ORDER NO. KM41506860SE

Service Manual

Telephone Equipment

Supplement

Model No.

KX-TGC210BL/KX-TGC212BL/
KX-TGC213BL/KX-TGC222BL/
KX-TGC210CX/KX-TGC212CX/
KX-TGC210HK/KX-TGC212HK/
KX-TGC210TU/KX-TGC210TW/
KX-TGC212TW/KX-TGC210BX/
KX-TGC212BX/KX-TGC220BX/
KX-TGC222BX/KX-TGC210UE/
KX-TGC212UE/KX-TGC213UE/
KX-TGC220UE/KX-TGC222UE/
KX-TGC210ML/KX-TGC212ML/
KX-TGC210GR/KX-TGC210SL/
KX-TGC222SL/KX-TGC210NL/
KX-TGC212NL/KX-TGC213NL

Digital Cordless Phone
Digital Cordless Answering System

B: Black Version S: Silver Version
C: Blue Version W: White Version

Please use this manual with the original service manual mentioned on the next page.

⚠ 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.

TABLE OF CONTENTS

Panasonic®

1 ORIGINAL SERVICE MANUAL INFORMATION

Handset: For Suffix B or Later

Model No. on S/M	Destinations	Order No. of S/M	Suffix Code	
			Base Unit	Handset
KX-TGC210BL/KX-TGC212BL/KX-TGC213BL/KX-TGC222BL/KX-TGC210CX/KX-TGC212CX/KX-TGC210HK/KX-TGC212HK/KX-TGC210TU/KX-TGC210TW/KX-TGC212TW/KX-TGC210BX/KX-TGC212BX/KX-TGC220BX/KX-TGC222BX/KX-TGC210UE/KX-TGC212UE/KX-TGC213UE/KX-TGC220UE/KX-TGC222UE/KX-TGC210ML/KX-TGC212ML/KX-TGCA20EX/KX-TGCA20BX/KX-TGCA20CX/KX-TGCA20HK/KX-TGCA20TW/KX-TGCA20ML	BL=for Belgium, CX=for Singapore, Vietnam, Indonesia, HK=for Hong Kong, TU=for Tunisia, Algeria, Morocco, TW=for Taiwan, BX: for Iran, Yemen, Pakistan, Ghana, Libyan Arab, Mauritius, Lebanon, Bahrain, UE=for UAE, Nigeria, Kuwait, Qatar, ML=for Malaysia	KM41408855CE	A to B	A to B
KX-TGC210FX/KX-TGC210PD/KX-TGC210SL/KX-TGC210NL/KX-TGC210GR/KX-TGC212FX/KX-TGC212NL/KX-TGC213NL/KX-TGC222SL/KX-TGCA20EX/KX-TGCA20FX	FX=for Czech, Slovakia, Estonia, Latvia, Lithuania, Croatia, Slovenia, Rumania, Bulgaria, Albania, Bosnia and Herzegovina, Serbia, Egypt, Jordan, Oman, Barclay, The Former Yugoslav Republic of Macedonia, PD=for Poland, Hungary, SL=for Switzerland, NL=for Netherlands, GR=for Greece	KM41406843CE	A to B	A to B

2 REPLACEMENT PARTS LIST

2.1. REFERENCE CHART

Reason for Change	
*The following items (1-8) indicate the reason for change. See the "**Notes**" column for each part in **ORIGINAL AND NEW PARTS COMPARISON LISTS.**	
1. Improve performance	**Note:**
2. Change of material or dimension	Change parts based on Suffix Code.
3. To meet approved specification	
4. Standardization	**Remarks:**
5. Addition	***c:** To share the parts with other models
6. Deletion	
7. Correction	
8. Other	

Interchangeability Code		
The following items (V-Z) indicate the Interchangeability. See the "Notes**" column for each part in **ORIGINAL AND NEW PARTS COMPARISON LISTS.**		
V	Original → Early (before change) New → Late (after change)	Original or new parts may be used in early or late production sets. Use original parts until exhausted, then stock new parts.
W	Original → Early (before change) New → Late (after change)	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.
X	Original → Early (before change) New → Late (after change)	New parts only may be used in early or late production sets. Stock new parts.
Y	Original → Early (before change) New → Late (after change)	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.
Z	Other	

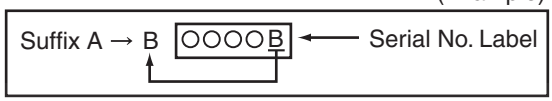
Note:

Alphabets in the "Remarks" column in the following lists correspond to the alphabets in the "Remarks" in REFERENCE CHART.

2.2. ORIGINAL AND NEW PARTS COMPARISON LISTS

Serial No.Label tells you the suffix code as follows.

