Translated from Japanese to English - www.onlinedoctranslator.com

Notice of specification changes

IC-7610/IC-7610M Version 1.40

Due to the specification change, the functions of this product have been changed as shown below.

additio DPD function

Added DPD (digital predistortion) function. You can reduce distortion of radio waves transmitted by this product (operation mode: SSB/SSB-DATA/AM/ AM-DATA).
Additionally, when used as an exciter for IC-PW2 (our linear amplifier), the distortion generated by the RF power amplifier is also reduced.

◇About the usage pattern of DPD function

There are two ways to use the DPD function.

◎Use only this product

This also applies when using the DPD function with the linear amplifier OFF (through state) when IC-PW2 is connected.

◎Use this product as an exciter for IC-PW2 during operation.

This is a form in which the linear amplifier is turned on when IC-PW2 is connected.

◇ To use the DPD function

DPD adjustment for each operational band for each usage type★is required.

★ By adjusting the ALC circuit reference voltage and gain within the FPGA, sudden fluctuations in the gain of the ALC circuit in the rear stage of the FPGA are suppressed to a minimum, allowing for optimal distortion correction.

*Re-adjustment is not necessary, but the adjustment may be deviated due to changes in characteristics over time.
We recommend periodic readjustment. Also, if you replace IC-PW2, you will need to perform the DPD interlock adjustment again.

◎Before adjusting the DPD of this product

¡Connect a dummy load (pseudo load: 50Ω) to the antenna connector of this product.
*DPD adjustment may not be possible when SWR is 1.5 or higher. there is.

¡Turn off the built-in tuner of this product. ¡If IC-PW2 is connected, remove it.

◎To connect this product to IC-PW2 and perform DPD interlock adjustment

¡After completing the DPD adjustment of this product in advance, IC-PW2 (ALC adjusted) Please connect to.
*If the ALC of IC-PW2 and the DPD of this product are not adjusted, the DPD Interlocking adjustment is not possible.

¡Connect a dummy load with sufficient input power capacity to the antenna connector of IC-PW2.
*When the SWR of this product and IC-PW2 is 1.5 or more, DPD adjustment may not be possible.

¡For DPD interlock adjustment and during use, connect IC-PW2 with a coaxial cable for DPD feedback (OPC-2501, sold separately).
*For details, please refer to the IC-PW2 instruction manual.

◇About the DPD adjustment screen

The "DPD Adjustment" screen is displayed in set mode.

MENU ≫ SET>DPD adjustment



IC-7610 individual adjustment

When adjusting the DPD of this product, the selection of the DPD adjustment band and the individual adjustment status of each band are displayed.

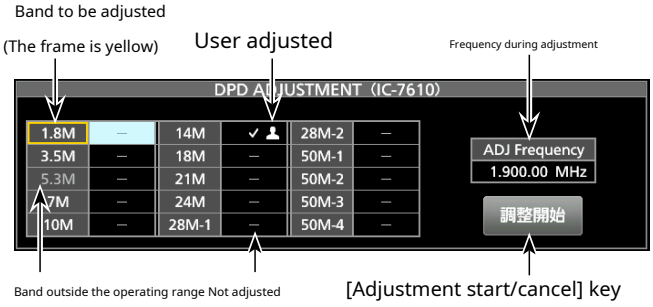
IC-PW2 interlocking adjustment (200V)

The selection of the band for DPD interlock adjustment with IC-PW2 (at AC200V) and the interlock adjustment status of each band (at 1kW/500W) are displayed. *Adjustment will start at the maximum output power selected by IC-PW2. *If IC-PW2 is not connected, the status at the time of interlock adjustment will be displayed. *Before performing DPD interlock adjustment, IC-7610 individual adjustment is required.

