iCOM®

Icom Inc.

PROGRAMMING MANUAL

CLONING SOFTWARE
CS-F30G

Icom Inc.

FOREWORD

This manual explains in detail how to program each of the functions in the IC-F30GT/GS, IC-F31GT/GS, IC-F40GT/GS and IC-F41GT/GS VHF AND UHF TRANSCEIVERS with the CS-F30G CLONING SOFTWARE. The CS-F30G can be set up to meet any number of requirements of your customers, such as system conditions, channels, frequencies, tones, etc.

TABLE OF CONTENTS

■ EQUIPMENT REQUIRED

To use the program, the following hardware and software is required:
- IBM PC/AT or PS/2 compatible computer with an RS-232C serial port
- Microsoft® Windows® 95 or Windows® 98
- Intel Pentium 100 MHz processor or faster
- At least 32 MB RAM
- At least 800×600 pixel display
- OPC-966 CLONING CABLE

■ SOFTWARE INSTALLATION

NOTE: Depending on your Windows® system files, the PC may require rebooting. In this case, repeat the installation from the beginning.

◆ Installation

① Boot up Windows®. (Quit all applications when Windows® is running.)

② Insert the CS-F30G disk into the appropriate CD-ROM drive.

③ Select 'Run' from the [Start] menu.

④ Type the setup program name with full path name, then press the [Enter] key.
   e.g.; D:\csf30g\disk1\setup [Enter]

⑤ Follow the prompts.

⑥ Enter the Product ID number in the following manner.
   - ID number : 002379-(6-digit serial number)
   - e.g. If the serial number on the CD is "000001," enter "002379-000001" as the ID number.

⑦ Program group 'CS-F30G' appears in the 'Programs' folder of the start menu.

■ CONNECTION

Connect each item as in the following diagram.

CAUTION: Do not connect an antenna to the transceiver during cloning operation. Received signals may cause cloning errors.

to an RS-232C port

Personal computer

DB9 Female /DB25 Male cable

OPC-966
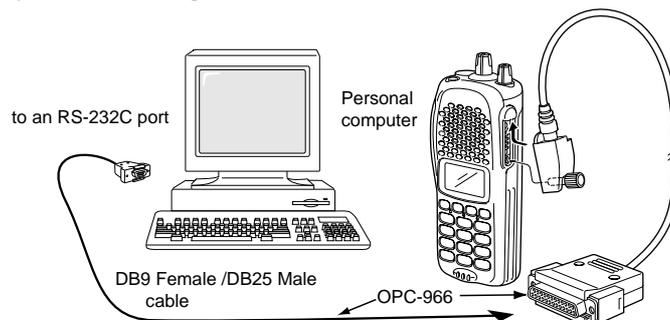
All cloning operations are performed from the computer— the operation required on the transceiver side is; Turn the transceiver's power ON.

2 SCREEN DESCRIPTION

2-1 MAIN SCREEN DESCRIPTION
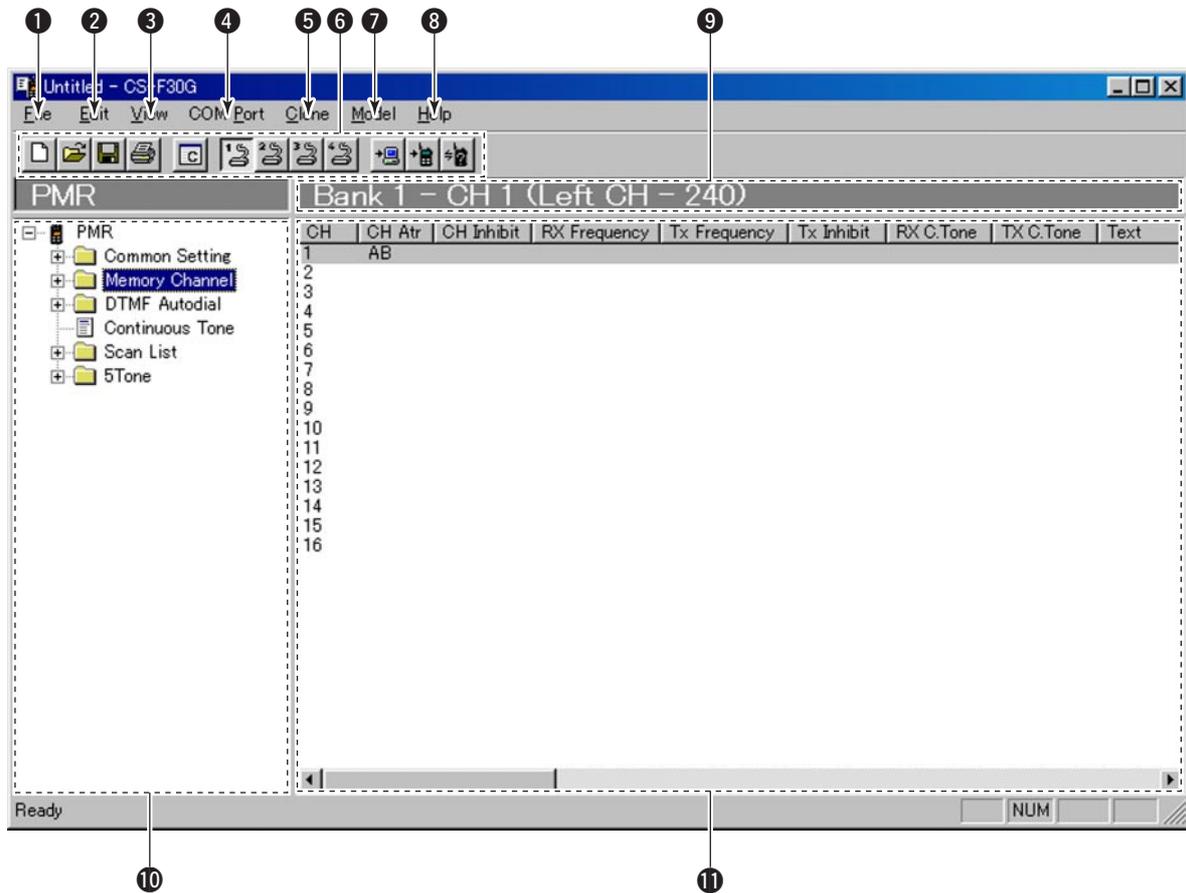
❶ FILE MENU— [File]

Used for making new files, opening available saved files, saving memory channel contents or quitting the program, etc. Up to 4 recently used files are indicated in the sub menu for simple, quick file selection.

❷ EDIT MENU— [Edit]
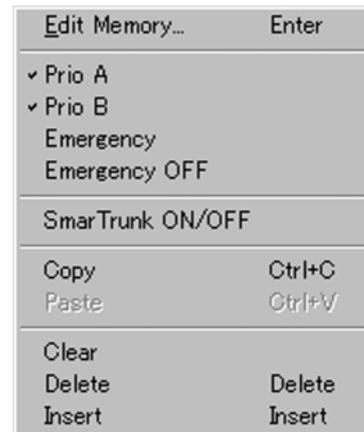
Edit the selected memory contents.
• Select the proper model type, item and channel number before editing items. (see ❼, ❿ and ⓫; p. 3)
*The above sub-menu appears when 'Memory Channel' is selected. When another item (e.g. Scan List) is selected, a different sub-menu is appears in some cases.

Go to ❼ MODEL MENU— [Model]
Go to ❿ TREE VIEW SCREEN
Go to ⓫ MEMORY CHANNEL SCREEN

❸ VIEW MENU— [View]

Common Setting...

✓ Toolbar
✓ Status Bar

• The independent Common Setting Screen is selectable. (pgs. 6–22)
• Turn the tool bar or status bar ON/OFF.

❹ COM PORT MENU— [COM Port]

✓ COM1
COM2
COM3
COM4

✓ Normal Speed
High Speed
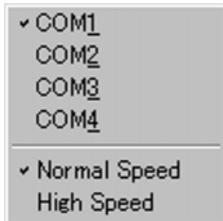
Push to display the COM port setting sub menu.
• Set the COM port (RS-232C port) number properly.
• Select data transfer rate from Normal Speed and High Speed.

▨**NOTE: '**Check the following' dialog box as follows, appears when the RS-232C serial port is not set correctly.

CS-F30G ✕

❌ Check the following:

– The RS-232C port settings.
– Cloning cable connections.
– Appropriate cloning software for the transceiver is being used.
– The revision number of the transceiver.

OK

❺ CLONE MENU— [Clone]

Read <– TR
Write –> TR
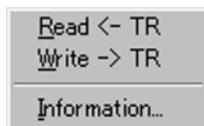
Information...

Starts to read the programmed data from the connected transceiver, programs setup data to the connected transceiver, or displays detailed information screen to check Model type, CPU's revision number, clone comment and optional unit installation condition of the connected transceiver.
The clone comment is programmed in **Clone Comment— (1), (2)** in *3-2 COMMON 1* (p. 17).

Go to Clone Comment— (1), (2)

❻ TOOL BAR

Short cut keys appear in the tool bar when the tool bar is checked ("✔" mark appears) in the [View] menu as above.

Short cut keys for New (Ctrl+N), Open (Ctrl+O), Save (Ctrl+S) as in [File], Common Setting as in [View], COM1–4 selection as in [COM Port] and Read <– TR, Write –> TR, Information as in [Clone] menu, are available.

❼ MODEL MENU— [Model]

LMR (2Tone)
✓ PMR (5Tone/DTMF)
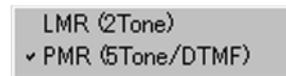
Select the model type from LMR (2-tone) or PMR (5-tone/DTMF).
-"✔" mark appears for the selected model.
The Tree View Screen content will be changed when switched between LMR and PMR. See page 4 for details.

▨**IMPORTANT! :** The model type must be selected at first, otherwise the edited contents will be lost.
Select **PMR (5Tone/DTMF)** to enable the DTMF decode operation.

Go to 2-2 TREE VIEW SCREEN DESCRIPTION

❽ HELP MENU— [Help]

Contents   F1

About CS-F30G...
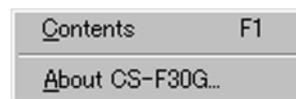
Push to display help contents and cloning software revision information.

❾ EDIT CHANNEL INDICATION
Displays the prompt item name and channel number to be edited.

❿ TREE VIEW SCREEN (p. 4)
Double click the folder icon or click the " + " beside the folder which you want to edit. Then double click the desired item name to display the item on the 'Memory channel screen'.

Go to 2-2 TREE VIEW SCREEN DESCRIPTION

⓫ MEMORY CHANNEL SCREEN
Displays the Memory Channel or item information to be edited. Double click, right click on the desired channel number, or press [Enter] key after desired channel selection, to open the independent 'Edit' screen.

2 SCREEN DESCRIPTIONS

2-2 TREE VIEW SCREEN DESCRIPTION
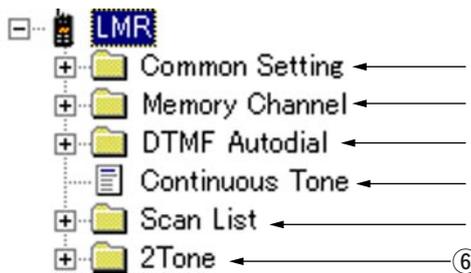
• LMR Tree View   • PMR Tree View

① **Common setting** (pgs. 6–22)

Sets programmable key, function display assign, and several commonly used timers, etc., are programmable in 6 independent sheets as follow.

    Key & Display Assign (pgs. 6–14)
    Set Mode (p. 15)
    Common 1 (pgs. 16–17)
    Common 2 (pgs. 18–19)
    Expert (pgs. 20–21)
    Character Editor (p. 22)

By double clicking an item in the Common Setting folder, the desired sheet in the independent Common Setting Screen appears.

Go to 3-1 KEY & DISPLAY ASSIGN
Go to 3-2 SET MODE
Go to 3-3 COMMON 1
Go to 3-4 COMMON 2
Go to 3-5 EXPERT
Go to 3-6 CHARACTER EDITOR

② **Memory Channel**
(LMR: pgs. 23–28/PMR: pgs. 29–39)
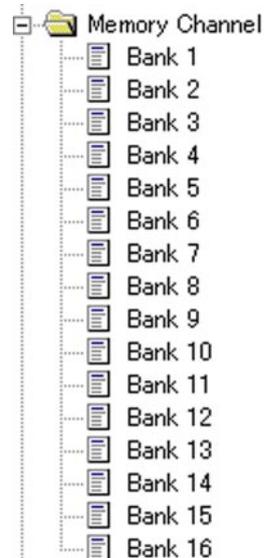
Sets channel attribute, operating frequency, CTCSS encoder/decoder frequency, transmit output power, voice scrambling code, etc.

By double clicking a bank type item in the Bank Setting folder, the desired bank condition is indicated below the Memory Channel folder and channel number for editing in a bank in the Memory Channel Screen.

Go to 4 MEMORY CHANNEL— LMR
Go to 5 MEMORY CHANNEL— PMR

4

③ **DTMF Autodial** (pgs. 40–41)

Program DTMF code for the DTMF auto dialling function and timers for each digit, 1st digit, [✱] and [#] code.

By double clicking the DTMF Autodial item, the DTMF channels for editing appear in the Memory Channel Screen, and the independent DTMF Setting Screen appears when the DTMF Setting item is double clicked.

Go to 6 DTMF AUTODIAL

④ **Continuous Tone** (p. 42)

Set continuous tone frequency. The programmed continuous tone is used for encoder and/or decoder.

By double clicking the Continuous Tone item, the continuous tone channels for editing appear in the Memory Channel Screen.

Go to 7 CONTINUOUS TONE

⑤ **Scan List** (pgs. 43–44)
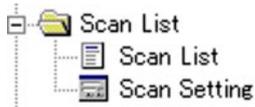
Sets scan mode, text for each scan group, power save function scan stop/resume timers, etc.

By double clicking the Scan List item, the scan group channels for editing appear in the Memory Channel Screen, and the independent Scan Setting Screen appears when the Scan Setting item is double clicked.

Go to 8 SCAN LIST

⑥ **2Tone** (LMR only; pgs. 45–48)

Sets RX/TX code, text, beep, bell, stun, group call, ANS functions, etc.

By double clicking the RX Code Channel item, the RX code channels for editing appear in the Memory Channel Screen, and the independent TX Code Channel or 2Tone Setting Screen appears when the TX Code Channel or 2Tone Setting item is double clicked, respectively.

Go to 9 2TONE

⑦ **5Tone** (PMR only; pgs. 49–58

Sets RX/TX code, text, 5-tone format, beep, bell, stun, group call, answer back functions, etc.

By double clicking the RX/TX Code Channel, Format or User Tone item, the RX/TX code channels for editing, 5-tone format or user tone appear in the Memory Channel Screen, and the independent 5Tone Setting Screen appears when the 5Tone Setting item is double clicked.

Go to 10 5TONE

3 COMMON SETTING

3-1 KEY & DISPLAY ASSIGN
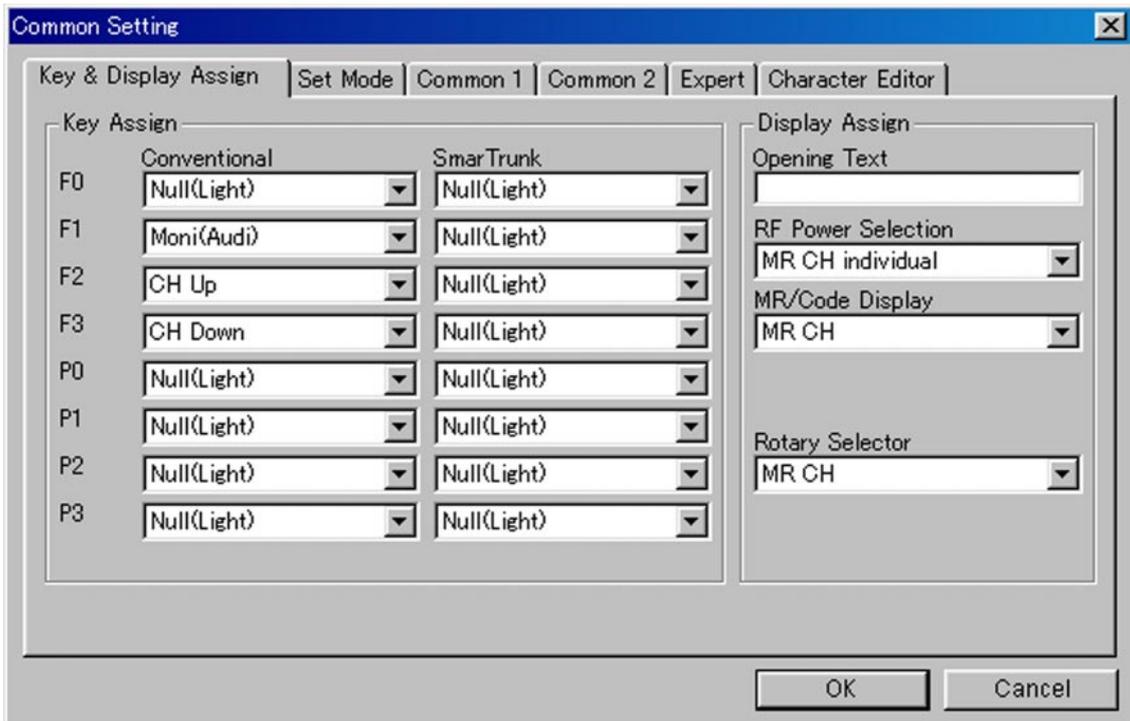
■ **Key Assign— F0, F1, F2, F3, P0, P1, P2, P3**
Assign a function for each programmable switch and operating mode (Conventional and SmarTrunk). Assignable functions and actions are as follows.

The following functions can be assigned for the Conventional columns operation.

Null(Light):
　　　　No function is assigned. However, lights LCD backlight for 5 sec. when 'Auto' is selected in **Backlight** in *3-2 SET MODE* (p. 15).

<div style="background:#9cc;">**Go to Backlight**</div>

CH Up, CH Down:
　　　　Changes the memory channel up or down.

Bank 　: Push this switch then [CH Up] or [CH Down] to change the memory channel bank up or down.

Scan A Start/Stop, Scan B Start/Stop:
　When the power ON scan function is turned OFF;
　　　　Push to start and cancel scanning operation. In case of transmission during scan, cancels scanning when in Scan A, and pauses scanning, then resumes scanning after passing the time period specified in **Auto Reset** in *4/5 MEMORY CHANNEL* (LMR; p. 27/PMR; p. 37) when Scan B is selected.

　　　　The scanning list (scanning channel group) can be selected via [CH Up] or [CH Down] switches, after entering the scan list selection mode by pushing this switch for 1 sec.

When the power ON scan function is turned ON;
　　　　Push to pause scanning when in Scan A, and push to cancel scanning when Scan B is selected. In case of transmission during scan, pauses scanning, then resumes scanning after passing the time period specified in the **Auto Reset** in *4/5 MEMORY CHANNEL* (LMR; p. 27/PMR; p. 37) when in Scan A. Cancels scanning when Scan B is selected.

　　　　The scanning list (scanning channel group) can be selected via [CH Up] or [CH Down] switches, after entering the scan list selection mode by pushing this switch for 1 sec.

The power ON scan function is specified in **Power ON Scan** in *8-2 SCAN SETTING* (p. 44).

NOTE: Scan A and Scan B cannot be assigned at the same time because the transceiver cannot have two different scans.

<div style="background:#9cc;">**Go to Auto Reset— LMR**</div>
<div style="background:#9cc;">**Go to Auto Reset— PMR**</div>
<div style="background:#9cc;">**Go to PWR ON Scan**</div>

Scan Add/Del(Tag):
　　　　Push to add or delete the channel to/from the selected scanning list

3-1 KEY & DISPLAY ASSIGN— continued
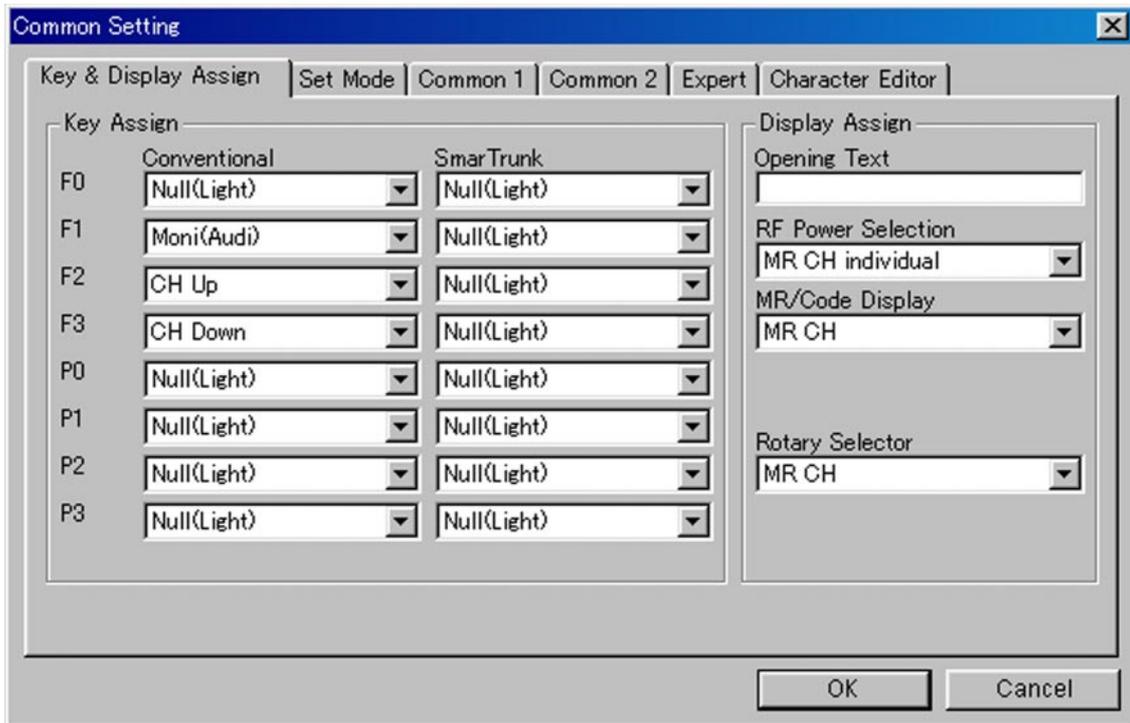
Prio A, Prio B:
Selects the priority channel A or B programmed in **CH Atr** in *4/5 MEMORY CHANNEL* respectively (LMR; p. 23/PMR: p. 29) by pushing this switch.

Prio A (Rewrite):
Selects the priority channel A programmed in **CH Atr** in *4/5 MEMORY CHANNEL* (LMR; p. 23/PMR: p. 29) by pushing this switch. Also the operating channel is re-assigned for priority channel A by pushing this switch for 1 sec.

> **Go to CH Atr— LMR**

> **Go to CH Atr— PMR**

MR-CH 1–4:
Immediately selects memory channel 1–4 in the operating bank, respectively.

Moni/Moni(Audi):
For LMR model use— Moni
Push to mute and release the CTCSS (DTCS) or 2-tone squelch mute. Open any squelches/deactivate any mutes while pushing this switch.

For PMR model use— Moni (Audi)
Activates a monitor function specified in **Switch Action— Moni** in *5 MEMORY CHANNEL— PMR* (p. 32).

> **Go to Switch Action— Moni**

Lock : Switches the keyboard lock function ON and OFF.

High/Low: Switches the transmit output power level from the independent settings of each channel.
It is impossible to select "High" when "Low" is selected for the initial setting in **RF PWR** in *4/5 MEMORY CHANNEL* (LMR; p. 26/PMR; p. 36) as well as when "MR CH Individual" is selected in the **RF Power Selection** (p. 13) in this sheet.

> **Go to RF PWR— LMR**

> **Go to RF PWR— PMR**

> **Go to RF Power Selection**

C. Tone CH Ent:
Selects the continuous tone channel via [CH Up] or [CH Down] switches to change the tone frequency/code setting after pushing this switch for temporary operation.
The [CH Up] or [CH Down] switches are assigned in this screen (p. 6) and the continuous tone channel is programmed in *7 CONTINUOUS TONE* (p. 42).

