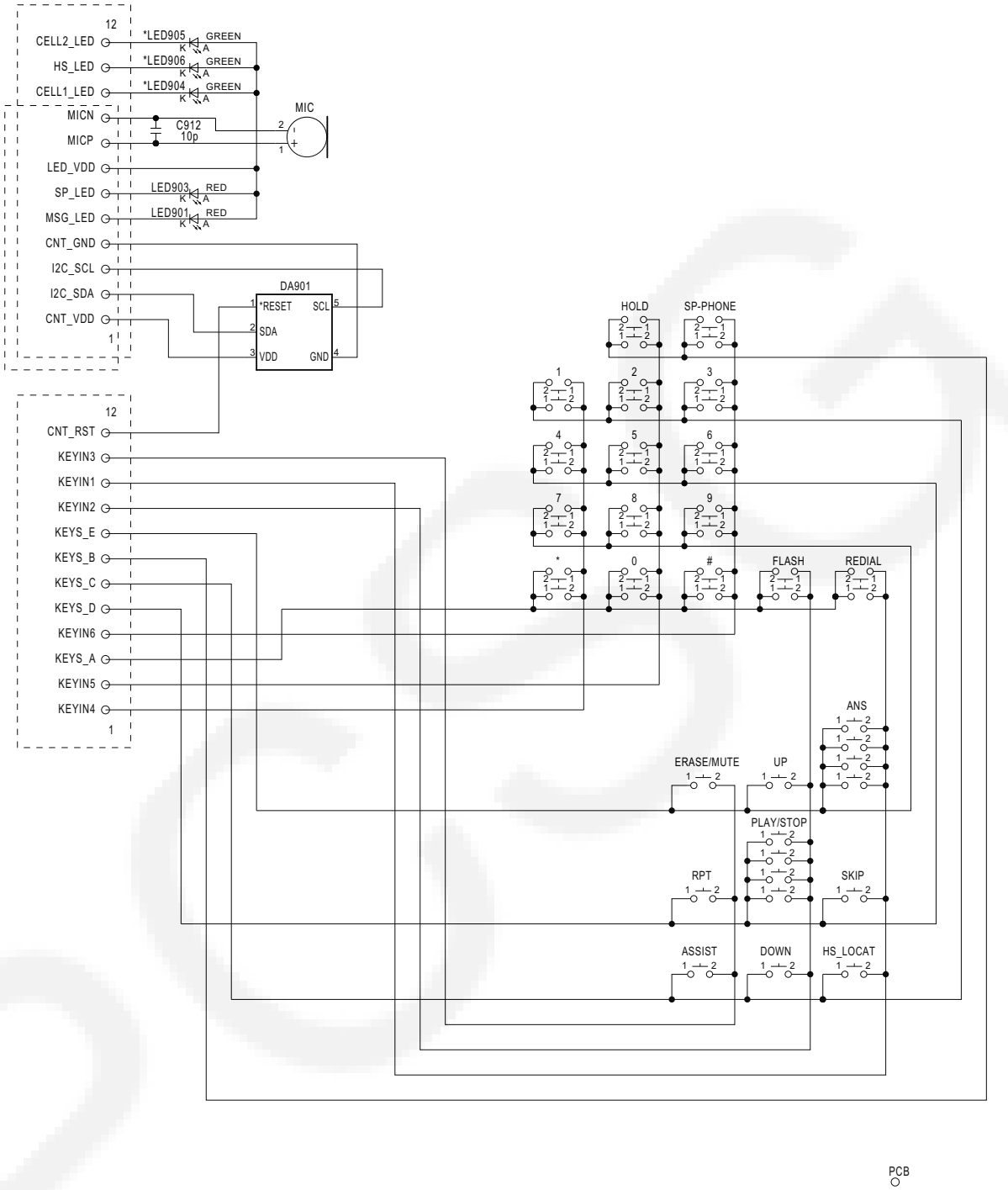
Notes:

1. DC voltage measurements are taken with an oscilloscope or a tester with a ground.
2. The schematic diagrams may be modified at any time with the development of new technology.