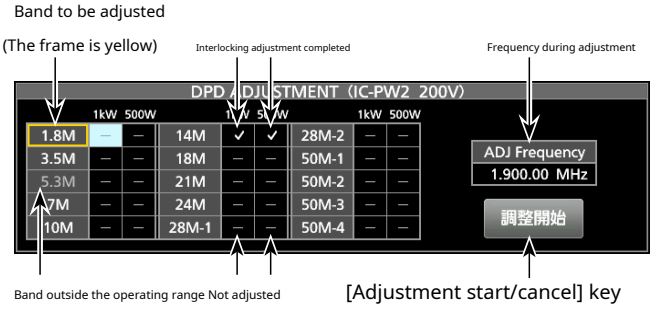
IC-PW2 interlocking adjustment (100V)

The selection of the band for DPD interlock adjustment with IC-PW2 (at AC100V) and the interlock adjustment status of each band (at 500W) are displayed.
*If IC-PW2 is not connected, the status at the time of interlock adjustment will be displayed.
*Before performing DPD interlock adjustment, IC-7610 individual adjustment is required.

[Display example] IC-7610 single unit adjustment



[Display example] IC-PW2 interlocking adjustment (200V)



additio DPD function

◇ Individual adjustment of DPD function

Adjust the DPD of the band operated by the DPD function.

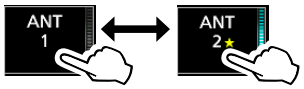
1. "DPD Adjustment"Display the screen.
2. "IC-7610 single unit adjustment"Touch.
   —The dialog "Do you want to move to the adjustment screen?" will be displayed.
3. Touch [Yes].
   —The "DPD ADJUSTMENT (IC-7610)" screen will be displayed.
4. Touch [▲]/[▼] to select the band for DPD adjustment. (Example: When selecting 14M)



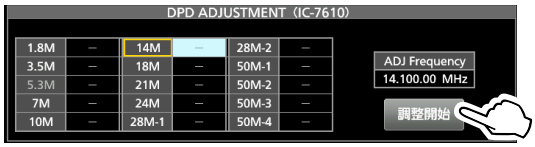
— The frequency during DPD adjustment is displayed and the internal mode is set to the appropriate operating mode.
to switch.

*When adjusting the DPD, change the frequency and switch the antenna connector.
It does not affect the adjustment value.
Regarding frequency changes,About the frequency range of the DPD adjustment band.
Stay/Please see (P.4).

5. If the antenna connector to which the dummy load is connected is different from the antenna memory, switch.



6. Touch [Start Adjustment].



— "Adjustment will start." will be displayed.

7. Touch [OK].
   *Automatically enters transmission state (maximum 30 seconds) at maximum output. *If the transmission power is low, "Transmit at 100% RF POWER. Are you sure?" will be displayed, so touch [Yes].

— While sending, the [Start Adjustment] key is pressed. Switch to [Cancel]
Masu.

— "Adjustment completed." is displayed and the band whose adjustment has been completed is displayed.
to ✓ will be displayed.

8. If you want to use the DPD function even with unadjusted bands, repeat steps 4 to 7 to make adjustments.

◇ DPD interlock adjustment

After completing the individual adjustment of the IC-7610 using the steps on the left, perform the DPD interlock adjustment with the IC-PW2 using the steps below.

1. When connecting IC-PW2 with AC200V, the maximum output power for adjusting DPD of IC-PW2 (1kW/500W) Switch to
   *Please adjust the DPD according to the output power used. (Example: At 1kW)
2. Display the "DPD adjustment" screen of this product.
3. Touch "IC-PW2 interlock adjustment (200V)".
   —The dialog "Do you want to move to the adjustment screen?" will be displayed. *When connecting IC-PW2 with AC100V, ~~AC100V~~ interlock adjustment (100V) "
   Touch.
4. Touch [Yes].
   —The "DPD ADJUSTMENT (IC-PW2 200V)" screen is displayed.
   Masu. (Example: At the time of "IC-PW2 interlock adjustment (200V)")
5. Touch [▲]/[▼] to select the band for DPD interlock adjustment. (Example: When selecting 14M, 1kW)

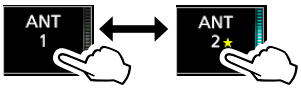


— The frequency at the time of DPD interlock adjustment is displayed, and the appropriate operation mode is set.
Switched internally.

*Make sure that the selected band and frequency are synchronized with IC-PW2.

*During DPD interlock adjustment, changing the frequency or switching the antenna connector will not affect the adjustment value.

6. Switch to the antenna connector of this product connected to the RF input connector on the (transmission) display side of IC-PW2.