> **Go to CH Up, CH Down**

> **Go to 7 CONTINUOUS TONE**

3 COMMON SETTING

3-1 KEY & DISPLAY ASSIGN— continued
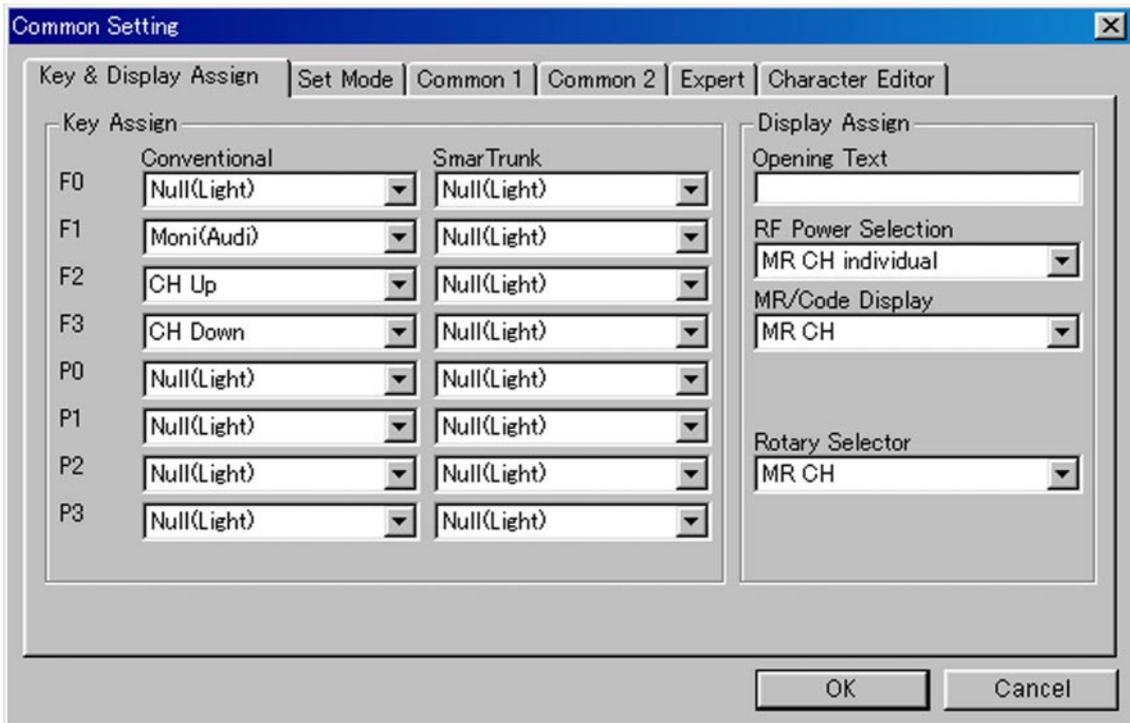
Talk Around:

Switches the talk around function ON and OFF.

This function allows temporary simplex operation on the duplex/repeater channel.

Wide/Narrow:

Switches both transmission and reception IF passband width for temporary wide or narrow channel spacing operation.

After channel or bank selection, the passband width returns to the original selection. The original passband width is programmed in **Wide/Narrow** in *4/5 MEMORY CHANNEL* (LMR: p. 26/PMR: p. 35).

> **Go to Wide/Narrow— LMR**

> **Go to Wide/Narrow— PMR**

DTMF Autodial:

Push to enter the DTMF autodial mode and then select the stored DTMF code via [CH Up] or [CH Down] switches.

Transmits the selected DTMF code by pushing this switch for 1 sec.

The DTMF code for auto dialling is programmed in *6-1 DTMF AUTODIAL* (p. 40), and the [CH Up] or [CH Down] switches are assigned in this screen (p. 6).

> **Go to 6-1 DTMF Autodial**

> **Go to CH Up, CH Down**

Re-Dial : Transmits the last-transmitted DTMF code again. Acts for both manual and autodial.

Re-Dial will be cleared when the transceiver is turned OFF once.

Call : Transmits the 2-tone (LMR) or 5-tone or DTMF code (PMR) in the selected channel.

2-tone is programmed in **2Tone** in *4 MEMORY CHANNEL— LMR* (p. 25).

5-tone is programmed in **5Tone Signaling— RPT, STN, ID** in *5 MEMORY CHANNEL— PMR* (p. 34).

For PMR model use only

In case this switch is pushed, and the 5-tone setting is an "OFF" channel, it transmits the previously transmitted 5-tone code, when the automatic clear channel searching function is activated, which is specified in the **Auto CH Call** in *8-2 SCAN SETTING* (p. 44).

> **Go to 2Tone**

> **Go to 5Tone Signaling— RPT, STN, ID**

> **Go to Auto CH Call**

3-1 KEY & DISPLAY ASSIGN— continued
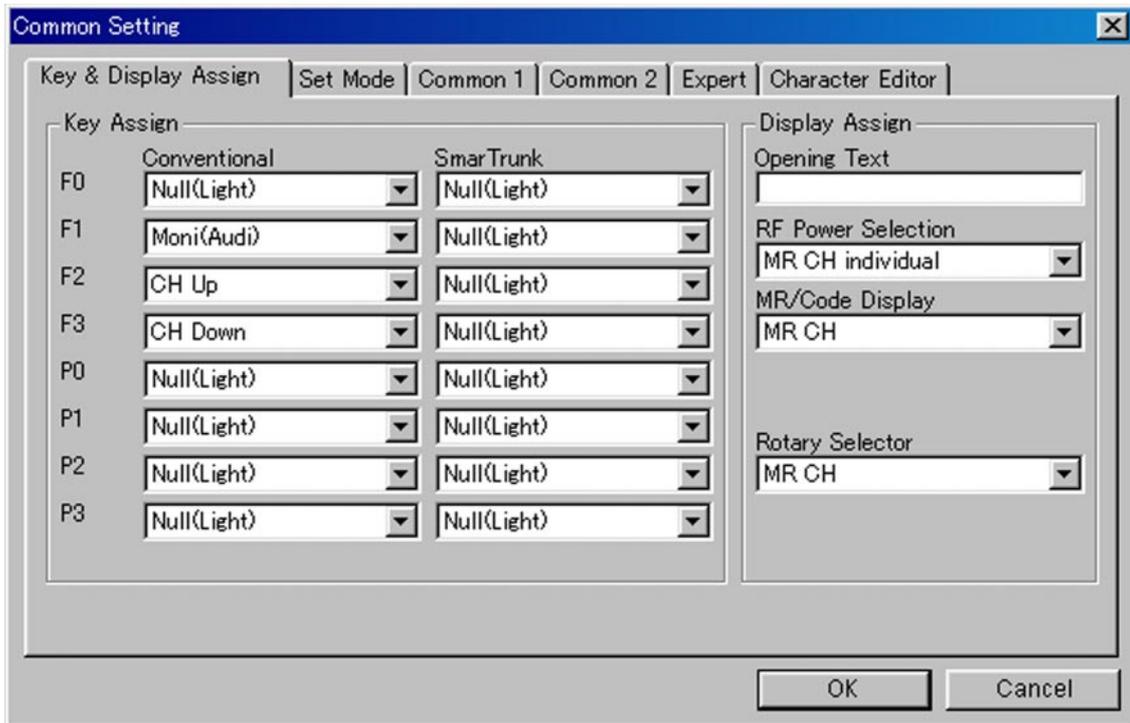
Call A (Code 30), Call B (Code 29)— *PMR only* :
Transmits the 5-tone code programmed in the channel 30 (Call A) or 29 (Call B) in **10-2 TX CODE** (p. 52) as the station code, when [Call A] or [Call B] switch is pushed respectively.

Go to 10-2 TX Code

Emergency Single, Emergency Repeat :
Immediately selects emergency channel and automatically sends a repeated emergency signal at specified time intervals, or an emergency signal once, by pushing this switch for the specified time period, programmed in **Emergency— SW ON Timer** in *3-5 EXPERT* (p. 20). Also, cancels the emergency call by pushing this switch for the specified time period, programmed in **Emergency— SW OFF Timer** in (p. 20), before an emergency signal is transmitted.
The emergency channel is specified in **CH Atr** in *4/5 MEMORY CHANNEL* (LMR; p. 23/PMR; p. 29) and the time intervals are specified in the **Emergency— Start/Repeat** in *3-5 EXPERT* (p. 21).

Go to Emergency— SW ON Timer

Go to Emergency— SW OFF Timer

Go to CH Atr— LMR

Go to CH Atr— PMR

Go to Emergency— Start/Repeat

TX Code— *PMR only* :
Selects a TX code channel, instead of the specified 5-tone code channel programmed in **5Tone signaling— STN** in *5 MEMORY CHANNEL— PMR* (p. 34), via [CH Up] or [CH Down] switches after pushing this switch for temporary operation.
The station code can also be manually entered as follows.

To enter 5-tone code—

IC-F30GT/F40GT, IC-F31GT/F41GT:
Enter the station code using [0]–[9] and [✱] switches after pushing this switch for 1 sec.

IC-F30GS/F40GS, IC-F31GS/F41GS:
Select the code number via [CH Up] or [CH Down] switches after pushing this switch for 1 sec., then push this switch to set the next code number. After all digits are selected, push this switch for 1 sec. to complete the number.
Selectable 5-tone channels, acceptable input digits and updates can be specified in **Sel** (p. 53), **Input Digit** (p. 52) and **Update** (p. 53) in *10-2 TX CODE CHANNEL*.
The [CH Up] and [CH Down] switches are assigned in this screen (p. 6).

Go to 5Tone signaling— STN

Go to Sel

Go to Input Digit

Go to Update

Go to CH Up, CH Down

3 COMMON SETTING

3-1 KEY & DISPLAY ASSIGN— continued
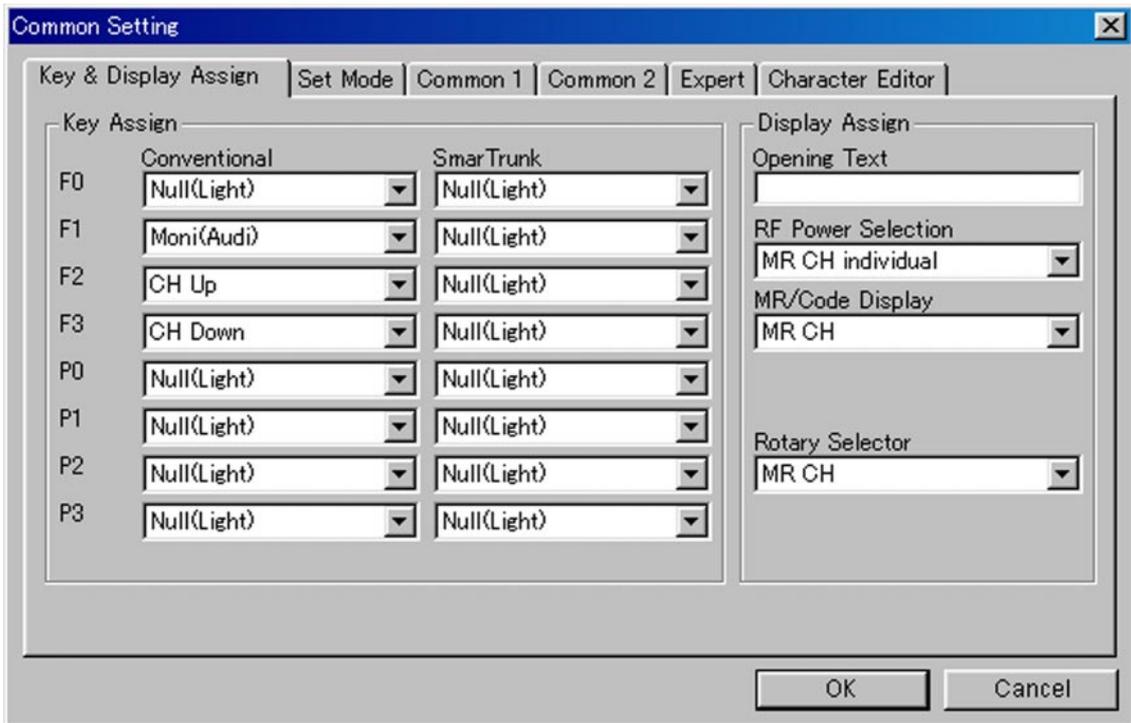
TX Code CH Up, TX Code CH Down— *PMR only* :

Selects a TX code channel, instead of the specified 5-tone code channel programmed in **5Tone signaling— STN** in *5 MEMORY CHANNEL— PMR* (p. 34) for temporary operation.

Selectable 5-tone channels are specified in **Sel** in *10-2 TX CODE CHANNEL* (p. 53).

Go to 5Tone signaling— STN

Go to Sel

ID-MR Select— *PMR only*:

For entering into the received ID code history indication mode. Up to 5 codes can be memorized, and searches the history with [CH Up] or [CH Down] switches.

All the history can be cleared by pushing this switch for 1sec.

The selected/displayed 5-tone code can be transmitted as STN (station/group) code when [Call] switch is pushed.

[CH Up], [CH Down] or [Call] switches are assigned in this screen (pgs. 6, 8).

Go to CH Up, CH Down

Go to Call

Scrambler:

Switches the voice scrambler function ON and OFF when an optional voice scrambler unit, UT-109 or UT-110, is installed.

When "Inhibit" is selected in **Scrambler— OFF, ON, Inhibit** in *4/5 MEMORY CHANNEL* (LMR; p. 26/PMR; p. 39), the scrambler function cannot be switched on with this switch operation.

Go to Scrambler— OFF, ON, Inhibit— LMR

Go to Scrambler— OFF, ON, Inhibit— PMR

Compander:

Switches the compander function ON and OFF.

The compander function reduces noise components from the transmitting audio to provide clear communication.

3-1 KEY & DISPLAY ASSIGN— continued

```
Common Setting                                                    ×

 Key & Display Assign │ Set Mode │ Common 1 │ Common 2 │ Expert │ Character Editor │

 ┌─Key Assign──────────────────────────────┐  ┌─Display Assign─────────────────┐
 │         Conventional        SmarTrunk    │  │ Opening Text                   │
 │  F0   [Null(Light)    ▼]  [Null(Light)  ▼]│  │ [                           ]  │
 │  F1   [Moni(Audi)     ▼]  [Null(Light)  ▼]│  │ RF Power Selection             │
 │  F2   [CH Up          ▼]  [Null(Light)  ▼]│  │ [MR CH individual           ▼] │
 │  F3   [CH Down        ▼]  [Null(Light)  ▼]│  │ MR/Code Display                │
 │  P0   [Null(Light)    ▼]  [Null(Light)  ▼]│  │ [MR CH                      ▼] │
 │  P1   [Null(Light)    ▼]  [Null(Light)  ▼]│  │                                │
 │  P2   [Null(Light)    ▼]  [Null(Light)  ▼]│  │ Rotary Selector                │
 │  P3   [Null(Light)    ▼]  [Null(Light)  ▼]│  │ [MR CH                      ▼] │
 └──────────────────────────────────────────┘  └────────────────────────────────┘

                                           [   OK   ]   [ Cancel ]
```

User Set Mode:

>Entering into the *User Set Mode* by pushing this switch for 1 sec.

>The *User Set Mode* is used for programming infrequently changed values or conditions of functions without PC programming.

>Push this switch momentarily to select the function, and push [CH Up] or [CH Down] to change the setting, after entering into the *User Set Mode*.

>Programmable functions are selected in **3-2 SET MODE** (p. 15).

Go to 3-2 SET MODE

OPT11 Out/H, OPT12 Out/H, OPT13 Out/H:

>Outputs "High" level signal from the OPT1–3 ports in the optional unit connector (MAIN unit, J1; pins 9–11), respectively.

OPT11 Out/L, OPT12 Out/L, OPT13 Out/L:

>Outputs "Low" level signal from the OPT1–3 ports in the optional unit connector (MAIN unit, J1; pins 9–11), respectively.

OPT11 Momentary/H, OPT12 Momentary/H, OPT13 Momentary/H:

>Outputs "High" level pulse signal from the OPT1–3 ports in the optional unit connector (MAIN unit, J1; pins 9–11), respectively.

OPT11 Momentary/L, OPT12 Momentary/L, OPT13 Momentary/L:

>Outputs "Low" level pulse signal from the OPT1–3 ports in the optional unit connector (MAIN unit, J1; pins 9–11), respectively.

OPT21 Out/H, OPT22 Out/H, OPT23 Out/H:

>Outputs "High" level signal from the OPT1–3 ports in the optional unit connector (MAIN unit, J2; pins 9–11), respectively.

OPT21 Out/L, OPT22 Out/L, OPT23 Out/L:

>Outputs "Low" level signal from the OPT1–3 ports in the optional unit connector (MAIN unit, J2; pins 9–11), respectively.

OPT21 Momentary/H, OPT22 Momentary/H, OPT23 Momentary/H:

>Outputs "High" level pulse signal from the OPT1–3 ports in the optional unit connector (MAIN unit, J2; pins 9–11), respectively.

OPT21 Momentary/L, OPT22 Momentary/L, OPT23 Momentary/L:

>Outputs "Low" level pulse signal from the OPT1–3 ports in the optional unit connector (MAIN unit, J2; pins 9–11), respectively.

Sp. Func 1, Sp. Func 2:

>Reserved for future functions.

3 COMMON SETTING

3-1 KEY & DISPLAY ASSIGN— continued
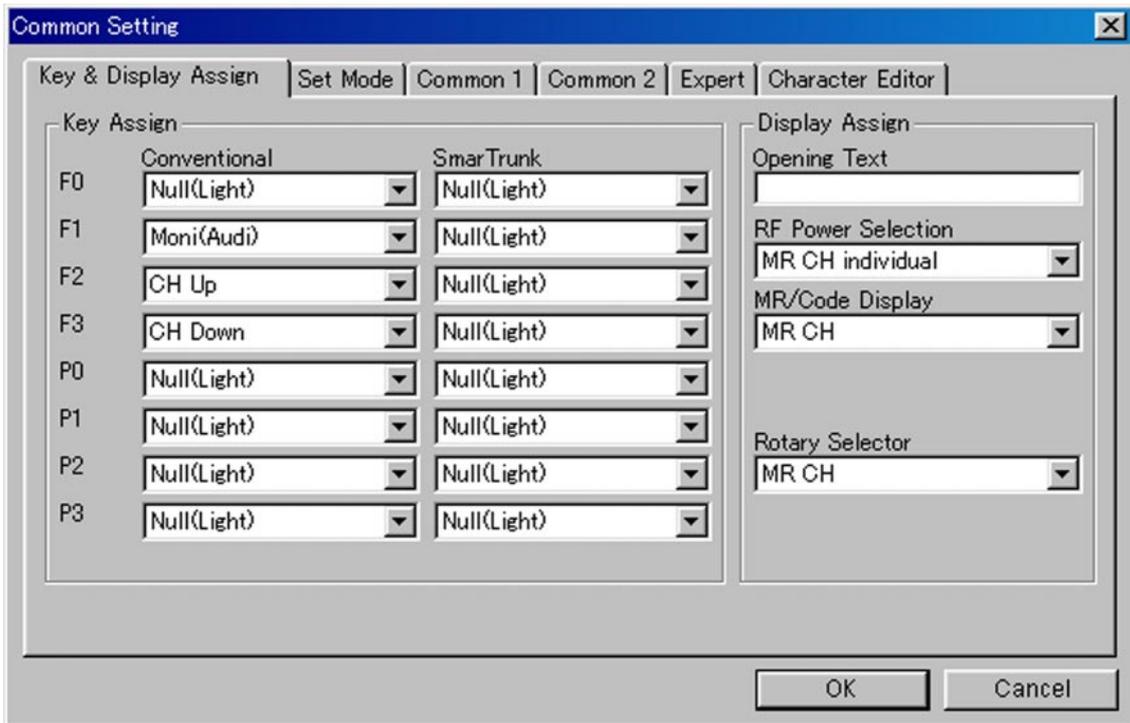
The following functions can be assigned for the SmarTrunk columns operation.

Null(Light):

No function is assigned. However, lights LCD backlight for 5 sec. when 'Auto' is selected in **Backlight** in *3-2 SET MODE* (p. 15).

> **Go to Backlight**

Bank : Push this switch then [CH Up] or [CH Down] to change the memory channel bank up or down.

Lock : Switches the keyboard lock function ON and OFF.

High/Low : Switches the transmit output power level from the independent settings of each channel.
It is impossible to select "High" when "Low" is selected for the initial setting in **RF PWR** in *4/5 MEMORY CHANNEL* (LMR; p. 26/PMR; p. 36), and also when "MR CH Individual" is selected in the **RF Power Selection** (p. 13) in this sheet.

> **Go to RF PWR— LMR**

> **Go to RF PWR— PMR**

> **Go to RF Power Selection**

Trunking Group SW:
Selects trunking group.

Turbo SpeeDial A, B, C, D:

Immediately calls commonly used telephone or subscriber numbers during SmarTrunk II operation. See pages 00–00 for details

Programming memory Speed Dial

① Push and hold [✶] until a high-pitch beep is heard.

② Enter the memory location (0–9), the telephone or subscriber number, then [1], [✶] (or [3], [✶] if for another system subscriber).

• A high-pitch beep informs of successful programming.

• Memories [A]–[D] are used for the Turbo SpeeDial.

Note: This function is available for the IC-F30GT/F40GT and IC-F31GT/F41GT only.

✶, # : Acts as [✶] or [#] keys on 10-key pad. Convenient during SmarTrunk II operation with non-keypad type transceivers (IC-F30GS/F40GS, IC-F31GS/F41GS).
Assign these functions to the keys in which [CH Up] or [CH Down] is assigned in conventional operation.

Scrambler:

Switches the voice scrambler function ON and OFF when an optional voice scrambler unit, UT-109 or UT-110, is installed.

When "Inhibit" is selected in **Scrambler— OFF, ON, Inhibit** in *4/5 MEMORY CHANNEL* (LMR; p. 26/PMR; p. 39), the scrambler function cannot be switched on with this switch operation.

> **Go to Scrambler— OFF, ON, Inhibit— LMR**

> **Go to Scrambler— OFF, ON, Inhibit— PMR**

3-1 KEY & DISPLAY ASSIGN— continued
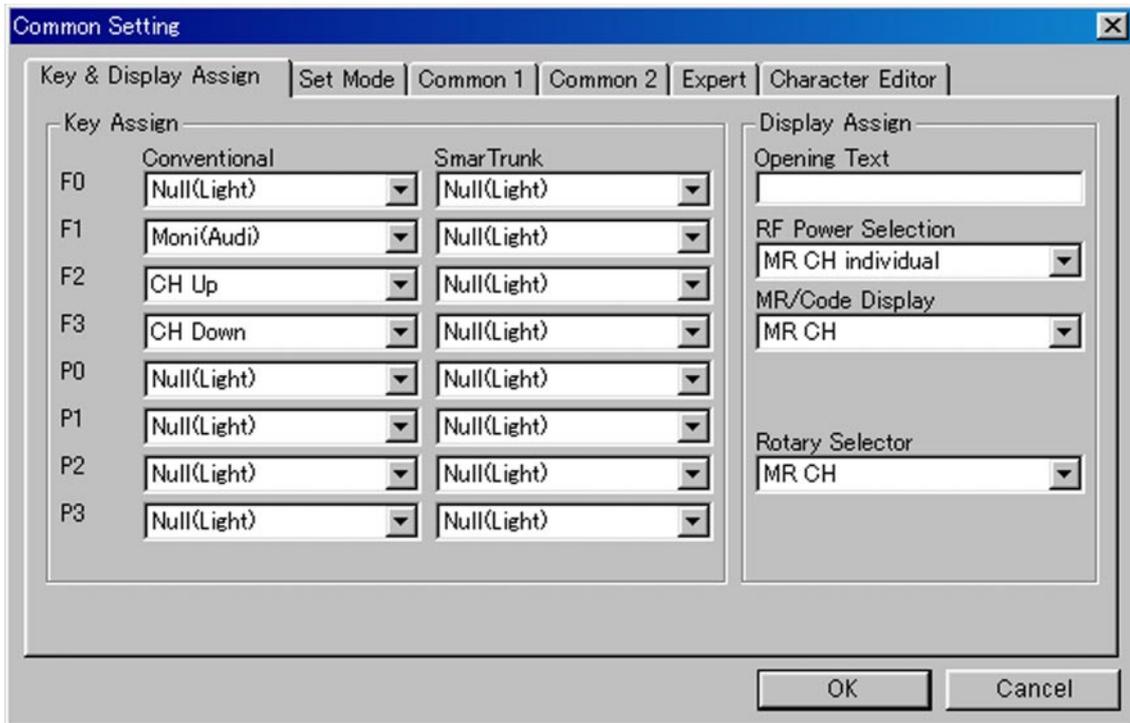
Compander:

> Switches the compander function ON and OFF.
>
> The compander function reduces noise components from the transmitting audio to provide clear communication.