7.2. Schematic Diagram (Base Unit_Main)



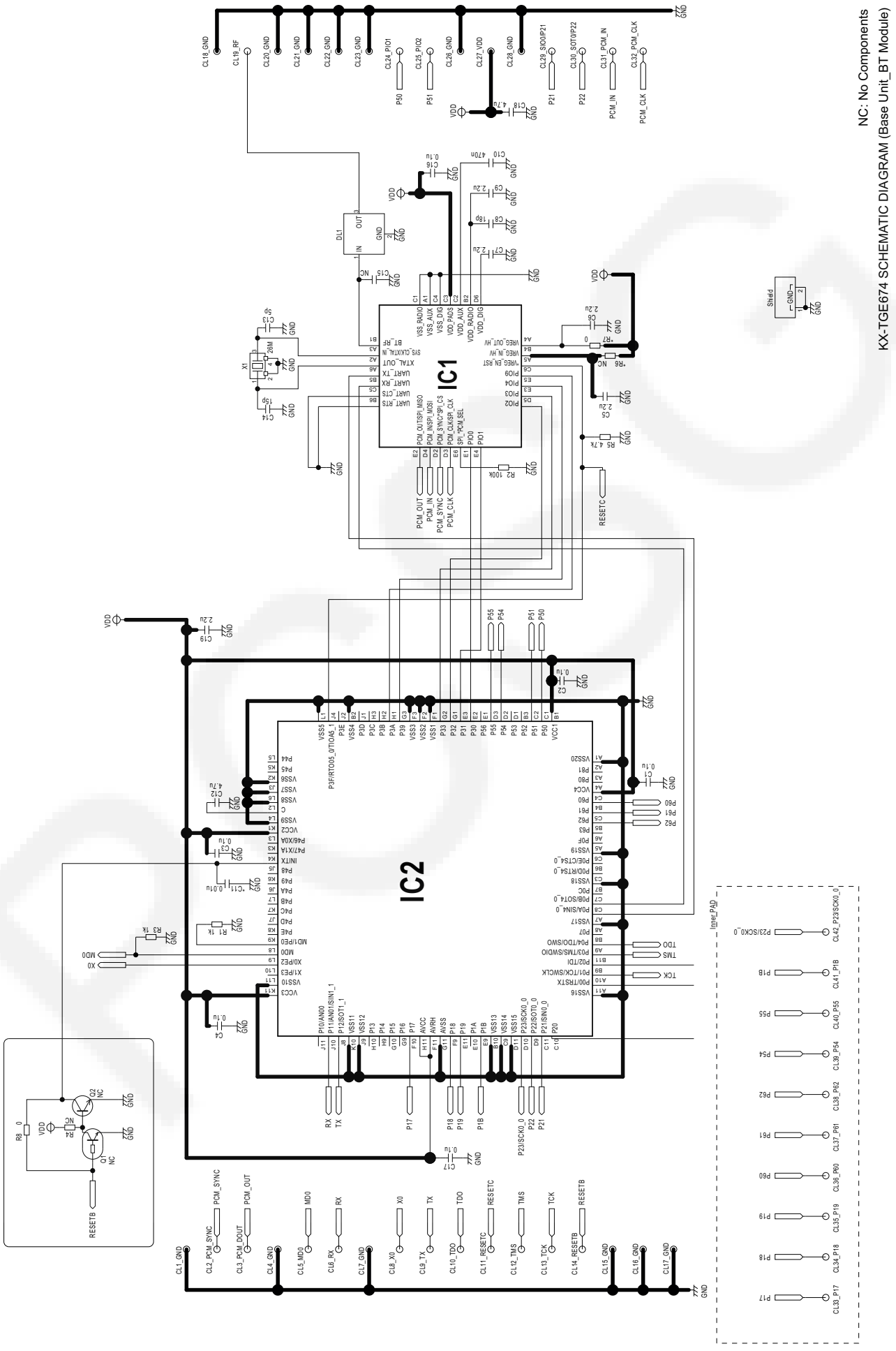
7.3. Schematic Diagram (Base Unit_Operation)