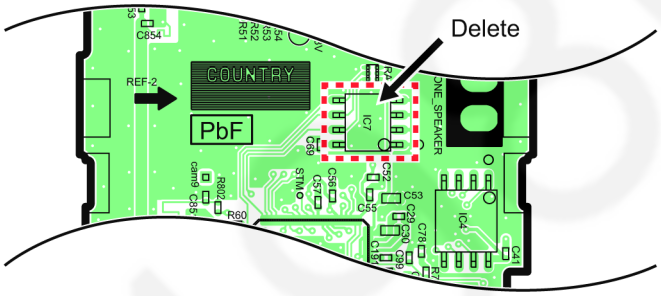
(Example)



Ref. No.	Part No.		Part Name & Description	Pcs/ Set	Remarks	Notes		Time of Change (Suffix)
	Original (Old)	**New**						
Main P.C.Board Parts (Handset)								
IC7	PNWIGCA20EXR	----------	IC (EEPROM)	0	*c	6	V	*1
IC4	C3FBLY000162	**PNWIACA20EXR**	IC	1	*c	8	V	*1
RA5	EXB28V332JX	----------	RESISTOR ARRAY	0	*c	6	V	*1
C69	ECUE1A104KBQ	----------	CAPACITOR, 0.1µF	0	*c	6	V	*1
F1	K5H252Y00002	**ERJ3GEY0R00**	RESISTOR, 0Ω	1	*c	8	V	*1

Note:

***1**: Please refer to "**1 ORIGINAL SERVICE MANUAL INFORMATION**".



Note:

The shape of IC is different in the old one and the new one.

3 CHANGES

3.1. Things to Do after Replacing IC or X'tal

3.1.1. Handset

[Changed from original section "11.6.1.2. Handset"]

First, operate the PC setting according to **The Setting Method of JIG**.

Then download the appropriate data according to the following procedures.

Items		How to download/Required adjustment
FLASH(IC4) [for Suffix B or Later]	Adjusted parameter data is stored in memory. (country version batch file, default batch file,ect)	1) Please be sure to execute the following steps if you have replaced the FLASH IC(IC4). 1. Update BBIC. Refer How to update the BBIC. 2. Detach the JIG cable, then disconnect the battery. 3. Insert battery. 4. Connect the JIG cable again, and execute the command "getchk", then confirm the checksum value is correct. • If the downloading failes, start again from step 1. 5. Check DECT ID written on Plastic bag of FLASH (IC4). 6. Execute the command "idw xx xx xx xx xx". xx xx xx xx xx: use DECT ID in Step 5. 7. Execute the command "epw 00 01 01 00". 8. Default bath file: Execute the command "default.bat" 9. Common batch file: Execute the command "TGCA20EUEX_DEF_RevXXX_YYY.bat"(*2). 10. Country version batch file: Execute the command "TGCA20EUEX_WW_RevXXX_YYY.bat"(*2). 11. Confirm DECT ID written in the label pated plastic bag of FLASH rom. 12. Write ID(PFPI): Write DECT ID. • Execute the command "IDWRITE". Refer to **11.4.3. Commands**. 2) Clock adjustment. 3) Battery low confirmation as below.

Note:

(*2) WW: country code, XXX_YYY: revision number

"XXX_YYY" vary depending on the country version. You can find them in the batch file, PNZZ- mentioned in **The Setting Method of JIG**.

4 ADDITION

4.1. VES (Virtual EEPROM Storage) LAYOUT (Handset)

[Added into original section "8.3. VES (Virtual EEPROM Storage) LAYOUT (Handset)"]

8.3. VES (Virtual EEPROM Storage) LAYOUT (Handset)

8.3.1. Scope

The purpose of this section is to describe the layout of the VES (Virtual EEPROM Storage) area in FLASH (IC4) for the Handset. The VES area contains hardware, software, and user specific parameters. Some parameters are set during production of the handset, some are set by the user when configuring the handset, and some during normal use of the phone.

8.3.2. Introduction

The handset uses a 128k bit VES area in FLASH (IC4) for storing volatile parameters. All parameters are set up before the handset the factory. Some of these are vital for the operation of the hardware so a set of default parameters is programmed before the actual hardware fine-tuning can be initiated. This document lists all default settings with a short description.
This document lists all default parameters with a short description.

Initial Type	Description
F	The data initialized by only F command
0	The data initialized by F and 0 command
1	The data initialized by F, 0 and 1 command
2	The data initialized by F, 0, 1 and 2 command
3	The data initialized by all command (F, 0, 1, 2, 3)

Country Setting	Description
x	Default - no specific country setting, so revert to default value.