Sp. Func 1, Sp. Func 2:

> Reserved for future functions.

■ **Display Assign**

• **Opening Text**

Enter up to a 12-character transceiver opening message.

The usable characters are A–Z, a–z, 0–9, $, ', (,), –, /, <, =, >, @, [, \,], _, {, |, } ~ and user original characters.

When entering user original characters, enter '%' and the desired thumbnail number A to P (capital letter only).

Programming example:

When entering original character's thumbnail number C, enter as '%C.'

User original characters are programmed in *3-6 CHARACTER EDITOR* (p. 22).

> **Go to 3-6 CHARACTER EDITOR**

• **RF Power Selection**

Selects the transmit output power setting condition from MR CH individual and Override.

Selected transmit output power level with the [High/Low] switch is kept for all channels regardless of the individual power setting programmed in **RF PWR** in *4/5 MEMORY CHANNEL* (LMR; p. 26/PMR; p. 36) when 'Override' is selected. However, outputs selected transmit output power level temporarily with the [High/Low] switch when 'MR CH Individual' is selected.

The [High/Low] switch is assigned in this screen (p. 7).

> **Go to RF PWR— LMR**
>
> **Go to RF PWR— PMR**
>
> **Go to High/Low**

3-1 KEY & DISPLAY ASSIGN— continued
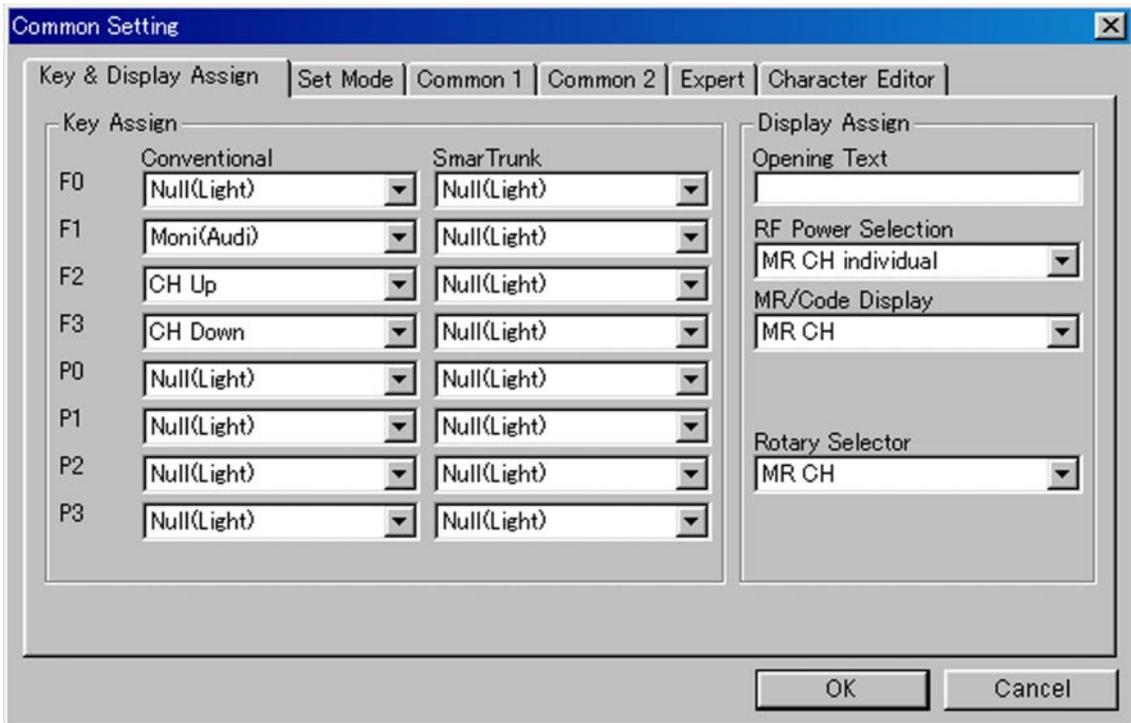
• MR/Code Display— *PMR only*
Selects the display conditions from MR CH and MR CH+TX CODE CH.
 MR CH: The selected operating channel number or programmed text only is displayed.
  MR CH+TX Code CH:
        The selected operating channel and transmit 5-tone code channel number or programmed text are displayed.

Text for each operating channel and transmit 5-tone code channel are programmed in **Frequency— Text** in *5 MEMORY CHANNEL* (p. 30) and in **Text** in *10-2 TX CODE CHANNEL* (p. 52), respectively.

When no text is programmed, the selected channel number is displayed instead of the text.

Go to Frequency— Text

Go to Text

• Rotary Selector
Selects the [Rotary Selector] action from MR CH, MR CH (Home) and Bank.
  MR CH   : Selects memory channel.
  MR CH (Home) : Selects memory channel and starts scanning automatically when channel 1 is selected.
  Bank   : Selects memory bank.

NOTE: DO NOT select "MR CH" or "MR CH (Home)" when [CH Up]/[CH Down] is assigned, or "Bank" when [Bank] is assigned to either F0–F3 and P0–P3 switches. A cloning error may occur.

3-2 SET MODE
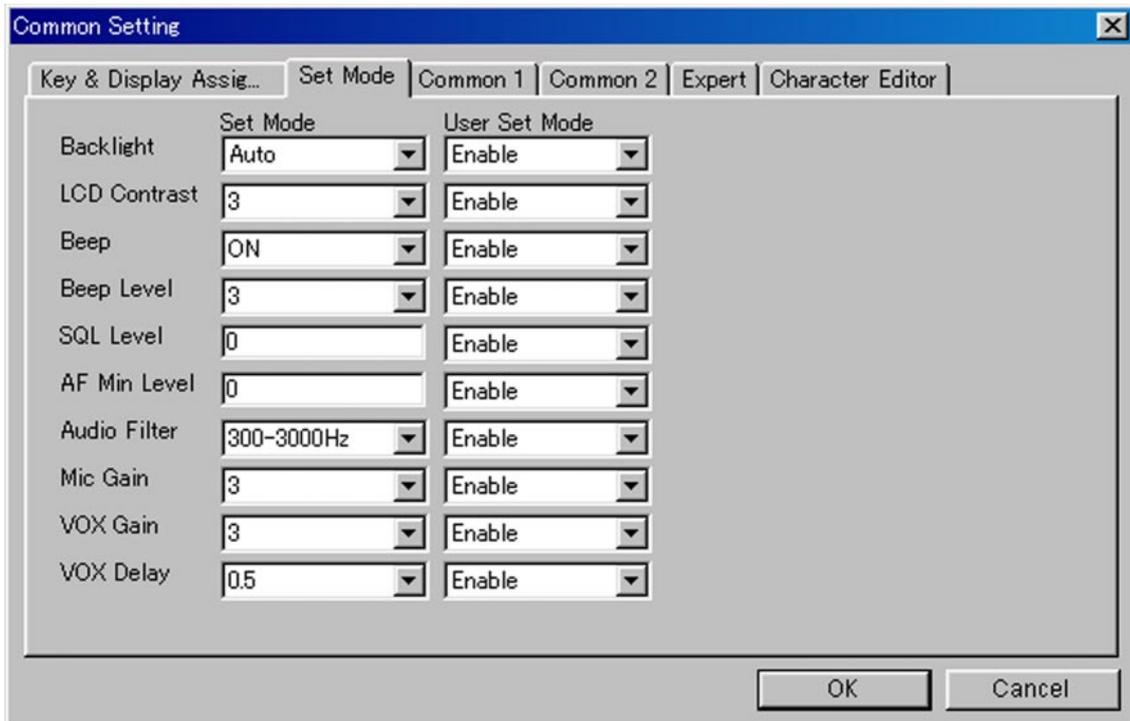
Set the values or conditions of the following functions in the Set Mode columns, and select the conditions of User Set Mode from Enable and Inhibit.

These functions are for programming infrequently changed values or conditions without PC programming.

The function which "Inhibit" is selected, does not appear and therefore cannot be set in the User Set Mode.

• Backlight
Selects the LCD backlight lighting conditions from ON, OFF and Auto.
  ON   : Lights continuously while the transceiver is powered ON.
  OFF : Does not light with any operation.
  Auto : Lights for 5 sec. when any switch except [PTT] is pushed.

• LCD Contrast
Selects the LCD contrast level from 1–5.

• Beep
Selects the key-touch beep output capability. (Not for lockout timer, TOT, etc.)

• Beep Level
Selects the key-touch beep fixed output level from 1–5, or minimum output level from 1(Linked)–5(Linked).

When either minimum output level is selected, the beep output level is adjustable with [VOL] control.

• SQL Level
Enter a value within a 0–255 range for noise squelch threshold level adjustment.

• AF Min Level
Enter a value within a 0–255 range for minimum audio output level.

• Audio Filter
Selects the audio filter from 300–3000 Hz, 0–3000 Hz, 300–3400 Hz and 0–3400 Hz.

• Mic Gain
Selects the internal microphone gain from 1–5.

• VOX Gain
Selects the VOX gain from OFF and 1–5.

• VOX Delay
Selects the VOX delay from 0.5, 1.0, 1.5, 2.0, 2.5 and 3.0.

3-3 COMMON 1
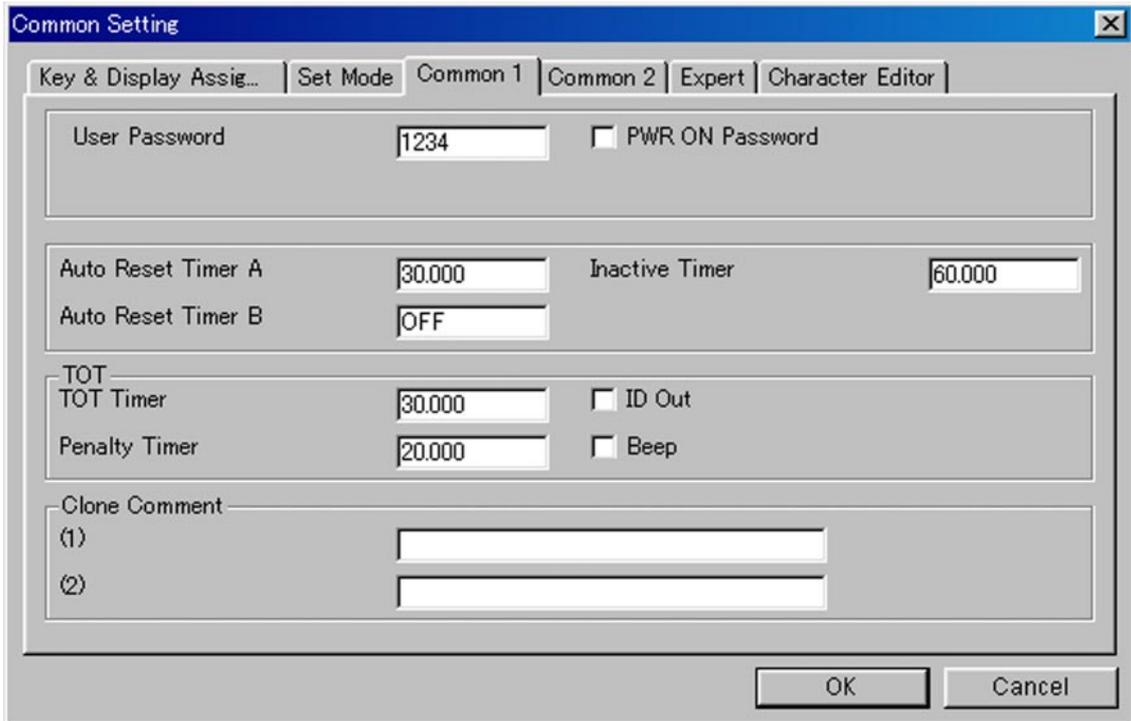
• **User Password**

Enters up to a 4-digit user password for the power ON password function or for cancelling the "Stun" condition.

The power ON password function is specified in **PWR ON Password** as follows, and the "Stun" function is specified in **Stun** in *9-1/10-1 RX CODE CHANNEL* (2-tone; p. 46, 5-tone; p. 51).

> **Go to Stun— 2-tone**

> **Go to Stun— 5-tone**

• **PWR ON Password**

Click the check-box to activate the power ON password function.

It is necessary to enter the 4-digit password programmed in the **User Password** as above when checked. However, the password must be entered after receiving a "Stun" signal regardless of this setting.

The Stun condition is programmed in **Stun** in *9-1/10-1 RX CODE CHANNEL* (2-tone; p. 46, 5-tone; p. 51).

> **Go to Stun— 2-tone**

> **Go to Stun— 5-tone**

• **Auto Reset Timer A, Auto Reset Timer B**

Enter the time period for returning the mute condition to the initial setting, specified in **CH Mute** in *5 MEMORY CH* (PMR only; p. 38), and/or restarting the scan from a disappearing signal, or when key operation is finished, if the power ON scan function is turned ON.

To turn OFF the Auto Reset function, enter "0 (zero)" to one of these settings. ("OFF" will be indicated)

The programmed settings are selected in **Auto Reset** in *4/5 MEMORY CHANNEL* (LMR; p. 27/PMR; p. 37).

The power ON scan function is programmed in **Power ON Scan** in *8-2 SCAN SETTING* (p. 44).

> **Go to CH Mute**

> **Go to Auto Reset— LMR**

> **Go to Auto Reset— PMR**

> **Go to Power ON Scan**

• **Inactive Timer**—*PMR only*

The entered time period acts as the **Auto Reset Timer A**, **Auto Reset Timer B** as above.

This setting is used with the **Auto Rest Timer A** or **Auto Rest Timer B**, by selecting 'Timer A Inact' or 'Timer B Inact' in **Auto Reset** in *5 MEMORY CHANNEL* (p. 37).

> **Go to Auto Reset— PMR**

3-3 COMMON 1— continued

• **TOT— TOT Timer**

Enters the continuously transmittable time period (Time-out timer). Maximum time period is specified for 30, 60 or 180 sec. etc., according to country and local regulations.

The time-out timer function can be turned ON or OFF for each operating channel in **TOT** in *4/5MEMORY CHANNEL* (LMR; p. 28/PMR; p. 39).

DO NOT set to only a few seconds, as transmitting will be impossible.

Go to TOT— LMR

Go to TOT— PMR

• **TOT— ID Out (DTMF)/ID Out**

Click the check-box to activate the automatic ID transmission capability.

-The "✔" mark appears in the check-box when checked.

The function automatically transmits an ID code when the time-out timer activates, and just before transmission is inhibited.

The ID code is programmed in *No. Log/ID* in **6-1 DTMF AUTODIAL** (p. 40) for LMR, and is specified in **5Tone Signaling— ID** in *5 MEMORY CHANNEL* (p. 34) for PMR operation.

Go to 6-1 DTMF AUTODIAL

Go to 5Tone Signaling— ID

• **TOT— Penalty Timer**

Enters the un-transmittable time period for penalty when the continuously transmitted time has exceeded the specified time period programmed in **TOT— TOT Timer** as at left.

The TOT penalty time is the transmit inhibit period when the time-out timer is activated.

• **TOT— Beep**

Click the check-box to activate the warning beep output capability for TOT function.

-The "✔" mark appears in the check-box when checked.

Emits warning beep 10 sec. before compulsory shut down of the transmission.

The transceiver emits warning beeps 10 sec. before, and the time-out timer activates when this setting is turned ON.

• **Clone Comment— (1), (2)**

Enters up to a 16-character text for quick identification of a transceiver's content.

The programmed comment of the connected transceiver can be checked without reading all other existing programmed data. See ❺ **CLONE MENU— [Clone]** in *2-1 MAIN SCREEN DESCRIPTION* (p. 3).

Go to ❼ CLONE MENU— [Clone]

3-4 COMMON 2
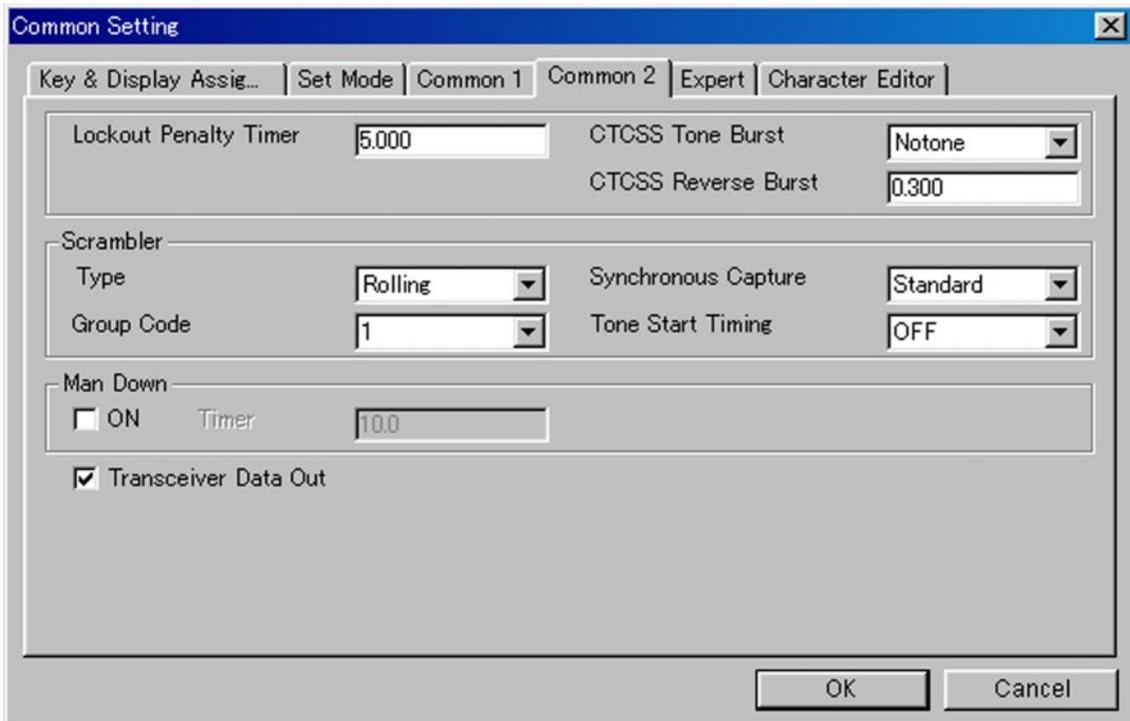
• Lockout Penalty Timer

Enters the un-transmittable time period for penalty when transmitted on a busy channel. The un-transmittable condition is kept for the programmed time period even if the channel is cleared.

The lockout penalty time is the transmit inhibit period when the user attempts to transmit while in a lockout condition. The transmission is inhibited for the lockout penalty time even when the lockout condition is cleared.

• CTCSS Tone Burst

Selects the tone burst system from Notone and Phase.

  Notone: Unmodulates CTCSS encoder signal for the specified time period programmed in **CTCSS Reverse Burst** in this screen, as at right. (This system is currently used.)

  Phase : Reverses the phase of CTCSS encoder signal for the specified time period programmed in **CTCSS Reverse Burst** in this screen, as at right.

• CTCSS Reverse Burst

Enters the time period for transmission delay with [PTT] switch operation and CTCSS signal.

The transceiver still transmits for the programmed period without the CTCSS encoder, or with phase reversed CTCSS encoder signal, after [PTT] is released. This removes the transceiver's 'Squelch delay'.

• CTCSS Reverse Burst
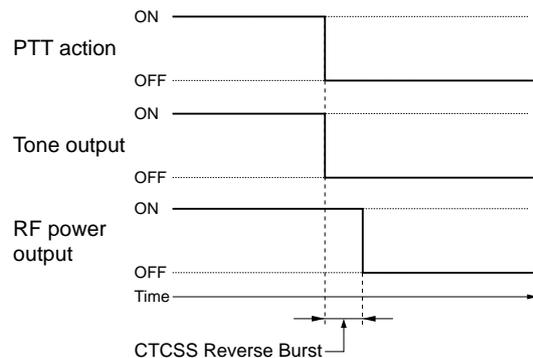
3-4 COMMON 2— Continued

• Scrambler— Type

Selects the scrambler type from Rolling and Non-Rolling.

Selects 'Rolling' when the optional voice scrambler unit, UT-110 (#02), is installed, selects 'Non-Rolling' when UT-109 is installed.

UT-110 and UT-109 are not compatible due to different scrambling systems. However, UT-110 can be used instead of UT-109 by selecting 'Non-Rolling' type in this item

The **Scrambler— Group Code** as follows, must be programmed when UT-110 is used with the Rolling setting.

• Scrambler— Synchronous Capture

Selects the synchronous capture mode from Standard and Continuous.

It is recommended that 'Standard' is selected for simplex/normal operation, 'Continuous' for repeater operation.

• Scrambler— Group Code

Selects the scrambler group code from 1, 2, 3 and 4 when the optional voice scrambler unit, UT-110 (#02), is installed and 'Rolling' is selected in the **Scrambler— Type** as above.

Programming is not required when the optional voice scrambler unit, UT-109, is installed.

• Scrambler— Tone Start Timing

Selects the reference tone signal delay time from OFF, 0.3sec., 0.6 sec. and 1.1 sec.

The setting is used to synchronize voice scrambling timing when the other stations/transceivers are in power save mode.

• Man Down— ON, Timer

Click the check-box, ON, and enter time period in the Timer column (25.5 sec. max.) to activate the man down function when the optional UT-113 MAN DOWN UNIT is installed.

The transceiver selects emergency channel and transmits an emergency signal automatically after passing the programmed time period when the transceiver has been left in a horizontal position.

The emergency channel is programmed in **CH Atr** in *4/5 MEMORY CHANNEL* (LMR; p. 23/PMR; p. 29).

For the emergency signal—

LMR : DTMF code of Emergency, programmed in *6-1 DTMF AUTODIAL* (p. 40), is used.

PMR : Specified 5-tone/DTMF code selected in **5Tone Signaling— STN** in *5 MEMORY CHANNEL* (p. 34) of the emergency channel.

Go to CH Atr— LMR

Go to CH Atr— PMR

Go to 6-1 DTMF AUTODIAL

Go to 5Tone Signaling— STN

• Transceiver Data Out

Click the check-box to enable the transceiver's programmed data out capability for both using this software and cloning between transceivers.

-The "✔" mark appears in the check-box when checked.

The setting does not inhibit data writing, therefore over writing data is still possible even when not checked.

3-5 EXPERT
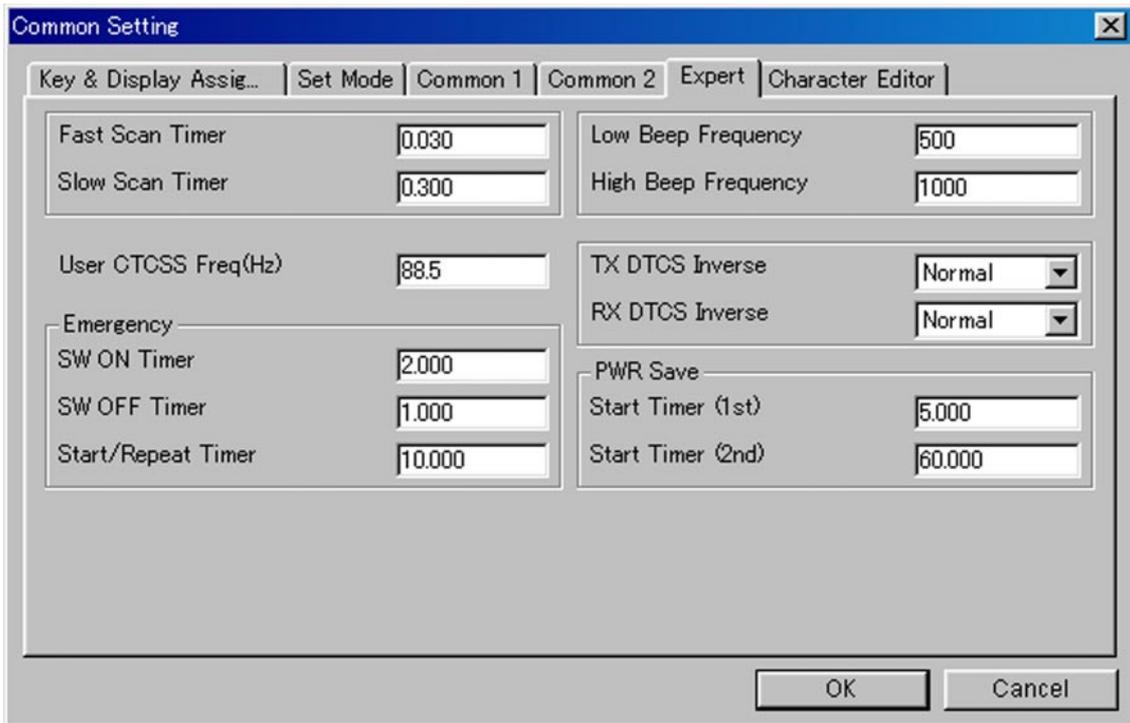
• Fast Scan Timer

Enters the time period for scanning of each channel without CTCSS/DTCS programming.