7. Switch the antenna connector of IC-PW2 to the antenna connector to which the dummy load is connected.
8. Touch [Start Adjustment].



— "The output power will be 1kW. Are you sure?" will be displayed.
It will be.

9. Touch [Yes].
   — "Adjustment will start." will be displayed.

Ten[Touch [OK].
— The exciter automatically enters the transmitting state, [Start adjustment] key will change to [Cancel].

— "Adjustment completed." will be displayed and the output voltage for which adjustment has been completed will be displayed.
is displayed o ✓ force band.

11. If you want to use the DPD function even with unadjusted bands, repeat steps 4 to 9 to make adjustments.

additio DPD function

◇Deleting DPD adjustment values

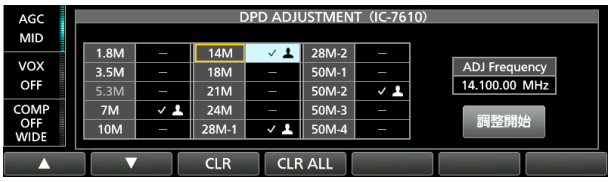
DPD adjustment values can be deleted from the screen during adjustment. *The erasing range differs depending on the screen, and even when IC-PW2 is not connected.

Adjustment values during DPD interlock adjustment can be deleted.

◎IC-7610 individual adjustment and DPD interlocking adjustment (100V/200V) adjustment

To clear all values at once

On the “DPD ADJUSTMENT (IC-7610)” screen, operate each menu key below.



[Operation of each menu key]

Key	motion
▲,▼	Band selection (valid when operating the [CLR] key)
CLR	All IC-7610 individual adjustment and DPD interlock adjustment (100V/200V) adjustment values registered in the selected band are deleted all at once.
CLR ALL	IC-7610 individual adjustment and DPD interlock adjustment (100V/200V adjustment value (1kW/500W: all bands) are deleted all at once.)

◎To delete only the adjustment value of DPD interlock adjustment (200V) On the "DPD ADJUSTMENT (IC-PW2 200V)" screen, operate each menu key below.



[Operation of each menu key]

Key	motion
▲,▼	Band selection (valid when operating the [CLR] key)
CLR	Delete only the DPD interlock adjustment (200V adjustment value (1kW/500W)) registered in the selected band)
CLR ALL	Delete all adjustment values (1kW/500W: all bands) of DPD interlock adjustment (200V)

◎To delete only the adjustment value of DPD interlock adjustment (100V) On the "DPD ADJUSTMENT (IC-PW2 100V)" screen, operate each menu key below.



[Operation of each menu key]

Key	motion
▲,▼	Band selection (valid when operating the [CLR] key)
CLR	Delete only the DPD interlock adjustment (100V adjustment value (500W)) registered in the selected band)
CLR ALL	Delete all adjustment values (500W: all bands) of DPD interlock adjustment (100V)

◇Switching DPD function

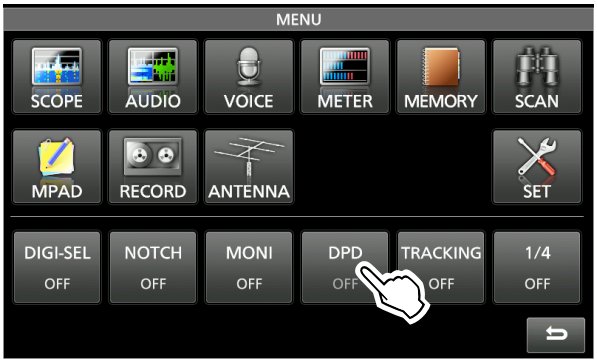
《MODE》SSB/SSB-DATA/AM/AM-DATA After adjusting the DPD function, you can switch the DPD function.

1. MENU Press
2. [DPD] Touch.

*Even when IC-PW2 is connected, switching can be done simply by operating this product. *DPD unadjusted bands and FM/FM-DATA/CW/RTTY/ OFF when PSK is selected (Fixed) It will be.

*Even if the band has been adjusted for DPD, if the operating frequency is outside the DPD adjustment frequency range, turn OFF. (Fixed) It will be.