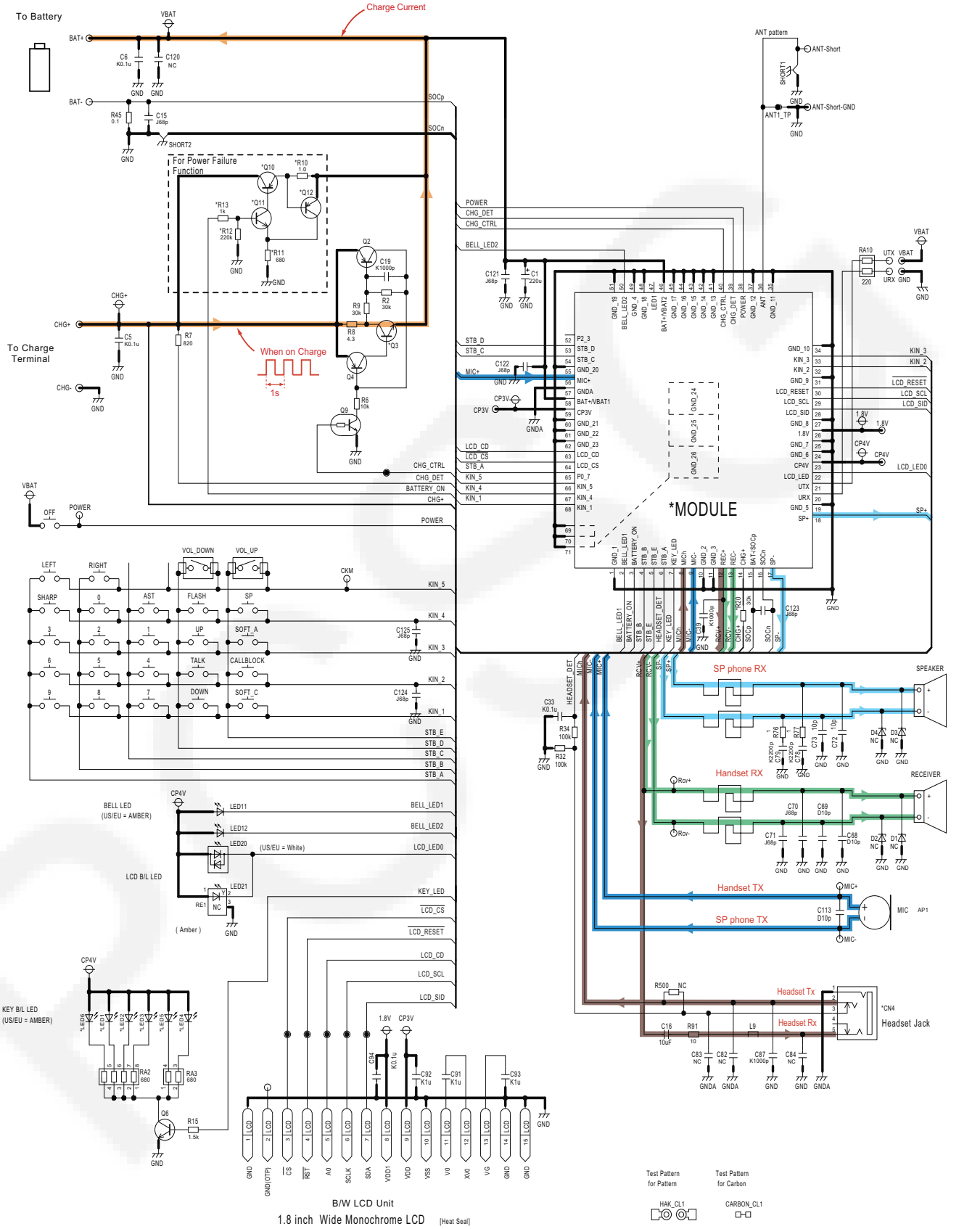
NC: No Components

KX-TGE674 SCHEMATIC DIAGRAM (Base Unit_Operation)