An appropriate time is set by default and scan may not stop when setting a value less than the default.

• Slow Scan Timer

Enters the time period for scanning of each channel with CTCSS/DTCS programming.

An appropriate time is set by default and scan may not stop when setting a value less than the default.

• User CTCSS Freq(Hz)

Programs additional customer/system own CTCSS frequency to the existing 51 CTCSS frequencies within 60.1 to 300.1 Hz range.

The programmed CTCSS frequency can be selected in **C.Tone— RX and TX** in *4/5 MEMORY CHANNEL* (LMR; p. 25/PMR; p. 31), and **RX, TX** in *7 CONTINU-OUS TONE* (p. 42) by selecting 'USER'.

Go to C.Tone— RX and TX— LMR

Go to C.Tone— RX and TX— PMR

Go to RX, TX

• Emergency— SW ON Timer

Enters time period for which [Emergency Repeat] or [Emergency Single] switch must be held to activate the emergency function.

Push and hold [Emergency Repeat] or [Emergency Single] switch for the programmed time period to make an emergency call.

[Emergency Repeat] or [Emergency Single] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 9).

Go to Emergency Repeat, Emergency Single

• Emergency— SW OFF Timer

Enters time period for which [Emergency Repeat] or [Emergency Single] switch must be held to cancel the emergency function.

Push and hold [Emergency Repeat] or [Emergency Single] switch for the programmed time period to cancel an emergency call before an emergency signal is transmitted.

However, once an emergency call is transmitted, the call cannot be cancelled regardless of this setting.

[Emergency Repeat] or [Emergency Single] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 9).

Go to Emergency Repeat, Emergency Single

3-5 EXPERT— continued
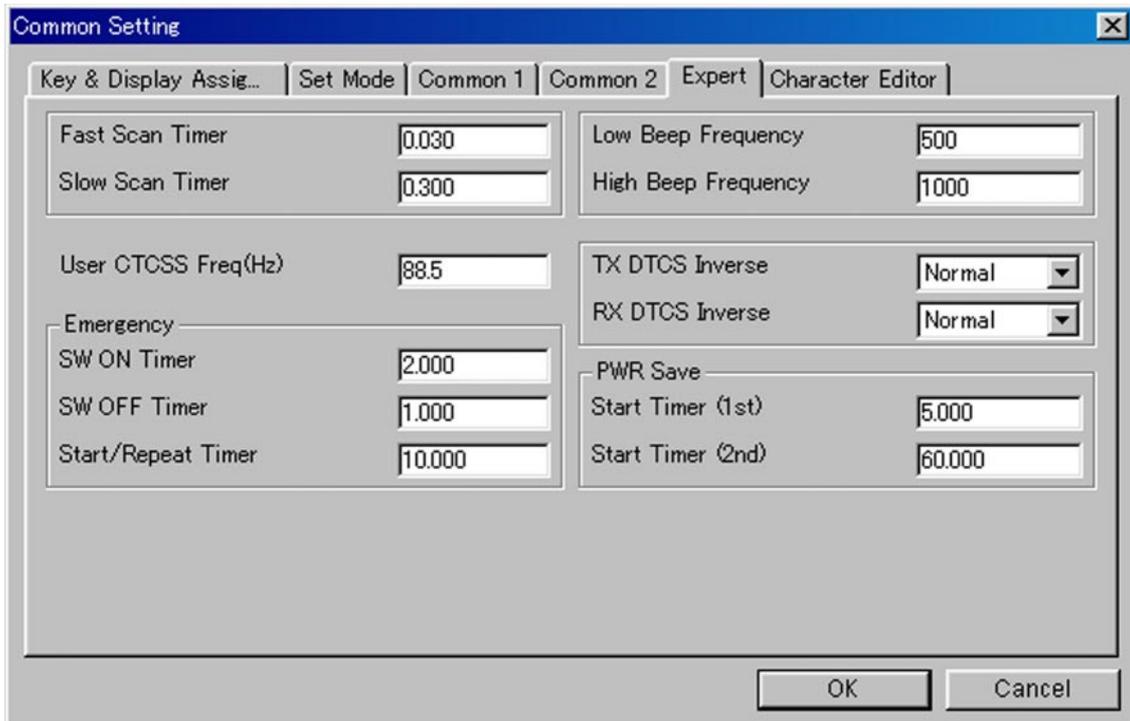
• **Emergency— Start/Repeat Timer**
Enter the time periods for the emergency call delay and interval.

The transceiver makes an emergency call after passing the programmed time period when the emergency function is activated.

The transceiver transmits an emergency signal repeatedly at this interval until an "Emergency Cancel" code is received when [Emergency Repeat] is used.

[Emergency Repeat] or [Emergency Single] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 9).

• **Low Beep Frequency, High Beep Frequency**
Enter the beep audio frequency for each Low (for error) and High (for regular) beep within 400 to 2998 Hz range, respectively.
The nearest available frequency is selected automatically.

• **TX DTCS Inverse**
Selects the transmit DTCS code polarity.

In order for the transceiver to communicate using a DTCS code, the polarity of the transmitting transceiver's transmit code must be the same as the polarity of the receiving transceiver's receive code.

• **RX DTCS Inverse**
Selects the receive DTCS code polarity.

In order for transceivers to communicate using DTCS codes, the polarity of the receiving transceiver's receive code must be the same as the polarity of the transmitting transceiver's transmit code.

• **PWR Save— Start Timer (1st), (2nd)**
Enter the time period for the power saver function start timers within 0–25.5 sec. for the 1st, and 1–255 sec. or OFF (enter 'OFF', when 'OFF' is selected) for the 2nd timer.

The 1st timer must be set smaller than the 2nd timer, due to the fact that the 2nd timer/power saver function activates after the 1st timer/power saver. Otherwise the 1st timer does not activate. The 2nd timer will be set to 'OFF' when the UT-110 voice scrambler unit is installed. The long timer setting will be invalid.

3-6 CHARACTER EDITOR
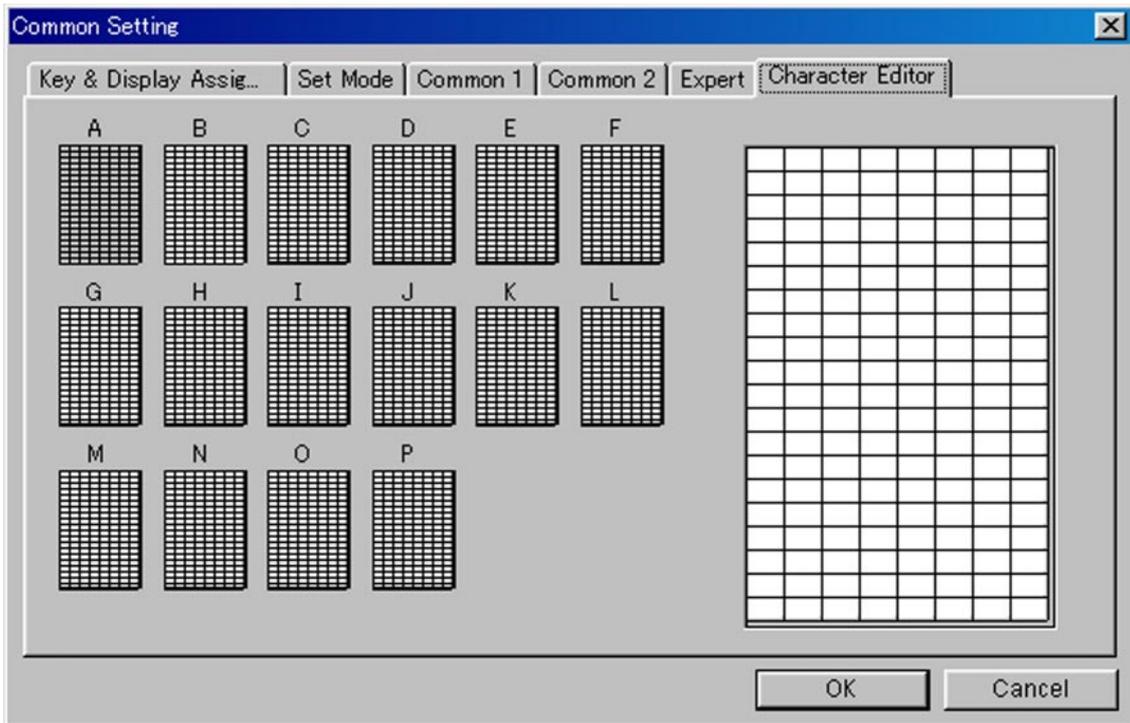
Up to 16 original characters or symbols can be edited/created in this sheet for a variety of information indication.

• Thumbnail A–P

Shows created original character or symbol.

The characters or symbols are displayed on the LCD when they are programmed in **Opening Text** in *3-1 KEY & DISPLAY ASSIGN* (p. 13), **Text** in *4/5 MEMORY CHANNEL* (LMR; p. 24/PMR; p. 30), *6-1 DTMF AUTODIAL* (p. 40), *8-1 SCAN LIST* (p. 43), *9-1/10-1 RX CODE CHANNEL* (2-tone; p. 45/5-tone; p. 49) or *10-2 TX CODE CHANNEL* (p. 52).

Go to Opening Text
Go to Text— LMR
Go to Text— PMR
Go to Text— 6-1 DTMF AUTODIAL
Go to Text— 8-1 SCAN LIST
Go to Text— 9-1 RX CODE CHANNEL
Go to Text— 10-1 RX CODE CHANNEL
Go to Text— 10-2 TX CODE CHANNEL

• Character Edit Map

Original character editing image map.

The edited characters are shown in the thumbnails A–P, respectively.

Character editing instructions are as follows.

① Select a character thumbnail from A–P to be edited with mouse operation.

② Click desired segment boxes/dots on the map with the mouse pointer.
   - Clicked segment boxes/dots become black.
   - To cancel, click unwanted black segment boxes/dots again.

③ Click [OK] button in this screen, or click on other character thumbnail if programming more characters.
   - Common Setting screen will be closed after [OK] button is clicked.

• CH Atr

Selects the channel attribution from Prio A, Prio B, Emergency, Emergency OFF and SmarTrunk ON/OFF.

Right click on the desired channel to open the sub-menu window as at right, then select the channel attribution.

A: Priority— "A" tagged channel becomes the priority channel A, simply recalled by pushing [Priority A] or [Priority A (Rewrite)] switch and also is automatically monitored during the priority scan. When [Priority A (Rewrite)] switch is assigned, priority channel A can be re-assigned by pushing [Priority A (Rewrite)] switch for 1 sec.

B: Priority— "B" tagged channel becomes the priority channel B, simply recalled by pushing [Priority B] switch.

E: Emergency— "E" tagged channel becomes an emergency channel, immediately recalled and sends an emergency signal by pushing [Emergency Single] or [Emergency Repeat] switch, or when the man down function is activated. Only 1 channel can be set.

Emergency OFF— Regular channel.

SmarTrunk ON/OFF— Specifies the selected bank for SmarTrunk operation.

SmarTrunk specified bank/s, the bank item in the Memory Channel folder, displayed in the Tree View Screen, changes from regular to SmarTrunk type as follows, for easy recognition.

 : Regular type   : SmarTrunk type

[Priority A], [Priority A (Rewrite)], [Priority B], [Emergency Single] and [Emergency Repeat] switches are assigned in *3-1 KEY & DISPLAY ASSIGN* (pgs. 7, 9).

The man down function is specified in **Man Down— ON, Timer** in *3-4 COMMON 2* (p. 19).

Go to ② Memory Channel

Go to Prio A, Prio B

Go to Prio A (Rewrite)

Go to Emergency Single, Emergency Repeat

Go to Man Down— ON, Timer

The channel attribution can only be set on the Memory Channel Screen as shown above. (Cannot be set in the Edit window.) However, the other items are programmable in the Edit window only.

The Edit window appears by pushing the [Enter] key, double clicking or selecting in the sub menu window via right click operation with the mouse on the desired channel.

• **Frequency— RX, TX**

Enter receive and transmit frequencies within the following frequency ranges in either 5, 6.25 or 7.5 kHz steps* for the RX and TX boxes, respectively.

IC-F30GT/GS : 136–174 MHz
IC-F40GT/GS* : 400–430, 440–480, 450–490,
　　　　　　　　 480–512, 480–520 MHz

*according to version

///When no receive frequency is entered, other items cannot be programmed in the channel.

///When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 23), operating frequencies must be programmed from channel 1 without a blank.

When programming a simplex channel (transmit and receive frequencies are the same), checks the simplex check-box for instant setting after receive frequency is programmed as follows.

Go to CH Atr

• **Frequency— Simplex**

Click the check-box when the same frequency as the receive is used for the transmit.

　-The "✔" mark appears in the check-box when checked.

• **Frequency— Text**

Enter up to a 12-character text in the Text box for memory name, channel usage, etc.

The usable characters are A–Z, a–z, 0–9, $, ', (,), –, /, <, =, >, @, [, \,], _, {, |, } ~ and user original characters.

When entering user original characters, enter '%' and the desired thumbnail number A to P (capital letter only).

Programming example.:

When entering original character's thumbnail number C, enter as '%C.'

When no text is entered, the channel number is indicated.

User original characters are programmed in **3-6 CHARACTER EDITOR** (p. 22).

Go to 3-6 CHARACTER EDITOR

• **Frequency— CH Inhibit**

Click the check-box when the channel is to be inhibited.

The channel never appears on the transceiver, even if all the other items are programmed when the channel is inhibited.

　-The "✔" mark appears in the check-box when checked.

• **Frequency— TX Inhibit**

Click the check-box when transmission inhibit is necessary.

　-The "✔" mark appears in the check-box when checked.

• 2Tone

Selects the 2-Tone code channel for reception with transceiver's action when a matched 2-tone code is received from OFF, 1, 2 and 3.

OFF : Nothing changes.

1, 2, 3 : Activates a specified channel 1, 2 or 3 as programmed in the **9-1 RX CODE CHANNEL** (p. 45).

• C.Tone— RX, TX

Selects the desired CTCSS frequency from the list or enter a 3-digit DTCS code with polarity, N (Normal) or I (Inverse), for receive and transmit in the RX and TX boxes, respectively.

RECOMMENDATION

When programming a CTCSS/DTCS code, choosing a frequency/code, listed in the following tables is recommended. In case a CTCSS frequency/DTCS code other than below is used, sometimes the squelch system may not performed correctly.

• Recommended CTCSS frequencies

67.0	77.0	88.5	100.0	114.8	131.8	151.4	173.8	203.5	233.6
69.3	79.7	91.5	103.5	118.8	136.5	156.7	179.9	210.7	241.8
71.9	82.5	94.8	107.2	123.0	141.3	162.2	186.2	218.1	250.3
74.4	85.4	97.4	110.9	127.3	146.2	167.9	192.8	225.7	

• Recommended DTCS codes

023	065	131	172	261	346	431	532	654	743
025	071	132	174	263	351	432	546	662	754
026	072	134	205	265	364	445	565	664	
031	073	143	223	271	365	464	606	703	
032	074	152	226	306	371	465	612	712	
043	114	155	243	311	411	466	624	723	
047	115	156	244	315	412	503	627	731	
051	116	162	245	331	413	506	631	732	
054	125	165	251	343	423	516	632	734	

• C.Tone— RX, TX— continue

When programming the same continuous tone as the receive for the transmission, check the simplex check-box for instant setting after receive frequency is programmed as follows.

• C.Tone— Simplex

Click the check-box when the same continuous tone as the receive is used for the transmission.

-The "✔" mark appears in the check-box when checked.

• Scan— 1–10

Click the check-box of the channel included into the desired scan list (scanning group) 1–10.

Only the checked channels in the same scan list are scanned when [Scan A Start/Stop] or [Scan B Start/Stop] switch is pushed.

-The "✔" mark appears in the check-box when checked.

The scan list (scanning group) is selectable via [CH Up] or [CH Down] switches, after [Scan A Start/Stop] or [Scan B Start/Stop] switch is pushed for 1 sec.

The scanning conditions for each scan list are specified in **8 SCAN LIST** (pgs. 43–44).

When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 23), all boxes must be blank.

[CH Up], [CH Down], [Scan A Start/Stop] or [Scan B Start/Stop] switch is assigned in **3-1 KEY & DISPLAY ASSIGN** (p. 6).

• Scan— Scan List Include

Click the check-box to enable scanning channel modification from the transceiver's keypad.

The desired channel can be added or deleted to/from the selected scan list by pushing [Scan Add/Del(Tag)] switch.

[Scan Add/Del(Tag)] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 6).

> **Go to Scan Add/Del(Tag)**

• Scrambler— OFF, ON, Inhibit

Click to select voice scrambling function initial setting from OFF, ON and Inhibit.

When OFF or ON is selected, the voice scrambling function can be manually switched with the [Scrambler] switch, however, the function cannot be manually switched ON when Inhibit is selected.

An optional UT-109 or UT-110 VOICE SCRAMBLER UNIT is required.

The [Scrambler] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 10).

> **Go to Scrambler**

• Scrambler— Code

Enter the voice scrambling code within 1–32 using UT-109 or UT-110 with 'Non-Rolling' selection or within 1–255 using UT-110 with 'Rolling' selection installed.

In addition, the **Scrambler— Group Code** in *3-4 COMMON 2* (p. 19) must be programmed when UT-110 is installed and 'Rolling' is selected in **Scrambler— Type** in *3-4 COMMON 2* (p. 19).

> **Go to Scrambler— Group Code**
>
> **Go to Scrambler— Type**

• Wide/Narrow

Select the passband width for each operating channel from Wide and Narrow.

The selection can be manually switched with the [Wide/Narrow] switch for temporary operation.

The [Wide/Narrow] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 8).

> **Go to Wide/Narrow**

• RF PWR

Selects the transmit output power for initial setting from High, Low1 and Low2.

The selected output power setting for each channel can be switched to either temporary or permanent operation, according to the setting in the **RF Power Selection** in *3-1 KEY & DISPLAY ASSIGN* (p. 13) via [High/Low] switch.

The [High/Low] switch is assigned in the *3-1 KEY & DISPLAY ASSIGN* (p. 7)

> **Go to RF Power Selection**
>
> **Go to High/Low**

• Lock out

Selects the transmission lock out (temporary transmission inhibit) capability from OFF, Busy and Rpt (Repeater).

OFF : No restriction for receiving a signal.

Busy : [PTT] switch cannot be activated while the operating channel/repeater is in use.

Rpt : [PTT] switch can be activated while receiving a signal with matched CTCSS (or DTCS) tone or no signals.

In addition, [PTT] switch is not activated for an extra time period in the case of when the lockout penalty timer, programmed in the **Lockout Penalty Timer** in *3-4 COMMON 2* (p. 18), is activated, even if the transceiver is in a transmittable condition.

Go to Lockout Penalty Timer

• Log IN/OFF

Selects the automatic ID transmission condition in relation with [PTT] from L-IN, L-OFF, Both and OFF.

OFF : No ID is transmitted with [PTT].

L-IN : ID is transmitted each time [PTT] is pushed.

L-OFF: ID is transmitted each time [PTT] is released.

Both : ID is transmitted each time [PTT] is pushed and released.

Log/ID code is used as the ID code, programmed in *6-1 DTMF AUTODIAL* (p. 40).

When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 23), "OFF" must be selected.

Go to 6-1 DTMF AUTODIAL

Go to CH Atr

• Auto Reset

Selects the reset timer from Timer A and Timer B for restarting scanning when the power ON scan function is activated

Timer A, Timer B:
　　Restarts scanning after specified time period (Timer A or Timer B) has passed from a disappearing signal or key operation is finished.

The time period of Timer A and Timer B are programmed in the **Auto Reset Timer A, Auto Reset Timer B** in *3-3 COMMON 1* (p. 16), respectively.

To turn OFF the function, select the timer in which OFF (0 sec.) is programmed.

The power ON scan function is specified in the **Power ON Scan** in *8-2 SCAN SETTING* (p. 44).

Go to Auto Reset Timer A, Auto Reset Timer B

Go to Power ON Scan

• Compander

Click the check-box to activate the compander function.

-The "✔" mark appears when the compander function is activated.

When communicating with other station which doesn't use or have the compander function, recommend to turn the compander function OFF via [Compander] switch or not click the check-box.

The function can be switched ON or OFF for temporary operation with the [Compander] switch.

The [Compander] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 10).

Go to Compander

• TOT

Click the check-box to activate the time-out timer function.

  -The "✔" mark appears when TOT function is activated.

Continuously transmittable time is limited by the timer during activation. However, time-out timer must be activated due to local regulation in some countries.

The time period is programmed in the **TOT— TOT Timer** in *3-3 COMMON 1* (p. 17).

When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 23), "OFF" must be selected.

> **Go to TOT— TOT Timer**
> **Go to CH Atr**

• PWR Save

Click the check-box to activate the power save function.

 -The "✔" mark appears when the power save function is activated.

The power save start times are programmed in the **PWR Save— Start Timer (1st), (2nd)** in *3-5 EXPERT* (p. 21).

When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 23), "OFF" must be selected.

> **Go to PWR Save— Start Timer (1st), (2nd)**
> **Go to CH Atr**

• CH Atr

Selects the channel attribution from Prio A, Prio B, Emergency, Emergency OFF and SmarTrunk ON/OFF.

Right click on the desired channel to open the sub-menu window as at right, then select the channel attribution.

A: Priority— "A" tagged channel becomes the priority channel A, simply recalled by pushing [Priority A] or [Priority A (Rewrite)] switch, and also is automatically monitored during the priority scan. When [Priority A (Rewrite)] switch is assigned, priority channel A can be re-assigned by pushing [Priority A (Rewrite)] switch for 1 sec.

B: Priority— "B" tagged channel becomes the priority channel B, simply recalled by pushing [Priority B] switch.

E: Emergency— "E" tagged channel becomes an emergency channel, immediately recalled and sends an emergency signal by pushing [Emergency Single] or [Emergency Repeat] switch, or when the man down function is activated. Only 1 channel can be set.

Emergency OFF— Regular channel.

SmarTrunk ON/OFF— Specifies the selected bank for SmarTrunk operation.

SmarTrunk specified bank/s, the bank item in the Memory Channel folder, displayed in the Tree View Screen, changes from regular to SmarTrunk type as follows, for easy recognition.

 : Regular type   : SmarTrunk type

[Priority A], [Priority A (Rewrite)], [Priority B], [Emergency Single] and [Emergency Repeat] switches are assigned in *3-1 KEY & DISPLAY ASSIGN* (pgs. 7, 9).

The man down function is specified in **Man Down— ON, Timer** in *3-4 COMMON 2* (p. 19).

Go to ② Memory Channel
Go to Prio A, Prio B
Go to Prio A (Rewrite)
Go to Emergency Single, Emergency Repeat
Go to Man Down— ON, Timer

The channel attribution can only be set on the Memory channel Screen as shown above. (Cannot be set in the Edit window.) However, the other items are programmable in the Edit window only.

The Edit window appears by pushing the [Enter] key, double clicking or selecting in the sub menu window via right click operation with the mouse on the desired channel.