*While using the DPD function, feedback correction is performed while monitoring the transmit signal level of this product, so please adjust it to a level that does not cause the fluctuation of the ALC meter of this product to exceed the ALC zone. When the ALC zone is exceeded, an abnormality in the correction value is detected and correction is stopped.



◇Saving and loading DPD adjustment values

DPD adjustment values can be saved to an SD card or USB memory along with other setting data.

When loading setup data, you can select the DPD adjustment value on the "Load Options" screen.



addition DPD function

◇About the frequency selection range of DPD adjustment band

The table below shows the frequency range of each band that can be selected when adjusting DPD. If you wish to change the frequency during adjustment, select it within the transmission frequency range listed in the product's ratings.

*Even if you change the band edge on the "User Band Edge" screen of this product, it will not affect the frequency selection range.

adjustment band	Frequency selection range
1.8M	0.030.000 to 1.999.999
3.5M	2.000.000 to 3.999.999
7M	5.800.000 to 7.999.999
10M	8.000.000 to 11.999.999
14M	12.000.000 to 14.999.999
18M	15.000.000 to 18.999.999
21M	19.000.000 to 21.999.999
24M	22.000.000 to 24.999.999
28M-1	25.000.000 to 28.999.999
28M-2	29.000.000 to 29.999.999
50M-1	30.000.000 to 50.999.999
50M-2	51.000.000 ~ 52.000.000
50M-3	52.000.001 to 52.999.999
50M-4	53.000.000 ~ 60.000.000

addition Setting items

The following items have been added to the set mode function settings.

◇ IC-PW2 dual connection mode

MENU ≫ SET>Function settings

IC-PW2 dual connection mode (Initial setting:OFF)

This is a setting to link the operating band and frequency when one product is connected to the RF input connectors (INPUT 1 and INPUT 2) of IC-PW2 and operated.

— OFF: Not linked (IC-PW2 is not connected)

— ON: Linked

*If IC-PW2 is not connected, be sure to set it to "OFF". When set to "ON", operations such as antenna switching of this product are restricted as it is linked with IC-PW2.

addition Forced tune operation in conjunction with IC-PW2

At the same time as the IC-PW2 forced tuning operation, this product automatically enters the transmitting state, and you can start the IC-PW2 forced tuning. *Meters can be switched during forced tuning. *This product's TUNER Press briefly to interrupt the cooperative forced tune.

The TUNER lamp will switch from flashing (red) to off.

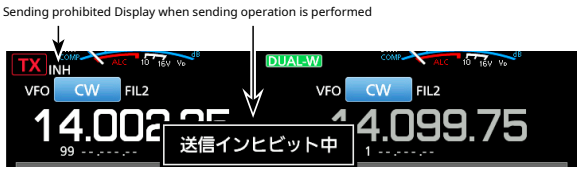
addition Transmission interlock control

When two of our exciters that support transmission interlock control (this product) are connected to the IC-PW2, it prevents the two exciters from entering a simultaneous transmission state during SO2R operation.

*RF when the INPUT lamp of IC-PW2 is off or lit in green.

"INH" is displayed when a control command to inhibit transmission (TX Inhibit) is set for this product connected to the input connector. When you try to send a message, ``Transmission inhibited'' is displayed and the message is not sent.

Sending prohibited Display when sending operation is performed



addition CI-V commands (supplementary instructions)

CI-V commands have been added due to specification changes. *Items marked with "*" can be read/written.

command	sub		data	motion
16*	66		00/01	TX Inhibi (t Sending prohibited) settings *00=OFF, 01=ON
	67		00/01	DPD function settings *00=OFF, 01=ON
1A*	05	0310	00/01	IC-PW2 dual connection mode settings *00=OFF, 01=ON

Notice of specification changes

IC-7610/IC-7610M Version 1.30

Due to the specification change, the functions of this product have been changed as shown below.

addit Scroll mode of scope function

Scroll mode has been added to the scope function.

frequency span (display range) is temporarily fixed and the signal within the span is displayed.

When the received frequency moves off-screen, the frequency span Above (display range) The upper/lower limit frequency scrolls to switch the displayed frequency range. The scroll modes are SCROLL-C, which displays from center mode, and FIX (fixed). There is a SCROLL-F to display from the mode.