8.3.3. VES area contents

MMI Setting:

Address	Initial Type	Name	Description	Default value	Country Setting
04 B0	3	EEP_Language	**Selected Language for LCD** GERMAN:0 ENGLISH:1 SPANISH:2 NORWEGIAN:3 FRENCH:4 ITALIAN:5 DENISH:6 DUTCH:7 SWEDISH:8 FINNISH:9 GREEK:10 TURKISH:11 HUNGARIAN:12 PORTUGUESE:13 RUSSIAN:14 POLISH:15 SLOVAKIAN:16 CZECH:17 CROATIAN:18 CATALAN:19 UKRINIAN:20 SPANISHMEX:21 SLOVENIAN:22 ESTNIAN:23 LITHUANIAN:24 LATVIAN:25 ROMANIAN:26 BULGARIAN:27 MACEDONIAN:29 ALBANIAN:30 PORTUGUESEMEX:31 ENGLISH(USA):32 HEBREW:33 ARABIC:34 PERSIA:35 HANTAI:36 HANTAI(HK):37 RUSSIAN(BX):38 BELARUS:39 KAZAKHSTAN:40 UZBEKISTAN:41 TAJIKISTAN:42 TURKMENISTAN:43 AZERBAIJAN:44 ARMENIA:45 MOLDOV:46 CANADAENGLISH:48 USSPANISH:49 USFRENCH:50 PORTUGUESE:51 ENGLISH(AZ):52	0x01	0x07 (for BL,NL) 0x01 (for CX,BX,UE,ML,HK,TW) 0x04 (for TU) 0x0A (for GR) 0x00 (for SL)

MMI1 Setting:

Address	Initial Type	Name	Description	Default value	Country Setting
00 12	F	EEP_LcdContrast	**LCD contrast**	0x29	x

4.2. How to update the BBIC.

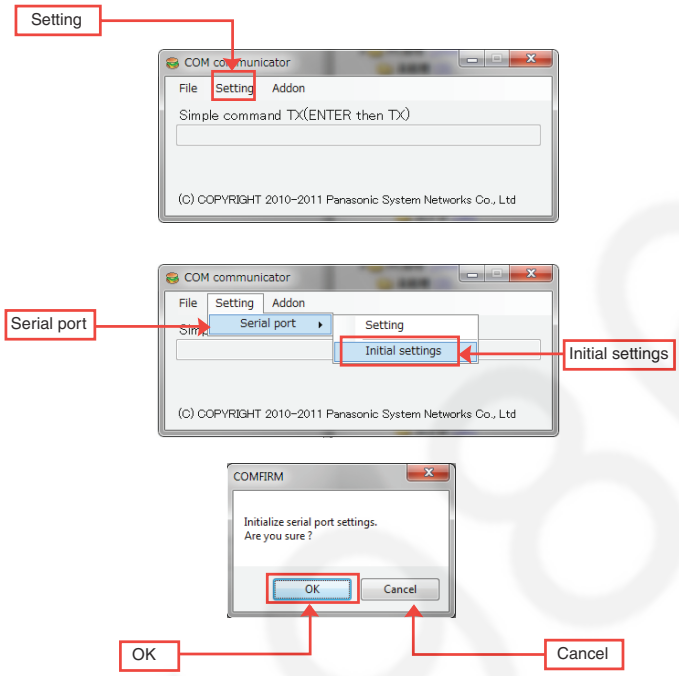
[Added into original section "11.6.1.2.1. How to update the BBIC."]

11.6.1.2.1. How to update the BBIC.

• Execute COM communicator.exe

1. Initialize COM port.(Only once at first.)

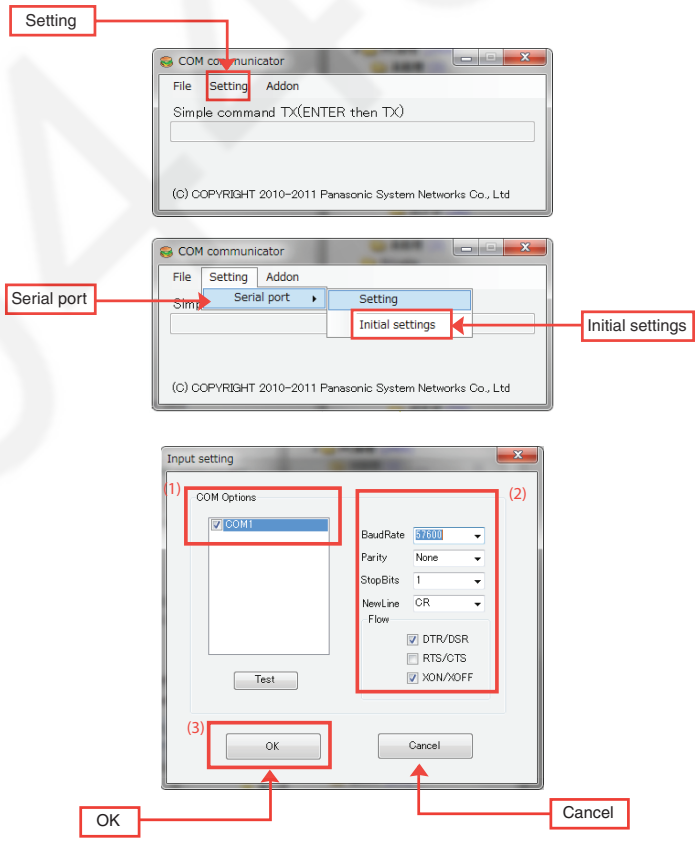
Select “Setting” → “Serial port” → “Initial settings” → “OK”.