• Frequency— RX, TX

Enter receive and transmit frequencies within the following frequency ranges in either 5, 6.25 or 7.5 kHz steps* for the RX and TX boxes, respectively.

IC-F31GT/GS : 136–174 MHz
IC-F41GT/GS : 400–430, 440–480, 470–500,
490–520 MHz

*according to version

When no receive frequency is entered, other items cannot be programmed in the channel.

When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 29), operating frequencies must be programmed from channel 1 without a blank.

When programming a simplex channel (transmit and receive frequencies are the same), checks the simplex check-box for instant setting after receive frequency is programmed as follows.

Go to CH Atr

• Frequency— Simplex

Click the check-box when the same frequency as the receive is used for the transmit.

-The "✔" mark appears in the check-box when checked.

• Frequency— Text

Enter up to a 12-character text in the Text box for memory name, channel usage, etc.

The usable characters are A–Z, a–z, 0–9, $, ', (,), –, /, <, =, >, @, [, \,], _, {, |, } ~ and user original characters.

When no text is entered, the channel number is indicated.

When entering user original characters, enter '%' and the desired thumbnail number A to P (capital letter only).

Programming example:
When entering original character's thumbnail number C, enter as '%C.'

User original characters are programmed in ***3-6 CHARACTER EDITOR*** (p. 22).

Go to 3-6 CHARACTER EDITOR

• Frequency— CH Inhibit

Click the check-box when the channel is to be inhibited.

The channel never appears on the transceiver, even if all the other items are programmed when the channel is inhibited.

-The "✔" mark appears in the check-box when checked.

Edit Memory CH dialog box showing:

Frequency
- RX: 0.00000
- ☐ Simplex
- TX: 0.00000
- Text: [blank]
- ☐ CH Inhibit
- ☐ TX Inhibit

C.Tone
- RX: OFF
- ☐ Simplex
- TX: OFF

Scan
- ☑ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10
- ☑ Scan List Include

5Tone
- SW Action
  - Moni: Both
  - Sel: OFF
  - Call: OFF
  - PTT: OFF
- 5Tone Signaling
  - Form: CCIR
  - RPT: OFF ☐ Long
  - STN: OFF ☐ Long
  - ID: OFF ☐ Long
  - Pos: OFF

RX C-No
- ☑ 1 ☑ 2 ☑ 3 ☑ 4 ☑ 5 ☑ 6 ☑ 7 ☑ 8

- Wide/Narrow: Wide
- RF PWR: Low1
- Lockout: OFF
- Log IN/OFF: OFF
- Auto Reset: Timer B
- CH Mute: CONT
- ☐ Compander
- ☑ TOT
- ☑ PWR Save

Scrambler
- ◉ OFF
- ○ ON
- ○ Inhibit
- Code: 1

[OK] [Cancel]

• Frequency— TX Inhibit
Click the check-box when transmission inhibit is necessary.
 -The "✔" mark appears in the check-box when checked.

• C.Tone— RX, TX
Selects a desired CTCSS frequency from the list or enter a 3-digit DTCS code with polarity, N (Normal) or I (Inverse), for receive and transmit in the RX and TX boxes, respectively.

░ *RECOMMENDATION*
When programming a CTCSS/DTCS code, choosing a frequency/code, listed in the following tables is recommended. In case a CTCSS frequency/DTCS code other than below is used, sometimes the squelch system may not performed correctly.

• Recommended CTCSS frequencies

67.0	77.0	88.5	100.0	114.8	131.8	151.4	173.8	203.5	233.6
69.3	79.7	91.5	103.5	118.8	136.5	156.7	179.9	210.7	241.8
71.9	82.5	94.8	107.2	123.0	141.3	162.2	186.2	218.1	250.3
74.4	85.4	97.4	110.9	127.3	146.2	167.9	192.8	225.7	

• Recommended DTCS codes

023	065	131	172	261	346	431	532	654	743
025	071	132	174	263	351	432	546	662	754
026	072	134	205	265	364	445	565	664	
031	073	143	223	271	365	464	606	703	
032	074	152	226	306	371	465	612	712	
043	114	155	243	311	411	466	624	723	
047	115	156	244	315	412	503	627	731	
051	116	162	245	331	413	506	631	732	
054	125	165	251	343	423	516	632	734	

• C.Tone— Simplex
Click the check-box when the same continuous tone as the receive is used for the transmission.
 -The "✔" mark appears in the check-box when checked.

• Scan— 1–10
Click the check-box of the channel included into the desired scan list (scan group) 1–10.

Only the checked channels in the same scan list are scanned when [Scan A] or [Scan B] switch is pushed.
 -The "✔" mark appears in the check-box when checked.

The scan list (scanning group) is selectable via [CH Up] or [CH Down] switches, after [Scan A] or [Scan B] switch is pushed for 1 sec.

The scanning conditions for each scan list are specified in *8 SCAN LIST* (pgs. 43–44).

░ When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 29), all boxes must be blank.

[CH Up], [CH Down], [Scan A Start/Stop] or [Scan B Start/Stop] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 6).

Go to 8 SCAN LIST
Go to CH Atr
Go CH Up, CH Down
Go to Scan A Start/Stop, Scan B Start/Stop
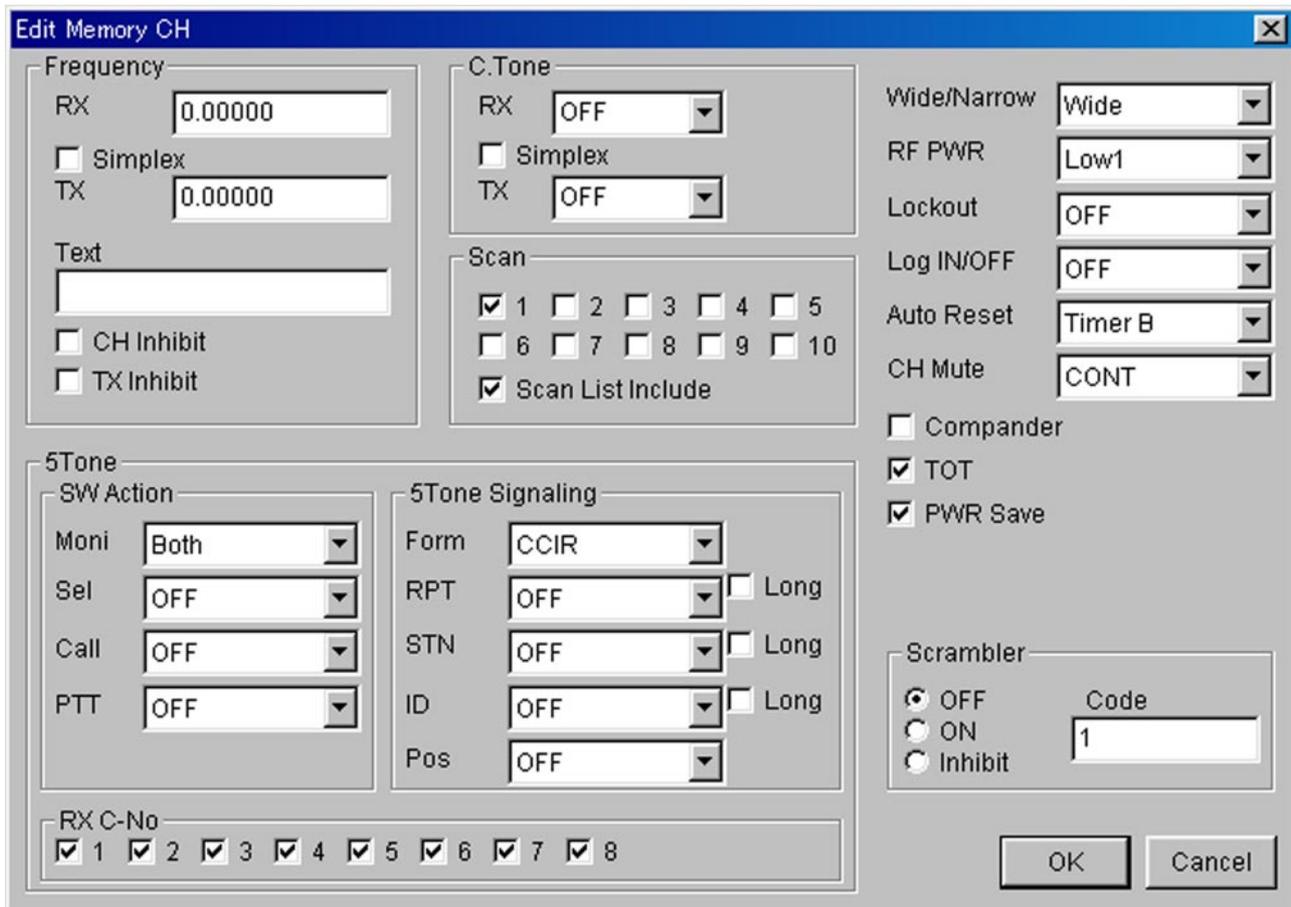
• Scan— Scan List Include

Click the check-box to enable scanning channel modification from the transceiver's key.

The desired channel can be added or deleted to/from the selected scan list by pushing [Scan Add/Del(Tag)] switch.

[Scan Add/Del(Tag)] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 6).

Go to Scan Add/Del(Tag)

• SW Action— Moni

Selects [Moni(Audi)] switch action from OFF, Aud, In A, In A+R1, In A+R2, Both, Both+R1 and Both+R2.

  OFF : Releases both noise and CTCSS/DTCS squelch mute while pushing and holding [Moni(Audi)] switch. There is no audio output when 5-tone mute is activated on the channel.

  Aud : Releases the 5-tone mute only when 'SGL' is selected in **CH Mute** (p. 38) in this screen, by pushing [Moni(Audi)] switch for 1 sec.
Both CTCSS/DTCS and noise squelch mutes are released (audio is emitted) while pushing and holding [Moni(Audi)] switch when 5-tone mute is released or 'CONT' is selected in **CH Mute** (p. 38) in this screen.

• SW Action— Moni— continued

 In A : Mutes the 5-tones when 'SGL' is selected in **CH Mute** (p. 38) in this screen by pushing [Moni(Audi)] switch.
Both CTCSS/DTCS and noise squelch mutes are released (audio is emitted) while pushing and holding [Moni(Audi)] switch while 5-tone mute is activated.

In A+R1, In A+R2:
In addition to the 'In_A' condition as above, a reset code 1 or 2 is automatically transmitted when call transmission is performed or 5-tone mute is activated by pushing [Moni(Audi)] switch.

Both : Mutes the 5-tones when 'SGL' is selected in **CH Mute** (p. 38) in this screen by pushing [Moni(Audi)] switch.
Releases 5-tone mute when 'SGL' is selected in **CH Mute** (p. 38) in this screen by pushing [Moni(Audi)] switch for 1 sec.
Releases all mute controls and emits audio while pushing and holding [Moni(Audi)] switch.
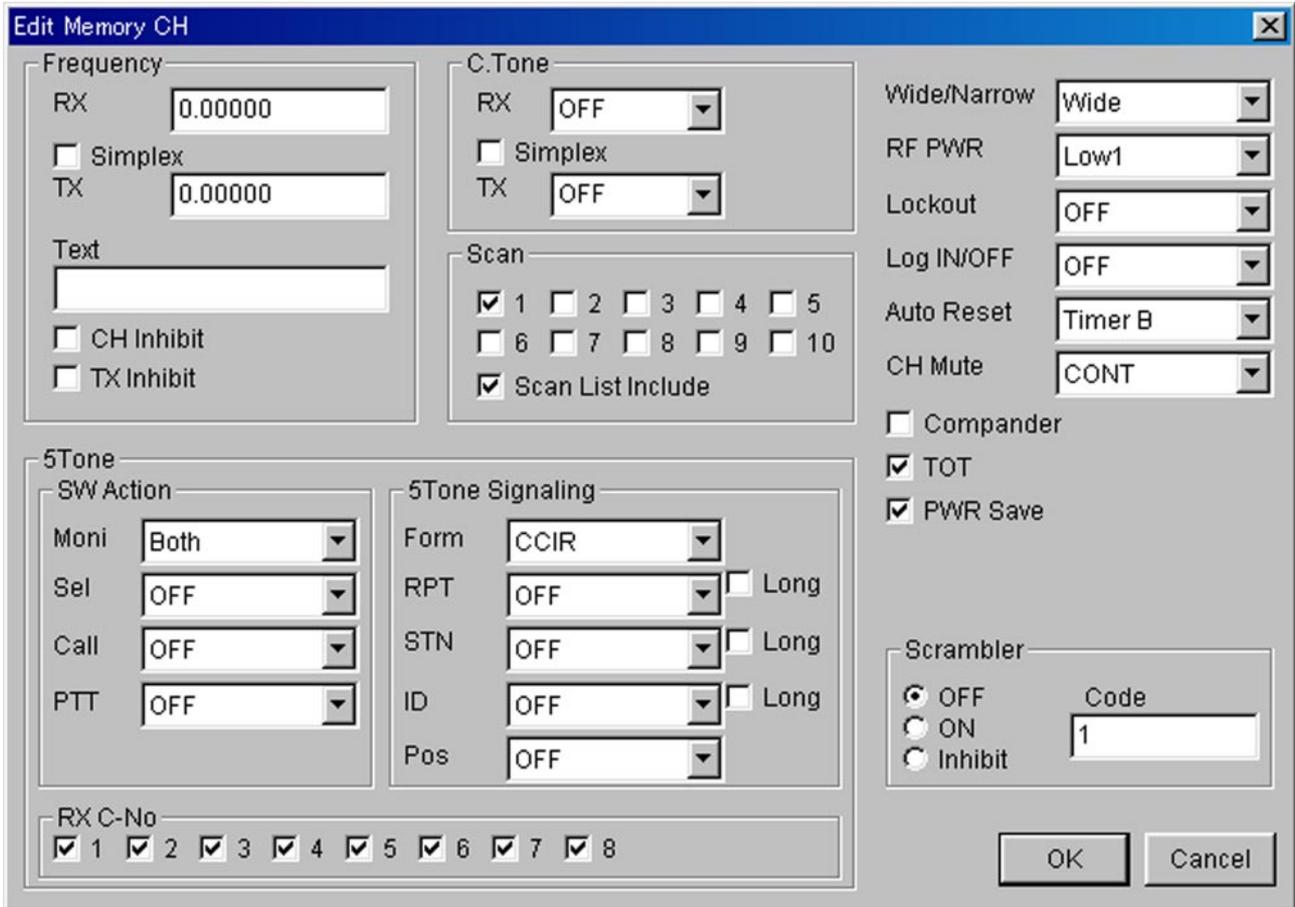
• SW Action— Moni (continued)

Both+R1, Both+R2:

> In addition to the 'Both' condition as above, a reset code 1 or 2 is automatically transmitted when call transmission is performed via [Call] switch or 5-tone mute is activated by pushing [Moni(Audi)] switch.

The [Moni(Audi)] and [Call] switches are assigned in the *3-1 KEY & DISPLAY ASSIGN* (pgs. 7, 8).

The reset code 1 and 2 are programmed in *10-2 TX CODE CHANNEL* (p. 52), and channels 32 (reset code 1) and 31 (reset code 2) are used, respectively.

The mute condition will be returned to initial condition when the Auto Reset timer is activated, specified in **Auto Reset** in this screen (p. 37).

Go to CH Mute
Go to Moni(Audi)
Go to Call
Go to 10-2 TX CODE CHANNEL
Go to Auto Reset

• SW Action— Sel

Selects the mute condition after memory or TX code channel selection from OFF, Aud and In A.

OFF : Does not change even when selecting memory or TX code channel.

Aud : Releases the 5-tone mute when 'SGL' is selected in **CH Mute** (p. 38) in this screen.

In A : Mutes the 5-tones when 'SGL' is selected in **CH Mute** (p. 38) in this screen.

The mute condition will be returned to initial condition when the Auto Reset timer is activated, specified in **Auto Reset** in this screen (p. 37).

Go to CH Mute
Go to Auto Reset

• **SW Action— Call, PTT**

Selects the mute condition after [Call] and [PTT] switches action from Aud and OFF.

OFF : Does not change when transmitting with [Call]/[PTT] transmission.

Aud : Releases the 5-tone mute when 'SGL' is selected in **CH Mute** (p. 38) in this screen after any [Call]/[PTT] transmission.

Select OFF for both the SW Action— Call and PTT, when the **ABC— Aud** in *10-2 TX CODE CHANNEL* (p. 53) is activated, and select OFF for the SW Action— PTT, when the **PTT Call at Inaudible** in *10-5 5TONE SETTING* (p. 57) is activated.

The [Call] switch is assigned in the *3-1 KEY & DIS-PLAY ASSIGN* (p. 8).

The mute condition will be returned to initial condition when the Auto Reset timer is activated, specified in **Auto Reset** in this screen (p. 37).

Go to CH Mute
Go to Go to ABC— Aud
Go to Call
Go to PTT Call at Inaudible
Go to Auto Reset

• **5Tone Signaling— Form**

Selects 5-tone system format from USER, CCIR, ZVEI1, ZVEI2, DZVEI, EEA, EEA2, DAPL, EIA and DTMF.

When the DTMF decoder operation is required, select DTMF in this item.

• **5Tone Signaling— RPT, STN, ID**

Selects 5-tone code channel for repeater (RPT), individual station/group (STN) access and own identity (ID), respectively.

These 5-tone codes are programmed in **TX Code** in *10-2 TX-CODE CHANNEL* (p. 52).

| Go to TX Code |
| :---: |
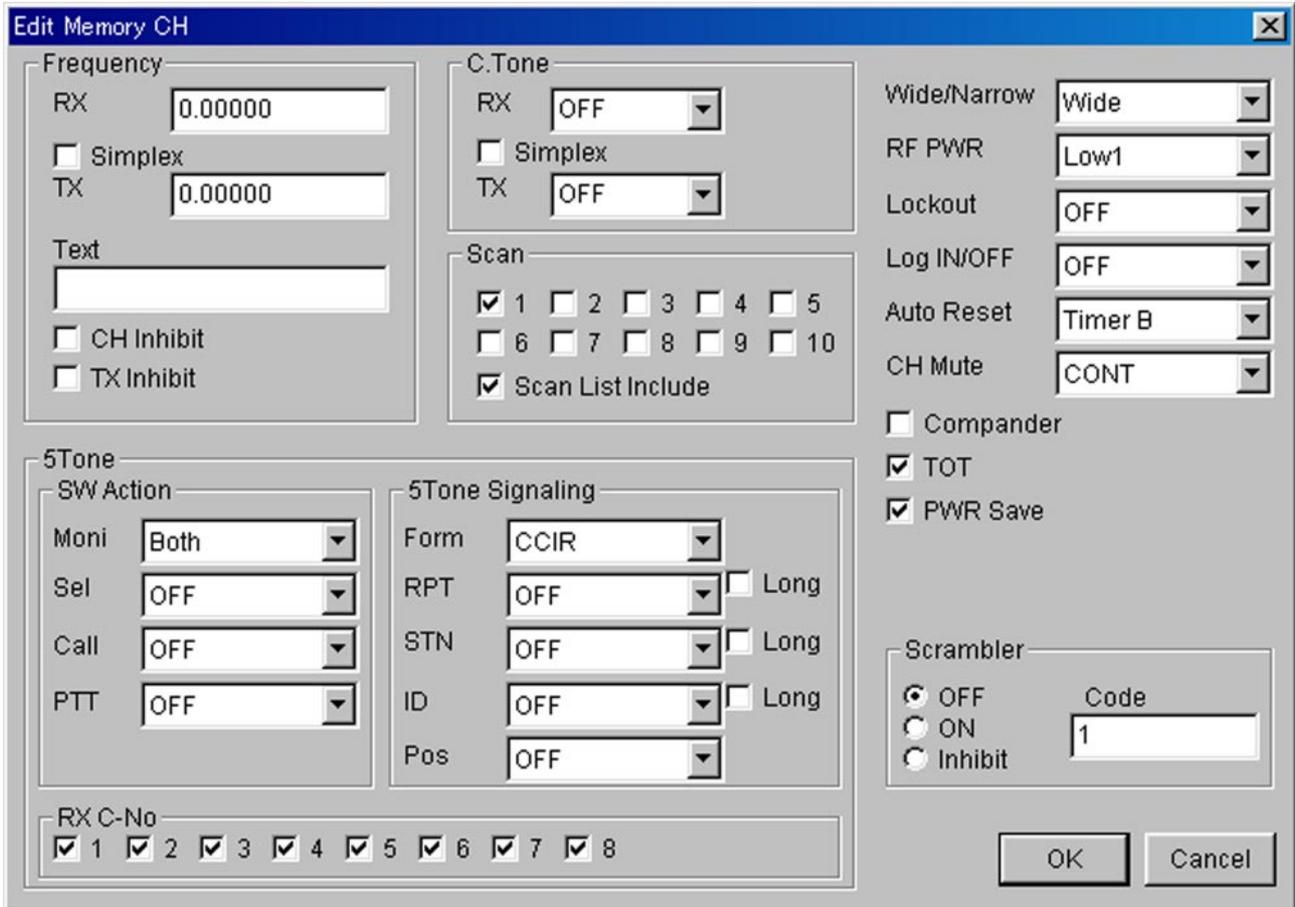
• 5Tone Signaling— Pos
Selects the own ID code sending sequence from OFF, BTM and TOP.

OFF : Does not send the ID code.
BTM : Sends the ID code after sending station or group code.
TOP : Sends the ID code before sending station or group code.

• ID code sending sequence diagram
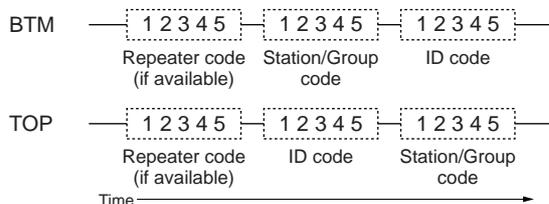
• 5Tone Signaling— Long
Click the check-box to activate the long tone capability for each 5-tone code, RPT, STN and ID, respectively.

-The "✔" mark appears when long tone is activated.

The time period for the long tone is programmed in the **Long Tone Timer** in *10-5 5TONE SETTING* (p. 56).

> **Go to Long Tone Timer**

• RX C-No
Click the check-box to select the receive 5-tone code channel to be decoded.

Up to 8 codes/channels can be selected to decode in each operating channel.

The 5-tone code is programmed in **RX Code** in *10-1 RX CODE CHANNEL* (p. 49).

> **Go to RX Code**

• Wide/Narrow
Select the passband width for each operating channel from Wide and Narrow.

The selection can be manually switched with the [Wide/Narrow] switch for temporary operation.

The [Wide/Narrow] switch is assigned in **3-1 *KEY & DISPLAY ASSIGN*** (p. 8).

> **Go to Wide/Narrow**

• **RF PWR**

Selects the transmit output power for initial setting from High and Low.

The selected output power setting for each channel can be switched to either temporary or permanent operation, according to the setting in the **RF Power Selection** in **3-1 KEY & DISPLAY ASSIGN** (p. 13) via [High/Low] switch.

The [High/Low] switch is assigned in the **3-1 KEY & DISPLAY ASSIGN** (p. 7).

Go to RF Power Selection

Go to High/Low

• **Lock out**

Selects the transmission lock out (temporary transmission inhibit) capability from OFF, Busy, Rpt 1 and Rpt 2.

OFF : No restriction for receiving a signal.

Busy : [PTT] switch cannot be activated while the operating channel/repeater is in use.

Rpt1 : [PTT] switch can be activated while receiving a signal with matched CTCSS (or DTCS) tone or no signals.

• *Lock out— continued*

Rpt2 : [PTT] switch can be activated while receiving a signal with matched CTCSS (or DTCS) tone or no signals while 5-tone mute is released, or receiving an unmatched CTCSS (or DTCS) tone while 5-tone mute is activated.

In addition, [PTT] switch is not activated for an extra time period in the case of when the lockout penalty timer, programmed in the **Lockout Penalty Timer** in **3-4 COMMON 2** (p. 18), is activated even if the transceiver is in a transmittable condition.

Go to Lockout Penalty Timer

• **Log IN/OFF**

Selects the automatic ID transmission condition in relation to [PTT] switch from OFF, L-IN, L-INA, L-INI, L-OFF, L-OFFA, Both, BothA1 and BothA2.