*When operating the scope function [SPAN] or [EDGE],

The setting value is now displayed approximately 1 second larger.

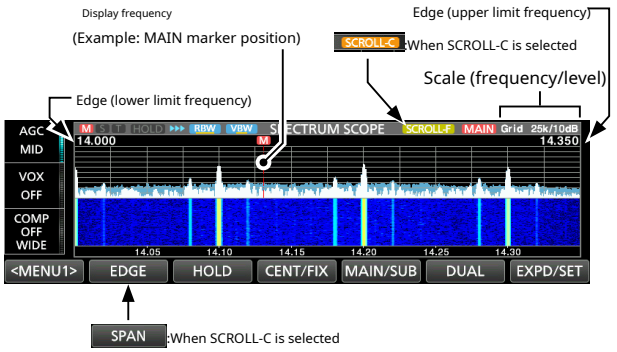
1. Display the “SPECTRUM SCOPE” screen. ≫
   MENU SCOPE
2. Hold [CENT/FIX] longer(about 1 second) Touch to scroll mode
   Switch to display. (Example: MAIN band)
   *For mouse operations, set the mouse pointer to mode. (CENTER, FIX) Press and hold the left button to switch to scroll mode display.

   Center mode → scroll mode
   When switching from center mode, SCROLL-C will be displayed.
   *You can operate [SPAN] in the same way as in center mode.

   FIX mode → scroll mode
   When switching from FIX mode, SCROLL-F will be displayed. *You can operate [EDGE] in the same way as in FIX mode.
3. Touch [CENT/FIX] briefly to return to the previous mode.

*The frequency span set in scroll mode will be displayed as is. *If you switch the edge in SCROLL-F display and then return to FIX mode, the edge that was set in SCROLL-F display will remain the same.

Also, if the current frequency is outside the display range of the scope, "--" will appear on the left and right sides of the top of the screen. (low frequency) ,or"--" (High) is displayed. It will be.



◇ Change scope setting item name

The setting item name on the "Scope Settings" screen is “Marker position (FIX mode)” from “Do” Changed to "Marker position (FIX mode/Scroll mode)".

*Marker positions can now be set even in scroll mode.

◇ Added FIX edge (No.4) for scope settings

There used to be up to 3 sets of FIX edges for each band on the "Scope Settings" screen, but now there are 4 sets with the addition of No. 4.

(CI-V command: 27 1E was also changed. :See page 4)

◇ Memorize scope reference level for each band

The reference level adjusted on the “SPECTRUM SCOPE” screen can now be memorized for each band.

◇ Addition of operation to cancel the scope screen

While displaying the scope screen, M.SCOPE for a long time (for about 1 second) You can now unlock the co-op screen.

changeTone setting when receiving data mode

When receiving in data mode, the receive tone control in set mode now always operates with the default settings.

MENU ≫ SET > Tone Control/Transmit Bandwidth >reception

Reception HPF/LPF (Initial setting:- - - - - - - - -)

Reception sound quality (bass) (Initial setting:0)

Reception sound quality (treble) (Initial setting:0)

changeset mode

The following items have been changed in the set mode function settings.

◇ Reference frequency adjustment

The reference frequency adjustment setting value has been changed to be displayed to the first decimal place.

MENU ≫ SET > Function settings >Reference frequency adjustment

Reference frequency adjustment

Adjust the reference frequency.

— Setting range: 0.0% to 100.0%

changeCI-V commands (supplementary instructions)

CI-V commands have been added/changed due to specification changes. *Items marked with "*" can be read/written.