7.4. Schematic Diagram (Base Unit_BT Module)



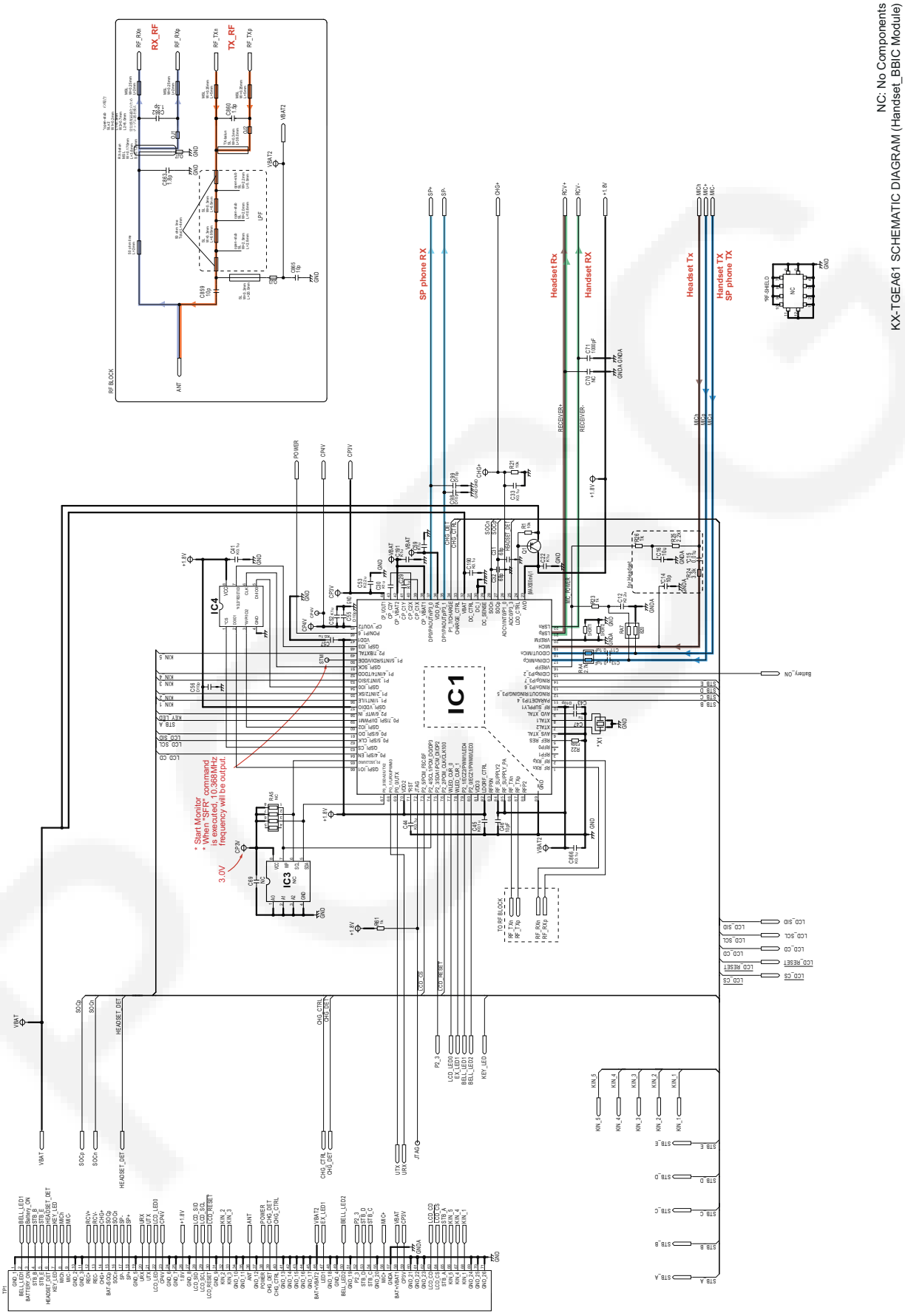
7.5. Schematic Diagram (Handset_Main)