OFF : No ID is transmitted with [PTT].

L-IN : ID is transmitted when [PTT] is pushed.

L-INA : ID is transmitted when [PTT] is pushed while 5-tone mute is released.

L-INI : ID is transmitted when [PTT] is pushed while 5-tone mute is activated. Voice transmission is impossible while 5-tone mute is activated and 'SGL' is selected in **CH Mute** (p. 38) in this screen.

Edit Memory CH

Frequency
- RX 0.00000
- ☐ Simplex
- TX 0.00000
- Text
- ☐ CH Inhibit
- ☐ TX Inhibit

C.Tone
- RX OFF
- ☐ Simplex
- TX OFF

Scan
- ☑ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
- ☐ 6 ☐ 7 ☐ 8 ☐ 9 ☐ 10
- ☑ Scan List Include

5Tone
- SW Action
  - Moni Both
  - Sel OFF
  - Call OFF
  - PTT OFF
- 5Tone Signaling
  - Form CCIR
  - RPT OFF ☐ Long
  - STN OFF ☐ Long
  - ID OFF ☐ Long
  - Pos OFF

RX C-No
- ☑ 1 ☑ 2 ☑ 3 ☑ 4 ☑ 5 ☑ 6 ☑ 7 ☑ 8

- Wide/Narrow Wide
- RF PWR Low1
- Lockout OFF
- Log IN/OFF OFF
- Auto Reset Timer B
- CH Mute CONT
- ☐ Compander
- ☑ TOT
- ☑ PWR Save

Scrambler
- ⦿ OFF
- ◯ ON
- ◯ Inhibit
- Code 1

OK   Cancel

• *Log IN/OFF— continued*

L-OFF : ID is transmitted when [PTT] is released.

L-OFFA : ID is transmitted when [PTT] is released while 5-tone mute is released.

Both : ID is transmitted when both [PTT] is pushed and released.

BothA1 : ID is transmitted when both [PTT] is pushed and released while 5-tone mute is released.

BothA2 : ID is transmitted when both [PTT] is pushed and released while 5-tone mute is released. ID is transmitted when [PTT] is pushed while 5-tone mute is activated. Voice transmission is impossible while 5-tone mute is activated and when 'SGL' is selected in **CH Mute** (p. 38) in this screen.

▨ When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 29), "OFF" must be selected.

The ID code is assigned in the **5Tone signaling— ID** column in this screen (p. 34), and the 5-tone code is programmed in **TX Code** in *10-2 TX CODE CH* (p. 52).

Go to CH Mute

Go to CH Atr

Go to 5Tone Signaling— ID

Go to TX Code

• **Auto Reset**

Selects the reset timer from Timer A, Timer B, Timer A Inact and Timer B Inact.

Timer A, Timer B:
Returns 5-tone mute condition to initial, and starts scanning if power ON scan function is tuned ON, after a specified time (Timer A or B) has passed from a disappearing signal, or when key operation is finished.

Timer A Inact, Timer B Inact:
Returns 5-tone mute condition to initial after a shorter time period (either Timer A/B or Inactive) has passed from when 5-tone mute is released. Automatically returns 5-tone mute condition to initial as soon as transmission is finished, and starts scanning after specified time (Timer A or B) has passed.

The time period of Timer A, Timer B and Inactive timer is programmed in the **Auto Reset Timer A, Auto Reset Timer B** and **Inactive Timer** in *3-3 COMMON 1* (p. 16), respectively.

To turn OFF the function, select the timer which OFF (0 sec.) is programmed.

The power ON scan function is specified in the **Power ON Scan** in *8-2 SCAN SETTING* (p. 44).

• *Auto Reset— continued*

5-tone mute initial condition is selected in **CH Mute** as follow.

Go to Auto Reset Timer A, Auto Reset Timer B

Go to Inactive Timer

Go to Power ON Scan

• **CH Mute**

Selects 5-tone mute initial activity from CONT and SGL.

CONT : 5-tone mute is released.

SGL : 5-tone mute is activated. In this case, [PTT] switch action is inhibited while 5-tone mute is activated.

• **Compander**

Click the check-box to activate the compander function.
-The "✔" mark appears when the compander function is activated.

When communicating with other station which doesn't use or have the compander function, recommend to turn the compander function OFF via [Compander] switch or not click the check-box.

The function can be switched ON or OFF for temporary operation with the [Compander] switch.

The [Compander] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 10).

Go to Compander

• **TOT**

Click the check-box to activate the time-out timer function.

  -The "✔" mark appears when TOT function is activated.

Continuously transmittable time is limited by the timer during activation. However, time-out timer must be activated due to local regulation in some countries.

The time period is programmed in the **TOT— TOT Timer** in *3-3 COMMON 1* (p. 17).

▨ When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 29), "OFF" must be selected.

Go to TOT— TOT Timer

Go to CH Atr

• **PWR Save**

Click the check-box to activate the power save function.

  -The "✔" mark appears when the power save function is activated.

The power save start times are programmed in the **PWR Save— Start Timer (1st), (2nd)** in *3-5 EXPERT* (p. 21).

▨ When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** (p. 29), "OFF" must be selected.

Go to PWR Save— Start Timer (1st), (2nd)

Go to CH Atr

• **Scrambler— OFF, ON, Inhibit**

Click to select voice scrambling function initial setting from OFF, ON and Inhibit.

When OFF or ON is selected, the voice scrambling function can be manually switched with the [Scrambler] switch, however, the function cannot be manually switched ON when Inhibit is selected.

An optional UT-109 or UT-110 VOICE SCRAMBLER UNIT is required.

The [Scrambler] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 10).

Go to Scrambler

• **Scrambler— Code**

Enter the voice scrambling code within 1–32 using UT-109 or UT-110 with 'Non-Rolling' selection or within 1–255 using UT-110 with 'Rolling' selection installed.

In addition, the **Scrambler Group Code** in *3-4 COMMON 2* (p. 19) must be programmed when UT-110 is installed and 'Rolling' is selected in **Scrambler Type** in *3-4 COMMON 2* (p. 19).

Go to Scrambler Group Code

Go to Scrambler Type

6 DTMF AUTODIAL

6-1 DTMF AUTODIAL

Memory Channel Screen indication for LMR

Memory Channel Screen indication for PMR

The IC-F30G series transceiver has total of 8 DTMF memory channels. The programmed DTMF codes are selected and transmitted with simple operation. For the LMR, the programmed DTMF code in the Emergency and the Log/ID autodial are used for Emergency call, man down function, and automatic ID transmission, respectively.
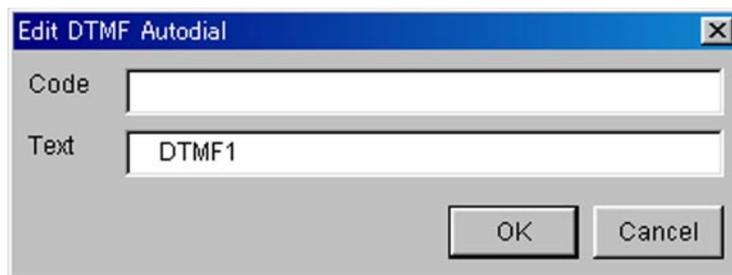
• Code

Enter up to a 24-digit DTMF code for simple and quick DTMF code transmission.

The usable characters are 0–9, A–F (#/✱ used as F/E).

The programmed DTMF codes are selected via [CH Up] or [CH Down] switch after pushing [DTMF Autodial] switch.

The [CH Up], [CH Down] and [DTMF Autodial] switches are assigned in *3-1 KEY & DISPLAY ASSIGN* (pgs. 6, 8).

• Text

Enter up to a 12-character text for easy recognition of DTMF code usage, etc.

When no text is programmed, the programmed DTMF code is scrolled.

The usable characters are A–Z, a–z, 0–9, $, ', (,), –, /, <, =, >, @, [, \,], _, {, |, } ~ and user original characters.

When entering user original characters, enter '%' and the desired thumbnail number A to P (capital letter only).

Programming example:
When entering original character's thumbnail number C, enter as '%C.'

When no text is entered, the channel number is indicated.

User original characters are programmed in *3-6 CHARACTER EDITOR* (p. 22).

6-2 DTMF SETTING
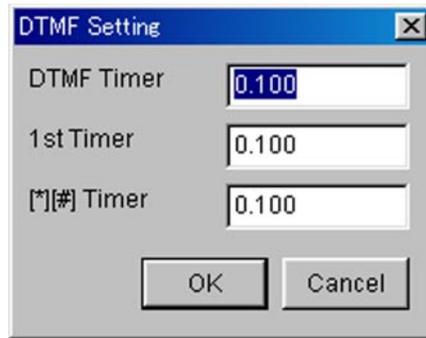
• DTMF Timer
Enter the time period/signal length for each DTMF code emission and interval.

• 1st Timer
Enter the time period/signal length for 1st DTMF code emission and interval corresponding to the scanning or power saving of the transceiver.

• [✱] [#] Timer
Enter the time period/signal length for [✱] and [#] DTMF code signal emission and interval.

These codes may be used for control codes depending on the signaling system.

When these special codes are used for the 1st digit code, the **1st Timer** as at left has priority over this setting.

CONTINUOUS TONE

Memory Channel Screen indication

The IC-F30G series transceiver has a total of 9 continuous tone memory channels, in addition to the channel (operating channel) independent continuous tone operation. Separate continuous tone, CTCSS or DTCS for encoder and decoder, can be programmed for each channel, and can be operated temporarily or permanently.
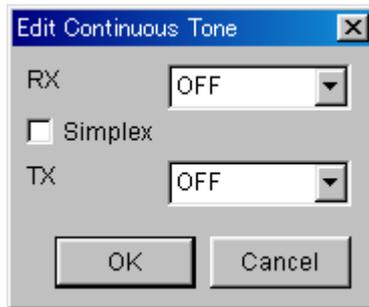
• RX, TX

Selects the desired CTCSS frequency from the list or enter a 3-digit DTCS code with polarity, N (Normal) or I (Inverse), for receive and transmit in the RX and TX boxes, respectively.

When programming the same continuous tone as the receive for the transmission, check the simplex check-box for instant setting after RX is programmed as at right.

The programmed continuous tone combinations can be used for temporary encoder and/or decoder operation.

To use the programmed continuous tone;

Push [C. Tone CH Ent] switch, then select a continuous tone memory channel via [CH Up] or [CH Down] switch.

[C. Tone CH Ent], [CH Up] and [CH Down] switches are assigned in *3-1 KEY & DISPLAY ASSIGN* (pgs. 6, 7).

Go to C.Tone CH Ent

Go to CH Up, CH Down

• Simplex

Click the check-box when the same continuous tone as the receive is used for the transmission.

-The "✔" mark appears in the check-box when checked.

RECOMMENDATION

When programming a CTCSS/DTCS code, choosing a frequency/code, listed in the following tables is recommended. In case a CTCSS frequency/DTCS code other than below is used, sometimes the squelch system may not performed correctly.

• Recommended CTCSS frequencies

67.0	77.0	88.5	100.0	114.8	131.8	151.4	173.8	203.5	233.6
69.3	79.7	91.5	103.5	118.8	136.5	156.7	179.9	210.7	241.8
71.9	82.5	94.8	107.2	123.0	141.3	162.2	186.2	218.1	250.3
74.4	85.4	97.4	110.9	127.3	146.2	167.9	192.8	225.7	

• Recommended DTCS codes

023	065	131	172	261	346	431	532	654	743
025	071	132	174	263	351	432	546	662	754
026	072	134	205	265	364	445	565	664	
031	073	143	223	271	365	464	606	703	
032	074	152	226	306	371	465	612	712	
043	114	155	243	311	411	466	624	723	
047	115	156	244	315	412	503	627	731	
051	116	162	245	331	413	506	631	732	
054	125	165	251	343	423	516	632	734	

8-1 SCAN LIST

List	Mode	Text	Text ON/OFF	PWR Save	
1	MODE1	SCAN1	ON	ON	
2	MODE1	SCAN2	ON	ON	
3	MODE1	SCAN3	ON	ON	
4	MODE1	SCAN4	ON	ON	
5	MODE1	SCAN5	ON	ON	
6	MODE1	SCAN6	ON	ON	
7	MODE1	SCAN7	ON	ON	
8	MODE1	SCAN8	ON	ON	
9	MODE1	SCAN9	ON	ON	
10	MODE1	SCAN10	ON	ON	

Memory Channel Screen indication

A total of 10 scanning lists/groups are available for a wide variety and flexible scanning operation. In this screen, program scanning conditions for each list/group.
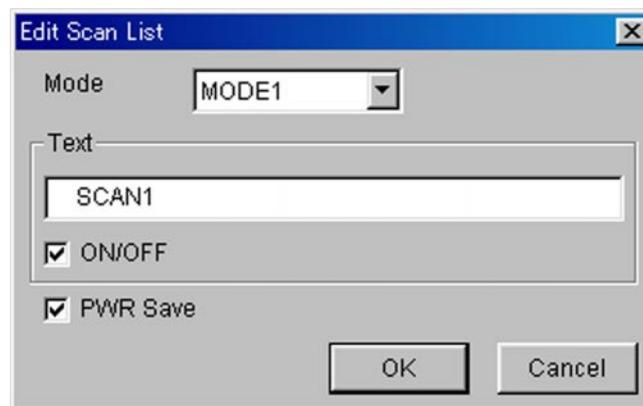
• Mode
Selects the scanning mode from Scan OFF, MODE 1, MODE 2 and MODE 3.

Scan OFF: Scan function cannot be controlled from the transceiver keypad.

MODE 1 : Normal scan. Scans all checked channels. The scan proceeds in sequence from lower to higher channel number.

MODE 2 : Priority scan. The priority A channel is monitored every fixed time period during scan (depending on version), or every specified time period programmed in the **Stop Timer** in *8-2 SCAN SETTING* (p. 44), during pause. The busy or paused channel is retained when scan is cancelled.

MODE 3 : Priority scan. Same scanning sequence as MODE 2 above. The priority channel is retained when scan is cancelled.

The scanning channels are selected in **Scan— 1–10** in *4/5 MEMORY CHANNEL* (LMR; p. 25/PMR; p. 31).

The priority A channel is selected in **CH Atr** in *4/5 MEMORY CHANNEL* (LMR; p. 23/PMR; p. 29).

Go to Stop Timer

Go to Scan— 1–10— LMR

Go to Scan— 1–10— PMR

Go to CH Atr— LMR

Go to CH Atr— PMR

• Text
Enters up to a 12-character text to indicate messages, etc. during scanning.

The usable characters are A–Z, a–z, 0–9, $, ', (,), –, /, <, =, >, @, [, \,], _, {, |, } ~ and user original characters.

When entering user original characters, enter '%' and the desired thumbnail number A to P (capital letter only).

Programming example:
When entering original character's thumbnail number C, enter as '%C.'

When no text is programmed, or "OFF" is selected (not checked) in the **Text— ON/OFF** as follows, the scanning channel text or number is scrolled.

User original characters are programmed in *3-6 CHARACTER EDITOR* (p. 22).

Go to 3-6 CHARACTER EDITOR

• Text— ON/OFF
Click the check-box to indicate the text, programmed in **Text** as above, during scan.

-The "✔" mark appears in the check-box when checked.

• PWR Save
Click the check-box to activate the power save function during scan.

-The "✔" mark appears in the check-box when checked.

Total scanning speed is decreased when the function is activated.

8-2 SCAN SETTING

• **Stop Timer**
Enters the time period for scan pausing on a busy channel (watching interval) when receiving a signal in scan mode 2 or 3 (priority scan), specified in **Mode** in *8-1 SCAN LIST* (p. 43).

<div style="background:green">**Go to Mode**</div>

• **Resume Timer**
Enters the time period for resuming scanning after signal disappears.

• **Power ON Scan**
Click the check-box to activate the automatic scan start capability at power ON.
  -The "✔" mark appears in the check-box when checked.

Also, automatically restarts scanning even once scanning is cancelled by call transmission, reception, or manually, etc., after a specified time has passed when the signal disappears, or key operation is finished when the power ON scan function is activated.

🖉 When SmarTrunk ON/OFF is selected for the editing bank in **CH Atr** in *4/5 MEMORY CHANNEL* (LMR; p. 23/PMR; p. 29), the box must be blank.

The scanning restart condition is selected in **Auto Reset** in *4/5 MEMORY CHANNEL* (LMR; p. 27/PMR; p. 37), and the time period is programmed in the **Auto Reset Timer A, Auto Reset Timer B** and the **Inactive Timer** (PMR only) in *3-3 COMMON 1* (p. 16).

<div style="background:green">**Go to CH Atr— LMR**</div>
<div style="background:green">**Go to CH Atr— PMR**</div>
<div style="background:green">**Go to Auto Reset— LMR**</div>
<div style="background:green">**Go to Auto Reset— PMR**</div>
<div style="background:green">**Go to Auto Reset Timer A, Auto Reset Timer B**</div>
<div style="background:green">**Go to Inactive Timer**</div>

• **Auto CH Call**— *PMR only*
Click the check-box to activate the automatic clear channel searching capability when [Call] switch is pushed (call transmission).
  -The "✔" mark appears in the check-box when checked.

When [Call] switch is pushed while the channel without 5-tone is busy, the transceiver starts scanning, then transmits the previously transmitted 5-tone code after a clear channel is found.

The [Call] switch is assigned in *3-1 KEY& DISPLAY ASSIGN* (p. 8).

<div style="background:green">**Go to Call**</div>

9-1 RX CODE CHANNEL

CH	1st	2nd	Group Call	Text	Bell	ANS	Beep	Auto TX	Stun	Scan
1	250.5	3300.0	2nd	CALL1	ON	OFF	PiRo(single)	OFF	OFF	Null
2	250.5	3300.0	2nd	CALL2	ON	OFF	PiRo(single)	OFF	OFF	Null
3	250.5	3300.0	2nd	CALL3	ON	OFF	PiRo(single)	OFF	OFF	Null
G	-----	-----	---	GROUP	Blink	OFF	PiPi(single)	---	OFF	Null

Memory Channel Screen indication

2-tone code frequency can be programmed as the operating frequency, or other conditions, etc. And up to 3 different 2-tone codes are programmable for flexible selective calling.
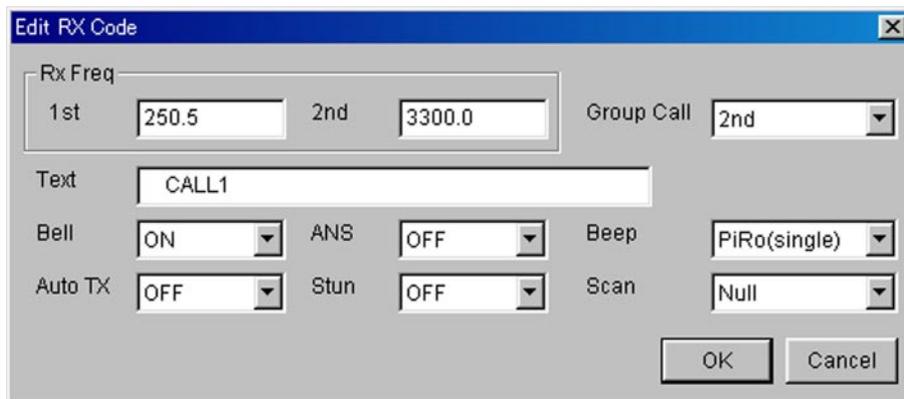
• Rx Freq— 1st, 2nd
Enter the tone code frequency within 250 to 3300 Hz range for each 1st and 2nd.

The nearest available frequency is selected automatically.

• Group Call
Selects which tone digit, 1st or 2nd, is used for the group code.

• Text
Enter up to a 12-character text to indicate messages, etc., when a matched 2-tone code signal is received.

The usable characters are A–Z, a–z, 0–9, $, ', (,), –, /, <, =, >, @, [, \,], _, {, |, } ~ and user original characters.

When entering user original characters, enter '%' and the desired thumbnail number A to P (capital letter only).

Programming example:
When entering original character's thumbnail number C, enter as '%C.'

User original characters are programmed in *3-6 CHARACTER EDITOR* (p. 22).

Go to 3-6 CHARACTER EDITOR

• Bell
Selects the bell indicator condition when receiving a matched 2-tone from Null, OFF, ON and Blink.

Null : The bell indicator condition is not changed even when a matched 2-tone code is received.

OFF : The bell indicator goes off.

ON : The bell indicator appears until operation of a key.

Blink : The bell indicator blinks until operation of a key.

• Auto TX
Selects the automatic transmit capability when a matched 2-tone code is received.

The transmitting time period is programmed in **Auto TX Timer** in *9-3 2TONE SETTING* (p. 48).

Go to Auto TX Timer

• ANS
Turns the answer back function ON and OFF.

The function transmits a 1 kHz single tone for 2 sec. when receiving a matched 2-tone.

9-1 RX CODE CHANNEL— continued
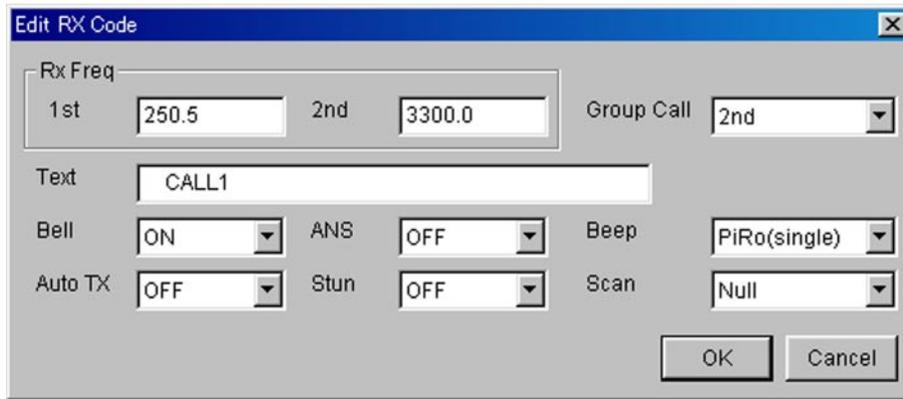
• Stun
Selects the transceiver's basic condition when a matched 2-tone code is received from OFF, Kill and Stun.

OFF : The transceiver can be used continuously.

Kill : The transceiver cannot be used. Cloning is necessary to activate the transceiver.

Stun : A message, "SORRY", appears and the transceiver cannot be used. To use the transceiver, turn power OFF and ON again. At this time, password input is necessary if the power ON password is programmed in **User Password** in *3-3 COM-MON 1* (p. 16).

Go to User Password

• Beep
Selects the beep type when matched 2-tone code is received from Null, OFF, Pi(single), PiPi(single), PiRo(single), Pi(repeat), PiPi(repeat), and PiRo(repeat).

Null : Beep emission (or non emission) is retained even when matched 2-tone is received.

OFF : Repeated beep emission is turned OFF.

Pi(single) : 1 high beep once.

PiPi(single) : 2 high beeps once.

PiRo(single) : 1 high and 1 low beep 3 times.

Pi(repeat) : 1 high beep repeated at the specified time period.

PiPi(repeat) : 2 high beeps repeated at the specified time period.

PiRo(repeat) : 1 high, 1 low beep 3 times, repeated at the specified time period.

The repeating time period is programmed in the **Beep Repeat Timer** in *9-3 2TONE SETTING* (p. 48).

Go to Beep Repeat Timer

• Scan
Selects the scanning condition when a matched 2-tone code is received from Null, Cancel and Start.

Null : Scan condition is unaffected.

Cancel : Cancels the scan.

Start : Starts the scan.

The cancelled or started scan type and conditions are specified in *8 SCAN LIST* (pgs. 43, 44), and the scanning can be restarted or cancelled via [Scan A Start/Stop] or [Scan B Start/Stop] switches, assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 6).

Go to 8 SCAN LIST

Go to Scan A Start/Stop, Scan B Start/Stop

9-2 TX CODE

• **Code Type**

Selects the transmit 2-tone code type from Individual and Group.

  Individual : Transmits both 1st and 2nd tone codes.

  Group   : Transmits 1st tone code only.

• **1st Tone/2nd Tone— Frequency**

Enter the tone code frequency within 250 to 3300 Hz range each for 1st and 2nd.