2.Select serial port COM number.

Select “Setting” → “Serial port” → “Initial settings” → “OK”.

Fill up the “COM Option” → “OK”.

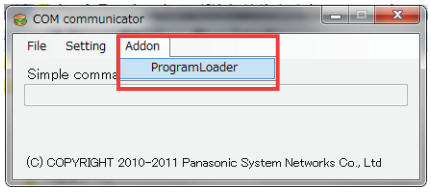


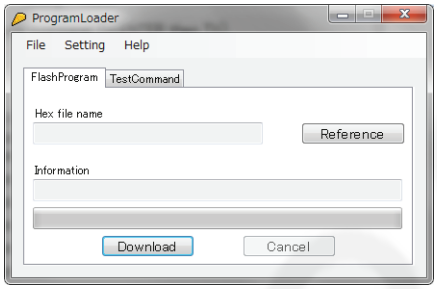
Note:

Once download is successful for a PC, this step is unnecessary next time to the PC.

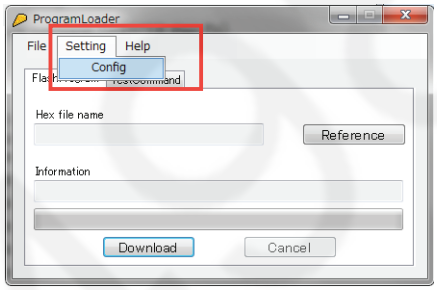
• Execute COM communicator.exe again <<Write program>>

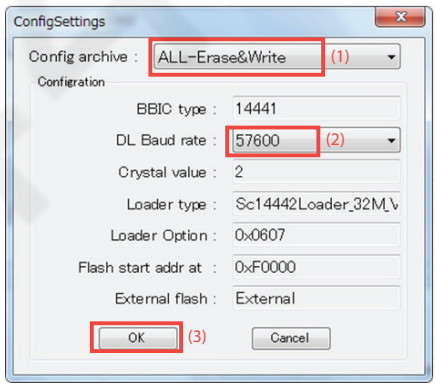
1. Select “Addon” → “ProgramLoader”.





2. Select "Setting" → "Config".
   Fill up the “ConfigSettings”.

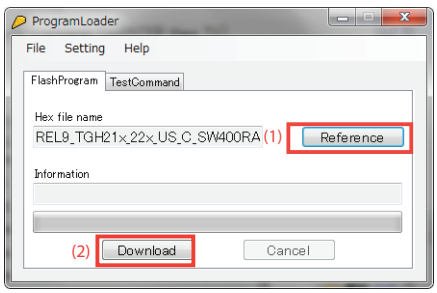




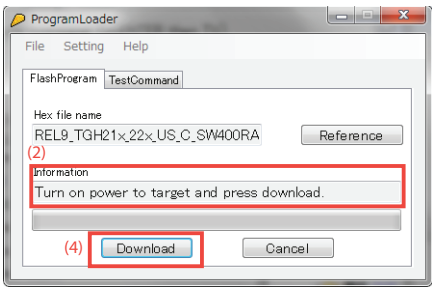
Note:

(2) Select Baud Rate as 57600. If write error happens, select slower Baud Rate (example: 19200).

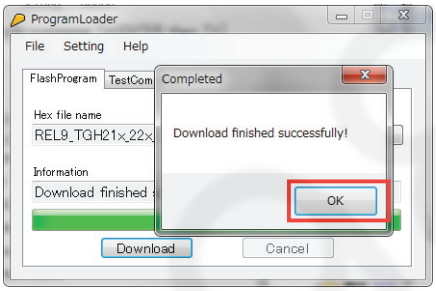
3. Select download file.



4. Start download.
   (1). Connect Unit and 3wire jig.
   (2). Confirm "Turn on power to target and press download." display.
   (3). Power off the unit, then power on.
   (4). Press "Download" button again.



5. Finish download.
   Completed dialog means "Download finished successfully!." It takes more than 20 minutes to download (It depends on baud rate). If error message is displayed, proceed from step 3 again.



6. Continuous download.
   Write next unit's software with proceeding from step 3 to Step 5.

NM