NC: No Components

KX-TGEA61 SCHEMATIC DIAGRAM (Handset_Main)

7.6. Schematic Diagram (Handset_BBIC Module)



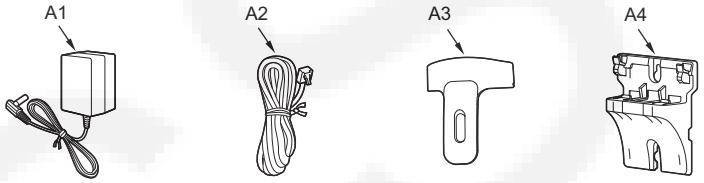
8 Accessories and Replacement Parts List

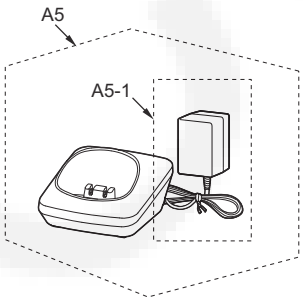
8.1. Replacement Parts List

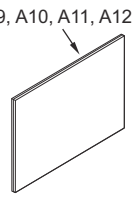
1. Important safety notice
   Components identified by the ⚠ mark indicates special characteristics important for safety. When replacing any of these components, only use specified manufacture's parts.
2. ISO code (Example: ABS-94HB) of the remarks column shows quality of the material and a flame resisting grade about plastics.

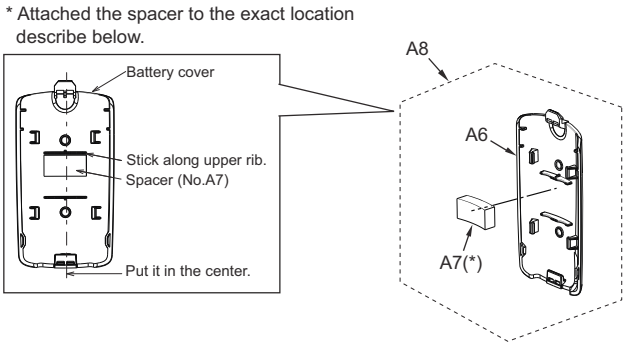
Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	A1	PNLV226-0X	AC ADAPTOR (FOR BASE UNIT)	
	A2	PNJA1186Z	CORD, TELEPHONE	
	A3	PNKE2125Z1	HANGER,BELT CLIP	ABS-HB
	A4	PNKL1001X1	WALL MOUNT ADAPTOR	PS-HB
	A5	PNLC1079ZB	CHARGER UNIT	
⚠	A5-1	PNLV233-AX	AC ADAPTOR (FOR CHARGER UNIT)	
	A6	PNKK1147Z1	LID, BATTERY	ABS-HB
	A7	PNHS1691Z	SPACER, BATTERY	
	A8	PNYNTGEA60BR	LID, BATTERY ASS'Y	
	A9	PNQW5465Z	QUICK GUIDE	
	A10	PNQX8638Z	INSTRUCTION BOOK (*1)	
	A11	PNQW5467Z	LEAFLET, AUTOMATED CALL BLOCK	
	A12	PNQW5581Z	LEAFLET	

Note:
(*1) You can download and refer to the Operating Instructions (Instruction book) on TSN Server.









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KX-TGE674B