The nearest available frequency is selected automatically.

• **1st Tone/2nd Tone— Period**

Enters the time period for each digit tone signal emission length.

9-3 2TONE SETTING
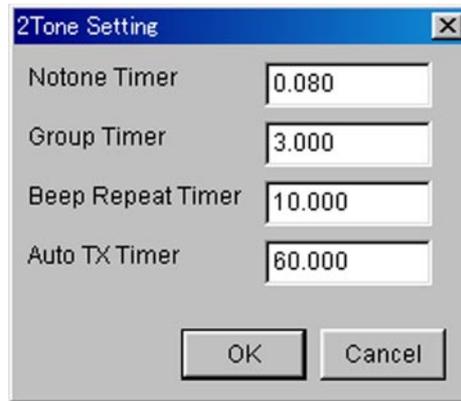
• **Notone Timer**
Enters the time period with the maximum acceptable tone interval between 1st and 2nd code detection.

• **Group Timer**
Enters the time period for group tone decoding.
The transceiver reads the tone as a group code in the case that the received tone is longer than the programmed time period.

• **Beep Repeat Timer**
Enters the beep emission repeating time period.
When 'Pi(repeat)', 'PiPi(repeat)' or 'PiRo(repeat)' is selected in **Beep** in *9-1 RX CODE CHANNEL* (p. 46), beeps are repeated at this period.

Go to Beep

• **Auto TX Timer**
Enters the time period for automatic transmit function when a matched 2-tone code is received.
The automatic transmit function is programmed in **Auto TX** in *9-1 RX CODE CHANNEL* (p. 45).

Go to Auto TX

10-1 RX CODE CHANNEL

CH	RX Code	Text or ID-Dec	Bell	Emer Cancel	ABC	Beep	Auto TX	Aud Mode	Stun	Scan
1	11111	CALL1	ON	Null	OFF	PiRo(single)	OFF	Aud	OFF	Null
2	22222	CALL2	ON	Null	OFF	PiRo(single)	OFF	Aud	OFF	Null
3	33333	CALL3	ON	Null	OFF	PiRo(single)	OFF	Aud	OFF	Null
4	44444	CALL4	ON	Null	OFF	PiRo(single)	OFF	Aud	OFF	Null
5	55555	CALL5	ON	Null	OFF	PiRo(single)	OFF	Aud	OFF	Null
6	66666	CALL6	ON	Null	OFF	PiRo(single)	OFF	Aud	OFF	Null
7	77777	CALL7	ON	Null	OFF	PiRo(single)	OFF	Aud	OFF	Null
8	88888	CALL8	ON	Null	OFF	PiRo(single)	OFF	Aud	OFF	Null
G	-----	GROUP	Blink	Null	---	PiPi(single)	---	Aud	OFF	Null

Memory Channel Screen indication

• **RX Code**

Enter up to a 7-digit code for receive 5-tone code.

When entering "+" instead of number(s), the digit(s) are used for the status function, which indicates a number message. Any number is accepted for decoding and is indicated on the display instead of text or decoded ID as programmed in the **Text or ID-Dec** as follows, when receiving the call.

Up to a 7-digit DTMF code for receive can be programmed. In this case, DTMF must be selected in **5TONE Signaling— Form** in *5 MEMORY CHANNEL* (p. 34).

Go to 5Tone Signaling— Form

• **Text or ID-Dec— Text**

Enter up to a 12-character text for indication when a matched 5-tone/DTMF code is received.
To display the text when matched 5-tone code is received, the **ID-Dec** as at right must be blank.

The usable characters are A–Z, a–z, 0–9, $, ', (,), –, /, <, =, >, @, [, \,], _, {, |, } ~ and user original characters.

When entering user original characters, enter '%' and the desired thumbnail number A to P (capital letter only).

• *Text or ID-Dec— Text— continued*

Programming example:

When entering original character's thumbnail number C, enter as '%C.'

User original characters are programmed in *3-6 CHARACTER EDITOR* (p. 22).

Go to 3-6 CHARACTER EDITOR

• **Text or ID-Dec— ID-Dec**

Click the check-box to activate the ID decode capability to indicate the received ID code on the LCD, instead of the text programmed in **Text** as at below left, when a matched 5-tone/DTMF code is received.

-The "✔" mark appears when the ID decode capability is activated.

10-1 RX CODE CHANNEL— Continued

• **Bell**

Selects the bell indicator condition when a matched 5-tone/DTMF code is received from Null, OFF, ON and Blink.

Null : The bell indicator condition is not changed, even when a matched 5-tone code is received.

OFF : The bell indicator goes off.

ON : The bell indicator appears until operation of a key.

Blink : The bell indicator blinks until operation of a key.

• **ABC**

Selects the answer back call capability from OFF, STN, SGL and 1–32.

OFF : No answer back operation.

STN : Transmits the station code which is selected with the channel assigned code.

SGL : Transmits a 1 kHz single tone for 2 sec.

1–32 : Transmits the selected channel's 5-tone/DTMF code, programmed in **TX code** in **10-2 TX CODE CHANNEL** (p. 52), regardless of the operating channel.

Go to TX Code

• **Aud Mode**

Selects the transceiver's receiving condition when a matched 5-tone/DTMF code is received from Null, IN_A and Aud.

Null : Retains audible status

IN_A : Inaudible mode is selected.

Aud : Audible mode is selected.

When the DTMF decoder is used as a pager function, Aud selection is recommended.

• **Scan**

Selects the scanning condition when a matched 5-tone/DTMF code is received from Null, Cancel and Start.

Null : Scan condition is unaffected.

Cancel : Cancels the scan.

Start : Starts the scan.

• **Emer**

Select to enable the emergency repeat call cancel when a matched RX code is received.

Once the Emergency Repeat Call is performed, the transceiver repeatedly transmits the emergency call at specified intervals until the selected cancelling condition is performed.

10-1 RX CODE CHANNEL— Continued
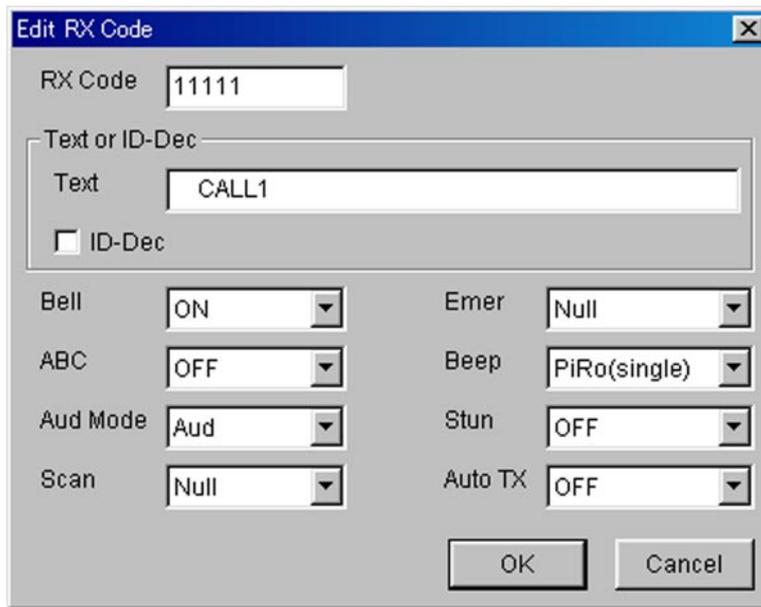
• **Beep**

Select the beep type when a matched 5-tone/DTMF code is received from Null, OFF, Pi(single), PiPi(single), PiRo(single), Pi(repeat), PiPi(repeat), and PiRo(repeat).

Null	: Beep emission (or non emission) is retained even when matched 5-tone is received.
OFF	: Beep emission is turned OFF.
Pi(single)	: 1 high beep once.
PiPi(single)	: 2 high beeps once.
PiRo(single)	: 1 high and 1 low beep 3 times.
Pi(repeat)	: 1 high beep repeated at the specified time period.
PiPi(repeat)	: 2 high beeps repeated at the specified time period.
PiRo(repeat)	: 1 high, 1 low beep 3 times, repeated at the specified time period.

The repeating interval is programmed in the **Beep Repeat Timer** in *10-5 5TONE SETTING* (p. 58).

Go to Beep Repeat Timer

• **Stun**

Selects the transceiver's basic condition when a matched 5-tone code is received from OFF, Kill, and Stun.

OFF	: The transceiver can be used continuously.
Kill	: The transceiver cannot be used. Cloning is necessary to activate the transceiver.
Stun	: A message, "SORRY", appears and the transceiver cannot be used. To use the transceiver, turn power OFF and ON again. At this time, password input is necessary.

The password is programmed in **User Password** in *3-3 COMMON 1* (p. 16).

Go to User Password

• **Auto TX**

Select automatic transmit capability when a matched 5-tone code is received.

The transmitting time period is programmed in **Auto TX Timer** in *10-5 5TONE SETTING* (p. 58).

Go to Auto TX Timer

10-2 TX CODE CHANNEL

CH	TX Code	Input Digit	Text	Update	ABC-dec	ABC-Aud	Sel	
1	11111	_45_		ON	OFF	OFF	ON	
2	22222	_45_		ON	OFF	OFF	ON	
3	33333	_45_		ON	OFF	OFF	ON	
4	44444	_45_		ON	OFF	OFF	ON	
5	55555	_45_		ON	OFF	OFF	ON	
6	66666	_45_		ON	OFF	OFF	ON	
7	77777	_45_		ON	OFF	OFF	ON	
8	88888	_45_		ON	OFF	OFF	ON	
9	99999	_45_		ON	OFF	OFF	ON	
10	00000	_45_		ON	OFF	OFF	ON	
11	00000	_45_		ON	OFF	OFF	ON	
12	00000	_45_		ON	OFF	OFF	ON	

Memory Channel Screen indication

Edit TX Code

TX Code: 11111

Text:

Input Digit
☐ 1 ☐ 2 ☐ 3 ☑ 4 ☑ 5 ☐ 6 ☐ 7

☑ Update   ABC ☐ Dec ☐ Aud   ☑ Sel

OK   Cancel

• TX Code

Enter up to a 7-digit code for transmitting 5-tone/DTMF station, ID or repeater codes. Up to 32 channels are available.

Usable codes are [0]–[9], [A]–[E] (or [#]) and group code ([G] or [✱]).

The programmed TX code in CH No. 32 and 31 are normally used for the reset code 1 and 2, respectively, and it is automatically transmitted when In A+R1, In A+R2, Both+R1 or Both+R2 is selected for the mute condition selection after [Moni(Audi)] switch action in **Switch Action— Moni** in *5 MEMORY CHANNEL* (p. 32).

The programmed TX codes in CH No. 30 (Call A) and 29 (Call B), are normally used for the call transmission A and B via [Call A (Code 30)] or [Call B (Code 29)] switch operation, respectively.

[Call A (Code 30)] or [Call B (Code 29)] switch is assigned in *3-1 KEY & DISPLAY ASSIGN* (p. 9).

> **Go to Switch Action— Moni**

> **Go to Call A (Code 30), Call B (Code 29)**

• Text

Enter up to a 12-character text channel name, usage indication, etc.

The programmed text appears instead of the TX code channel number during TX code selection when 'MR CH+TX CODE CH' is selected in **MR/Code Display** in *3-1 KEY & DISPLAY ASSIGN* (p. 14).

The usable characters are A–Z, a–z, 0–9, $, ', (,), –, /, <, =, >, @, [, \,], _, {, |, } ~ and user original characters.

When entering user original characters, enter '%' and the desired thumbnail number A to P (capital letter only).

Programming example:
When entering original character's thumbnail number C, enter as '%C.'

User original characters are programmed in *3-6 CHARACTER EDITOR* (p. 22).

> **Go to MR/Code Display**

> **Go to 3-6 CHARACTER EDITOR**

• Input digit

Click the check-box to select digits for TX code manual input capability in relation to [TX code] switch assignment.

-The "✔" mark appears in the check-box when checked.

The checked digits only can be entered.

[TX code] switch is assigned in the *3-1 KEY & DISPLAY ASSIGN* (p. 9).

> **Go to TX Code**

10-2 TX CODE CHANNEL— continued
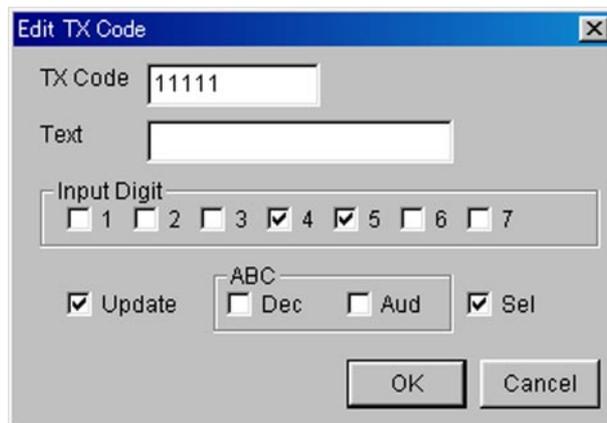
• **Up-Date**

Click the check-box to enable TX code overwrite capability after manual code input.

-The "✔" mark appears in the check-box when checked.

Original transmit 5-tone codes are overwritten when checked, however, the input TX code is used for temporary operation only when blank.

• **ABC— Dec**

Click the check-box to activate the answer back code decode/indication capability.

-The "✔" mark appears in the check-box when checked.

The decoded answer back code is indicated when the specified TX code is used as the station code.

• **ABC— Aud**

Click the check-box to activate the automatic 5-tone/DTMF mute release capability.

-The "✔" mark appears in the check-box when checked.

When the function is activated, the transceiver releases a 5-tone/DTMF mute after an answer back code is received, when the TX code channel is used.

Both the **SW Action— Call** and **SW Action— PTT** in *5 MEMORY CHANNEL* (p. 34) must be turned OFF when this function is activated.

Go to SW Action— Call, PTT

• **Sel**

Click the check-box to enable the TX code channel selection from the transceiver's keypad capability for flexible call operation.

-The "✔" mark appears in the check-box when checked.

Checked channels can only be selected/accessed via [CH Up], [CH Down] with [TX Code], or, [TX Code CH Up] or [TX Code CH Down] switch operation.

[CH Up], [CH Down], [TX Code], [TX Code CH Up] or [TX Code CH Down] switches are assigned in *3-1 KEY & DISPLAY ASSIGN* (pgs. 6, 9, 10).

Go to CH Up, CH Down

Go to TX Code

Go to TX Code CH Up, TX Code CH Down

10-3 5TONE FORMAT

Format	Tone Period	Notone Timer	Tone Length
USER	0.100	0.160	0.164
CCIR	0.100	0.160	0.164
ZVEI1	0.070	0.100	0.109
ZVEI2	0.070	0.100	0.109
DZVEI	0.070	0.100	0.109
EEA	0.040	0.060	0.066
EEA2	0.040	0.060	0.066
DAPL	0.100	0.160	0.164
EIA	0.033	0.060	0.066
DTMF	0.050	0.080	-----

Memory Channel Screen indication

Edit Format

Tone Period `0.100`

Notone Timer `0.160`

Tone Length `0.164`

[OK] [Cancel]
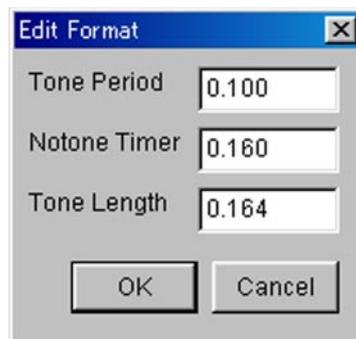
• Tone Period

Enters the time period for each digit tone signal emission length within 0–0.255 sec. in 0.001 sec. steps.

A longer period/emission length programmed in **TX Code CH— Long Tone Timer** in *10-5 5TONE SETTING* (p. 56) has priority for the 1st digit when long tone is activated.

The long tone is selected in the **5Tone Signaling— Long** in *5 MEMORY CHANNEL* (p. 35).

Go to TX Code CH— Long Tone Timer

Go to 5Tone Signaling— Long

• Notone Timer

Enters the time period with the maximum acceptable tone interval between each code detection within 0.02–0.30 sec. in 0.01 sec. steps.

The following code is received as a different code when the receiving tone interrupts for more than the programmed time period.

Approx 1.5 times the tone period time, programmed as above, is recommended.

When too short a time period is programmed, the decode success ratio may be decreased according to weather condition, operating environment, etc.

• Tone Length

Enters the time period with the maximum acceptable tone period for each code detection within 0–2.327 sec. in 0.001 sec steps.

The following code is received as a different code when the receiving tone period is longer than the programmed time period.

Approx 1.5 times the tone period time, programmed as at left, is recommended.

10-4 USER TONE

No.	Encode	Decode Low	Decode High	
0	1981	1921	2041	
1	1124	1090	1158	
2	1197	1161	1233	
3	1275	1236	1314	
4	1358	1317	1399	
5	1446	1402	1490	
6	1540	1493	1587	
7	1639	1589	1689	
8	1747	1694	1800	
9	1860	1804	1916	
A	2401	2328	2474	
B	930	902	958	
C	2246	2178	2314	
D	991	961	1021	
E	2109	2045	2173	

Memory Channel Screen indication

• Encode
Enters the specialized tone frequency, relative to the tone number, for transmission within 400–2998 Hz range.
The nearest available frequency is automatically selected.

• Auto
Click the check-box to set the recommended decode frequency range against the encode frequency automatically.

• Decode— Low, High
Enters a desired tone frequency for each Low and High columns to specify the decodable frequency range as the tone code, programmed in **Encode** as at left.

Both Low and High frequencies cannot be programmed when Auto as at left is checked.

10-5 5TONE SETTING
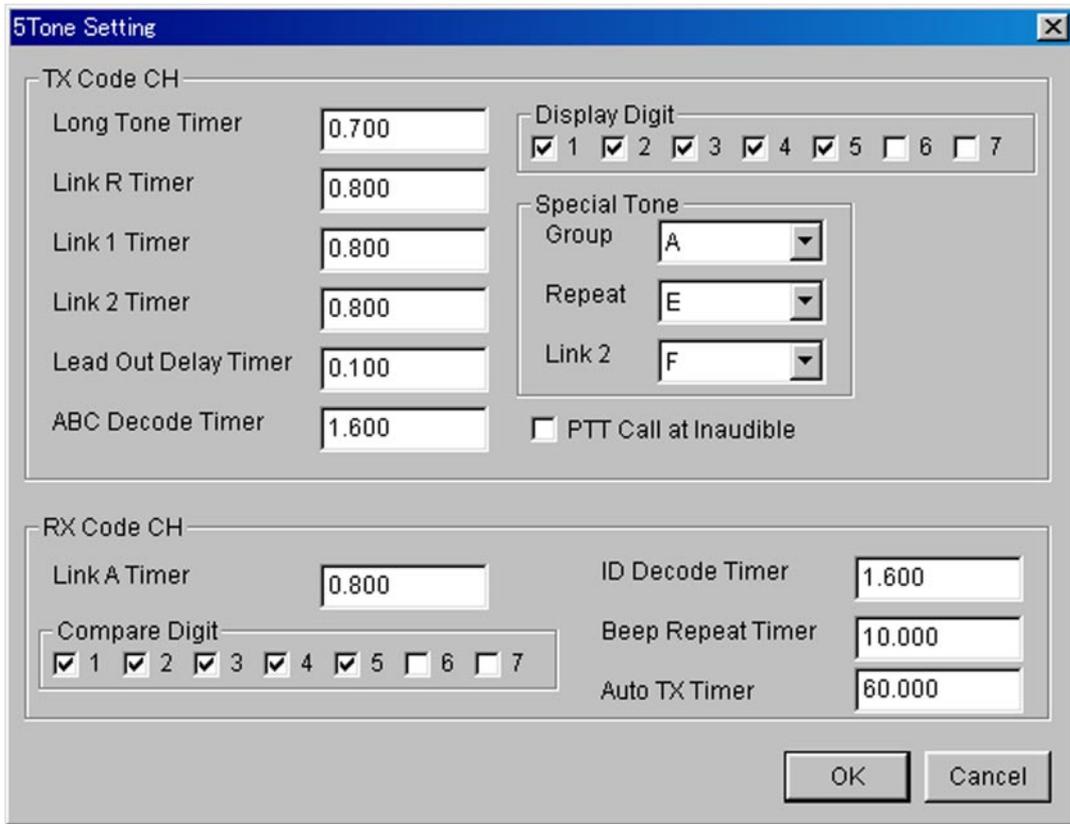
• TX Code CH— Long Tone Timer
Enters the time period for the 1st digit code emission length when the long tone function is specified in **5Tone Signaling— Long** in *5 MEMORY CHANNEL* (p. 35).

Go to 5Tone Signaling— Long

• TX Code CH— Link R, Link 1, Link 2,
Lead out Delay Timers
Enters the time period for unmodulated signal length before emitting the 1st 5-tone code prior to returning to receive mode, as well as between each code.

• Link R, 1, 2 and Lead out Delay Timer
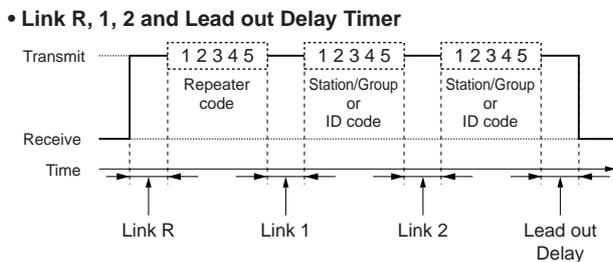
• TX Code CH— ABC Decode Timer
Enters the time period for answer back decode. The timer count is shown in the following diagram.

• ABC Decode Timer
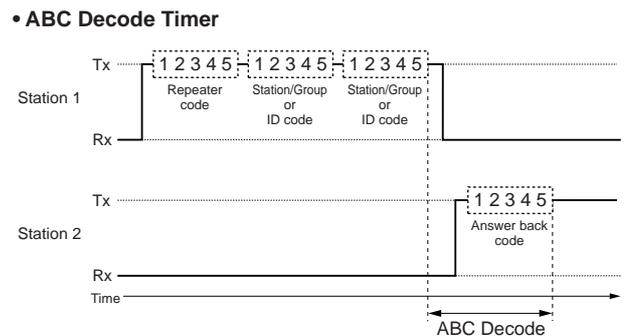
• Display Digit
Select viewable 5-tone code digits on the display.

The selected viewable digits condition is also applied to transmit (station/group), received ID and answer back code indications programmed in **TX Code** in *10-2 TX CODE CHANNEL* (p. 52), **Text or ID-Dec— ID-Dec** in *10-1 RX CODE CHANNEL* (p. 49) and **ABC— Dec** in *10-2 TX CODE CHANNEL* (p. 53), respectively.

Go to TX Code

Go to Text or ID-Dec— Text, ID

Go to ABC— Dec

10-5 5TONE SETTING— continued
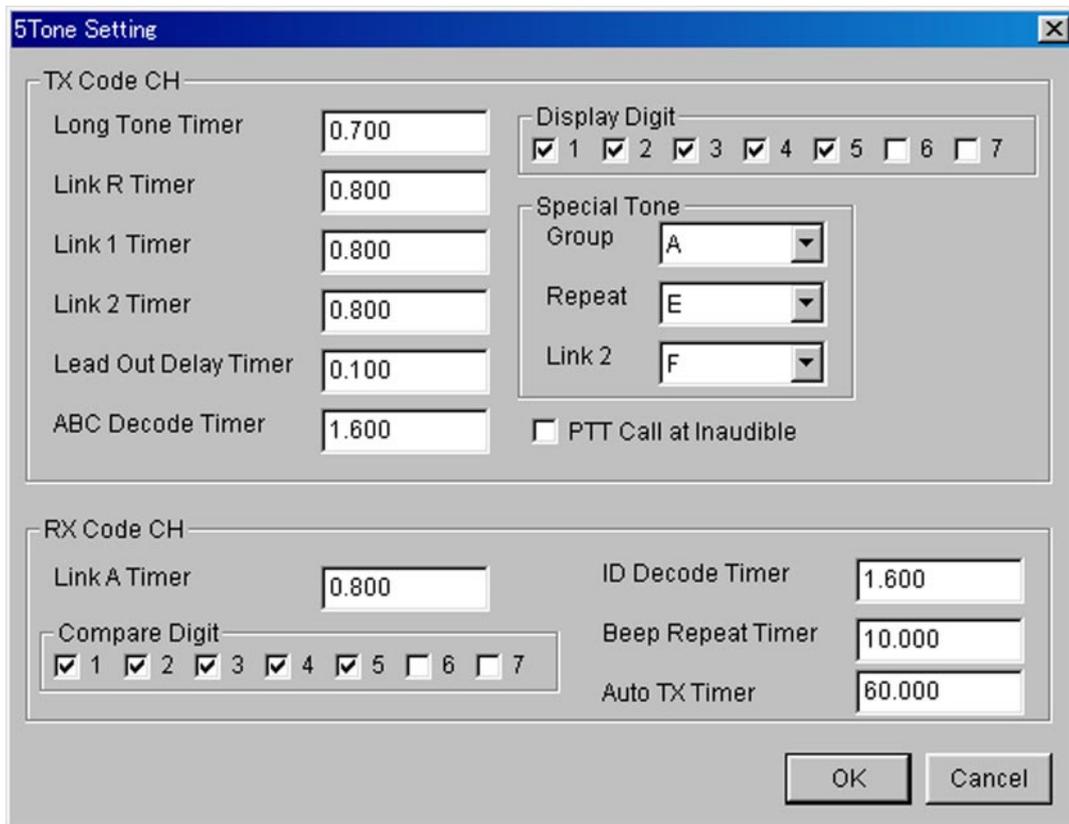
• Special Tone— Group, Repeat, Link 2

Select a special tone code instead of Group, Repeat code and Link 2 timer.

Group : The decoder accepts this code regardless of the programmed code.

Repeat : Used when the same codes are repeated. (e.g. 11111 –> 1E1E1)

Link 2 : Emits the code instead of no modulation between station and ID codes (for link 2 timer).

Normally, from [A]–[F] code is assigned for each special tone.

• PTT Call at Inaudible

Click the check-box to enable the call operation with [PTT] switch while the 5-tone mute is activated.

OFF must be selected with the **Switch Action— PTT** in *5 MEMORY CHANNEL* (p. 34) when checked.

Go to Switch Action— PTT

• RX Code CH— Link A Timer

Enter the non-modulated time period before transmitting an answer back call.

• Link A Timer Timing diagram
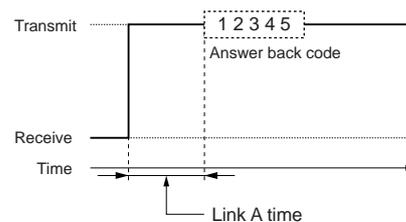
• RX Code CH— ID Decode Timer

Enter the time period for decoding an ID code completely when the ID decode capability is activated, specified in **Text or ID-Dec— ID-Dec** in *10-1 RX CODE CHANNEL* (p. 49).

• ID decode Timer
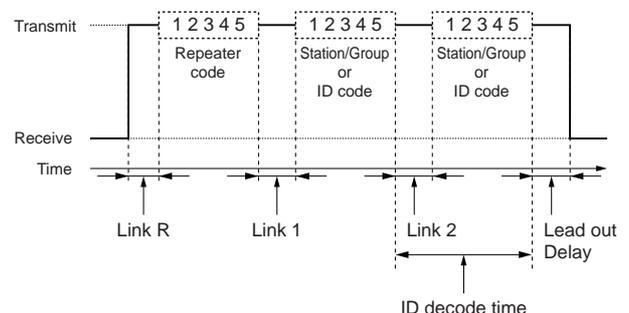
Go to Text or ID-Dec— ID-Dec

10-5 5TONE SETTING— *continued*

• **RX Code CH— Compare Digit**
Click the check-box to select comparative digits for decoding (ignores blanked digit/s for the decode actions)

When a "+" (status code) is programmed in the **RX Code** in *10-1 RX CODE CHANNEL* (p. 49), the digit is not compared even if selected.

Go to RX Code

• **RX Code CH— Beep Repeat Timer**
Enter the time period for repeated beep interval for Pi(repeat), PiPi(repeat), and PiRo(repeat) beep type selection in **Beep** in *10-1 RX CODE CHANNEL* (p. 51).

Go to Beep

• **Auto TX Timer**
Enters the time period for automatic transmit function when a matched 5-tone code is received.
The automatic transmit function is programmed in **Auto TX** in *10-1 RX CODE CHANNEL* (p. 51).

Go to Auto TX

■ *This programming is necessary when an optional UT-105 SmarTrunk II Logic Board is installed. Programming operation methods are also written in the instruction manual for UT-105.*

11-1 SOFTWARE INSTALLATION

① Boot up Windows®. (Quit all applications when Windows is running.)
② Insert the CS-F30G disk into the appropriate CD-ROM drive.
③ Select 'Run' from the [Start] menu.
④ Type the setup program name with full path name, then press the [Enter] key.
　(e.g. D:\csut105\disk1\setup [Enter])
⑤ Follow the prompts.
⑥ Program group 'CS-UT105' appears in the 'Programs' folder of the start menu.

11-2 PROGRAMMING RECOMMENDATION

When programming/operating with the SmarTrunk II, please re-confirm the following condition of each item programmed with the CS-F30G.

• Priority, Emergency channel
Do not specify both priority and emergency channels in the bank for SmarTrunk II operation.
The priority and emergency channels are specified in **CH Atr** in *4/5 MEMORY CHANNEL* (LMR; p. 23/PMR; p. 29).

Go to CH Atr— LMR
Go to CH Atr— PMR

• Frequency
Operating frequencies must be programmed from channel 1 without a blank. (LMR; p. 24/PMR; p. 30)

Go to Frequency— RX and TX— LMR
Go to Frequency— RX and TX— PMR

• Power Save
Deactivate the power save function. (LMR; p. 28/PMR; p. 39).

Go to PWR Save— LMR
Go to PWR Save— PMR

• TOT
Deactivate the TOT function (LMR; p. 28/PMR; p. 39).

Go to TOT— LMR
Go to TOT— PMR

• Scan
Do not specify the scan list. (LMR; p. 25/PMR; p. 31)

Go to Scan— 1–10— LMR
Go to Scan— 1–10— PMR

• Log IN/OFF
Select OFF. (LMR; p. 27/PMR; p. 36)

Go to Log IN/OFF— LMR
Go to Log IN/OFF— PMR

• Power ON Scan
Deactivate the power ON scan function. (p. 44)

Go to Power ON Scan

11-3 SCREEN MENU OPERATION— Speed Dial

• Speed Dial— 0–9

Enter up to a 16-digit telephone or subscriber number for simple and quick dialling operation.

• Turbo SpeeDial— A, B, C, D

Enter up to a 16-digit telephone or subscriber number for simple and quick dialling operation.

The programmed number is immediately recalled and transmitted by pushing the [Turbo SpeeDial A], [Turbo SpeeDial B], [Turbo SpeeDial C] or [Turbo SpeeDial D] switch assigned in *3-1 KEY & DISPLAY ASSIGN* screen (p. 12).

11-4 SCREEN MENU OPERATION— Configuration

• **Primary Code**
Enters a specified 4-digit primary code given from the system.

• **Secondary Code**
Enters a specified 4-digit secondary code given from the system.

• **Lower Block Decode**
Enters a specified 4-digit code for lower block decode capability given from the system.

• **Upper Block Decode**
Enters a specified 4-digit code, or turns off the upper block decode capability given from the system.

The decode code must be in the range of less than +19 from the code programmed in the **Lower Block Decode** as above.

When the code "0000" is programmed in the **Lower Block Decode** as above, "OFF" is automatically programmed in this setting.

• **Five Digit Access Code**
Enters a specified 5-digit access code given from the system.

• **Trunking System ID Number**
Enters a specified 2-digit trunking system ID number given from the system.

• **System Tone**
Selects a specified system tone code to detect trunking channel condition (busy or clear) from 0–6, given from the system.

The same system tone must be programmed when 'System Tone' is selected in **Busy Channel Detect** as follows.

• **Busy Channel Detect**
Selects the specified busy channel detection method from the Carrier and System Tone given from the system.

• **Priority Subscriber Enable**
Selects the Priority Subscriber Enable capability from ON and OFF.

• **Fleet Dispatch Mode**
Selects the specified fleet dispatch mode availability from ON and OFF, given from the system.

• **Emergency Call Override**
Selects emergency call override capability from ON and OFF.

• **Clear Channel Alerting Mode**
Selects alerting capability when a trunking channel is cleared from ON and OFF.

• **Memory Speed-dialling Programming**
Selects Speed Dial and Turbo SpeeDial memory programming capability from the transceiver's keypad from ON and OFF.

• **Group Code— 0–15**
Enter a 4-digit group code given from the system for simple and quick group call operation.

*All the other programming operation methods are the same as CS-F30G.

12 PROGRAMMING for LTR® TRUNKING operation

■ *This programming is necessary when an optional UT-111* TRUNKING UNIT *is installed. For details of programming operation methods, ask a system operator.*

12-1 SOFTWARE INSTALLATION

① Boot up Windows®. (Quit all applications when Windows is running.)
② Insert the CS-F30G disk into the appropriate CD-ROM drive.
③ Select 'Run' from the [Start] menu.
④ Type the setup program name with full path name, then press the [Enter] key.
   (e.g. D:\csut111\disk1\setup [Enter])
⑤ Follow the prompts.
⑥ Program group 'CS-UT111' appears in the 'Programs' folder of the start menu.

12-2 SCREEN MENU OPERATION— Global

• Five Digit Access Code
Enter the specified 5-digit access code given from the system.

• Scan Resume Timer (sec)
Enter the time period for switching the decoded group ID during group scan.

When the group ID code is decoded, the timer is renewed.

• Selective Call Timeout (sec)
Enter the stand-by time period from after the group ID code is decoded, and before the selective call code to be decoded, during the DTMF selective calling operation.

When the group ID code is decoded, the timer is renewed.

• DTMF Decoder ID
Enter an 8-digit ID code for the DTMF decoder.

• DTMF Decoder Kill ID
Enter an 8-digit ID code for the DTMF decoder kill function.
The decoder becomes deactivated when the matched DTMF code is received.

• TX Data Polarity, RX Data Polarity
Select the specified polarity for each transmit and receive data from + (Plus) and – (Minus), depending on the type of transceiver.

• TX Data Delay
Enter the specified transmit data delay within 0–255, depending on the type of transceiver.

12-3 SCREEN MENU OPERATION— System 1–10

| System1 | System2 | System3 | System4 | System5 | System6 | System7 | System8 | System9 | System10 |

Area Number
`0` ▼

Home Repeater
`1`

Priority Receive ID

Receive Block Decode Upper ID

Receive Block Decode Lower ID

Group Code	TX ID	RX ID	Scan	Inter-connect	Sel Call	Trans-pond	ANI
1			Yes	No	No	No	No
2			Yes	No	No	No	No
3			Yes	No	No	No	No
4			Yes	No	No	No	No
5			Yes	No	No	No	No
6			Yes	No	No	No	No
7			Yes	No	No	No	No
8			Yes	No	No	No	No
9			Yes	No	No	No	No
10			Yes	No	No	No	No

• Area Number
Selects the specified area number given from the system from 1 and 0.

• Home Repeater
Selects the specified home repeater number given from the system within 1–20.

• Priority Receive ID
Enters the specified priority receive ID given from the system.

• Receive Block Decode Upper ID, Lower ID
Enter each specified receive block decode ID for upper and lower given from the system.

• TX ID, RX ID
Enter a 3-digit ID code for both transmit and receive.

• Scan
Selects automatic scanning capability from Yes and No.

• Inter-connect
Selects inter-connect capability from Yes and No.

• Selective Call
Selects selective calling capability from Yes and No.

• Transponds
Selects answer back capability from Yes and No.

• ANI
Selects ANI (Automatic Numbering Identification) transmission capability from Yes and No.

*All the other programming operation methods are the same as CS-F30G.

13 DATA CLONING BETWEEN TRANSCEIVERS

■ *This operation is useful when cloning transceiver(s) with exactly the same setting, without a PC and programming software.*

■ REQUIRED EQUIPMENT

The following hardware is required:
• Two OPC-966 CLONING CABLES
• DB25 Male-Male cross cable (purchase locally)

■ CONNECTION

Connect each item as illustrated in the diagram at right.

░ **CAUTION:** Do not connect an antenna to the transceiver during cloning operation. Received signals may cause cloning errors.

OPC-966   OPC-966

DB25 Male-Male cross cable
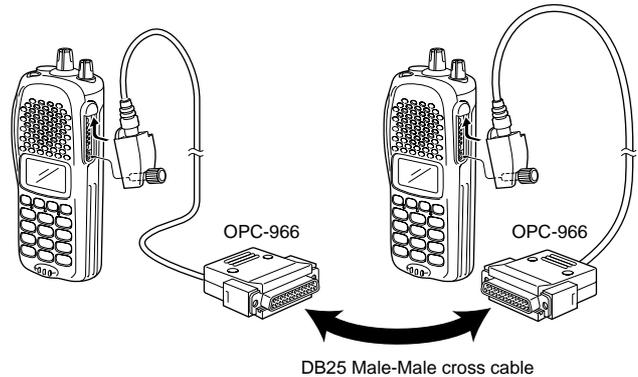
■ STARTING CLONING

① First, turn the power off once on the master transceiver.
② Turn the master transceiver power on while pushing and holding [F2] and [P0] switches.

③ Push [PTT] switch on the master transceiver to output cloning data to the sub transceiver.
(The sub transceiver receives cloning data automatically.)
④ Turn the power off then on again to enable return to operatable condition.

KEY operation 1

Keypad types   Non-keypad types
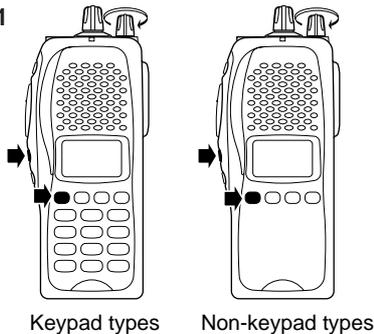
Transceiver indication

CLONE

Turn the master transceiver's power on while pushing and holding [F2] and [P0] switches to enter into cloning mode.

KEY operation 2

Keypad types   Non-keypad types
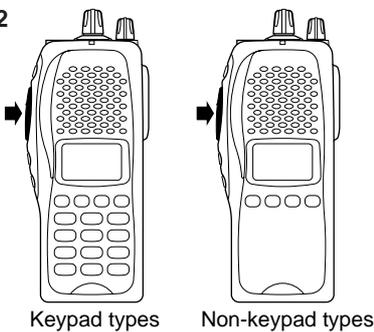
Transceiver indication

CLONE000

Push [PTT] switch to output programmed data to the sub transceiver.

Counts up

░ **NOTE:** The "Transceiver Data Out" must be checked for the master transceiver. Otherwise the cloning between transceivers cannot be done. The "Transceiver Data Out" is specified in *3-4 COMMON 2* (p. 19).

Go to Transceiver Data Out

■ **GENERAL**

The IC-F30G series transceiver can be installed with one of the following optional units.

UT-105 SmarTrunk II™ Logic Board

   Required to access SmarTrunk II™ network/subscriber.

UT-109 VOICE SCRAMBLER UNIT (Non-rolling type)

UT-110 VOICE SCRAMBLER UNIT (Rolling type)

   Required if secure communication is necessary.

   IMPORTANT!:

   Extra hardware setup is required **BEFORE** installing either voice scrambler unit.

   See *15-2 HARDWARE SETUP* (p. 66) for details.

   Go to 14-2 HARDWARE SETUP

UT-111 LTR® TRUNKING UNIT

   Required to access LTR® trunking network.

UT-113 MAN DOWN UNIT

   Required if man down function is used.

14-1 INSTALLATION

① Unscrew nut ⓐ, and remove the knobs.
② Unscrew screw ⓑ, 2 screws ⓒ then remove multi-connector cover and rear panel.
③ Unscrew 2 screws ⓓ, then remove multi-connector.
④ Unscrew 2 screws ⓔ then separate the chassis from the front panel in the direction of the arrow.
   Be careful!: A flat cable is connected between the MAIN unit on the chassis and front panel.
⑤ Install the desired optional unit. Insert tightly to avoid bad contact.

   NOTE:

   When installing UT-105 or UT-111, the unit **MUST BE** plugged into **SLOT 1**. Otherwise, the unit will not work correctly. (Other optional units can be plugged into either slot.)

⑥ Program the necessary information with the cloning software before operation. Please ask your dealer or system operator for details.

Optional unit(s)

Slot 2

Slot 1
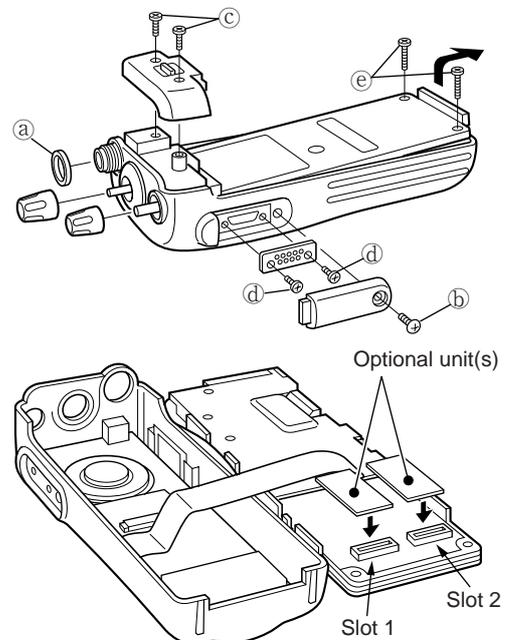
14 **OPTIONAL UNIT INSTALLATION**

14-2 HARDWARE SETUP

The following hardware setup is required before installing the optional UT-109/UT-110 VOICE SCRAMBLER UNIT, as the scrambler unit is installed into the microphone amplifier circuit (for transmission) and AF circuit (for reception).
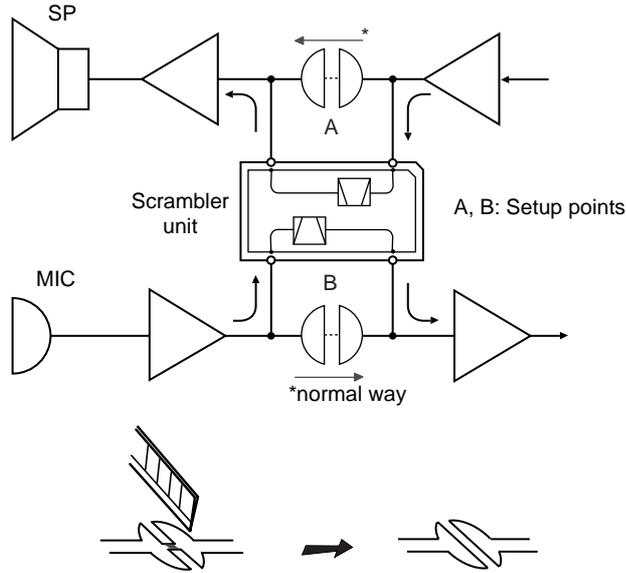
■ **Setup instruction**

① Turn the power OFF, then remove the battery pack.
② Disassemble the transceiver, as instructed in ①–④ in *15-1 INSTALLATION* (p. 65).
③ Cut the printed circuit patterns A and B on the PC board, described below.
④ Install the voice scrambler unit, as instructed in ⑤ in *15-1 INSTALLATION* (p. 65).

• **Setup points**
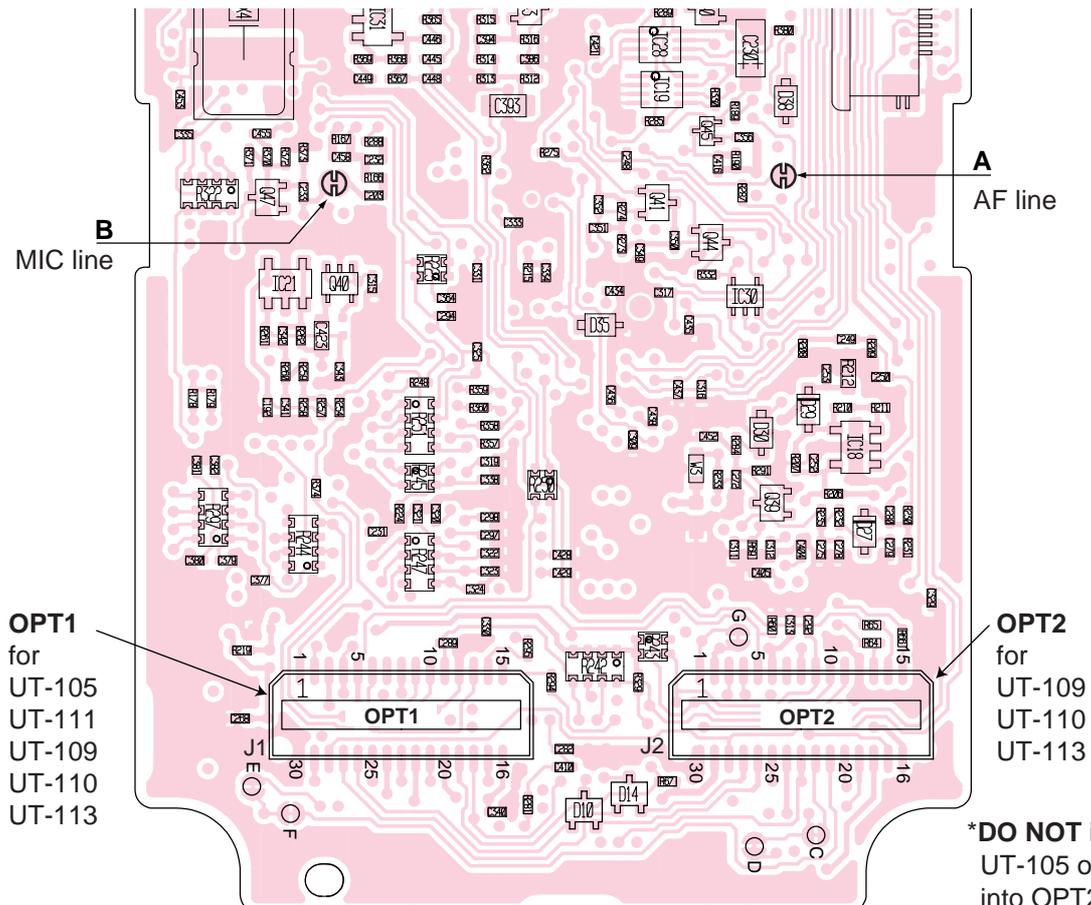
15-1 CPU REVISION INDICATION

The revision number of the CPU can be indicated on the LCD. It is convenient when confirming the CPU revision without a CS-F30G installed PC.

KEY operation

Keypad types　　　Non-keypad type

Turn the power on while pushing and holding [F2] and [P3].

■ Operation
Turn the power ON while pushing [F2] and [P3] switches.
- Clone comment and installed optional unit name are also indicated after the CPU revision number is indicated.
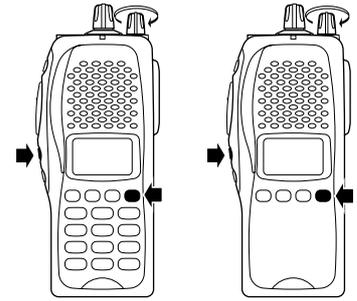
15-2 USER SET MODE

Some functions and items, specified in **3-2 SET MODE** (p. 15), can be set/adjusted from the transceiver's keypad.

KEY operation

Keypad types　　　Non-keypad type

Turn the power on while pushing and holding [F2] and [F3].

<div style="background:green">**Go to 3-2 SET MODE**</div>

■ Operation
① Turn the power ON while pushing [F2] and [F3].
　• "SETMODE" is displayed.
② Push [P0] for 1 sec. to enter into the *User Set Mode*.
③ Push [P0] momentary to select the desired function/item.
④ Push [F2] or [F3] to set/adjust the condition/value.
⑤ Repeat step ③ and ④ for other functions/items.
⑥ Push [P0] for 1 sec. to exit from the *User Set Mode*.

Count on us!

Icom Inc.

1-1-32 Kamiminami, Hirano-ku, Osaka 547-0003 Japan

Icom Inc.
1-1-32 Kamiminami, Hirano-ku, Osaka 547-0003 Japan