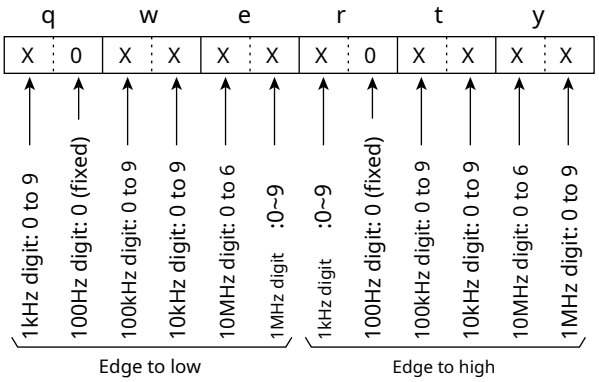
command	sub		data	motion
1A*	05	0169	00/01	Scope settings - marker position (FIX mode/scroll mode) settings *00=Filter Center 01=Career points
		0298	See figure below	Scope settings - FIX edge - No.4: 0.03 – 1.60 settings
		0299	See figure below	Scope settings - FIX edge - No.4: 1.60 – 2.00 settings
		0300	See figure below	Scope settings - FIX edge - No.4: 2.00 – 6.00 settings
		0301	See figure below	Scope settings - FIX edge - No.4: 6.00 – 8.00 settings
		0302	See figure below	Scope settings - FIX edge - No.4: 8.00 – 11.00 settings
		0303	See figure below	Scope settings - FIX edge - No.4: 11.00 – 15.00 settings
		0304	See figure below	Scope settings - FIX edge - No.4: 15.00 – 20.00 settings
		0305	See figure below	Scope settings - FIX edge - No.4: 20.00 – 22.00 settings
		0306	See figure below	Scope settings - FIX edge - No.4: 22.00 – 26.00 settings
		0307	See figure below	Scope settings - FIX edge - No.4: 26.00 – 30.00 settings
		0308	See figure below	Scope settings - FIX edge - No.4: 30.00 – 45.00 settings
		0309	See figure below	Scope settings - FIX edge - No.1: 45.00 – 60.00 settings
27*	00		See P.3	Spectrum scope output waveform data *Spectrum scope operation settings (Command: 27 10) and spectrum scope Transferred when the waveform data output setting (command: 27 11) is ON.
	14		See P.4	Spectrum scope mode settings
	15		See P.4	Spectrum scope SPAN settings *In center mode, SCROLL-C mode
	16		See P.4	Scope settings - FIX edge settings *When in FIX (fixed) mode or SCROLL-F mode
	20		00/01	Setting marker position *FIX mode, scroll (SCROLL-C) , SCROLL-F) mode *00=filter center, 01=Career points

◇ Add/change command format

Scope settings - FIX edge frequency settings

command:1A 05 0182～0217

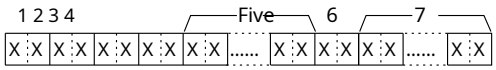
1A 05 0298～0309



changeCI-V commands (supplementary instructions)

◇Add/change command format

Spectrum scope output waveform data
command:27 00
Outputs spectrum scope waveform data from the radio.



1MAIN/SUB data: 00=MAIN, 01=SUB 2Division number (NOW) :01-15
3Division number (MAX) :01=LAN, 15=USB

◎When outputting from the [USB 1] port, the data is divided into 15 parts and output.

◎ [LAN] When outputting from a port, data is output all at once.

*The division number (NOW) refers to the number of divisions. The division number (MAX) refers to the total number of divisions.

Example) When sending the 5th division out of 15 divisions, use the division number (NOW) is 5, and the division number (MAX) is 15.

◎When outputting from the [USB 1] port, the data with the first division number (NOW) is the waveform data (u) cannot be carried. The second and subsequent data are MAIN/SUB data (q), division number (NOW) (w), division number (MAX) (e), waveform data (u)

vinegar.

FourDisplay mode :00=CENTER mode,
01=FIX (Fixed) mode,
02=Scroll (SCROLL-C) mode,
03=Scroll (SCROLL-F) mode

FiveWaveform information

Waveform information varies depending on the display mode.

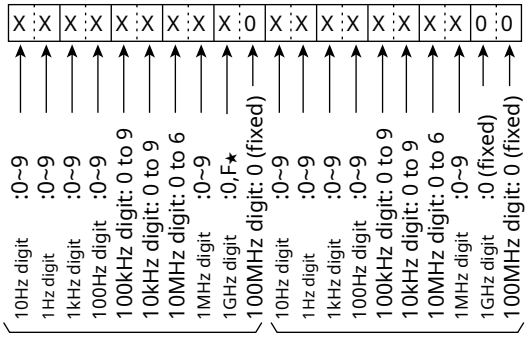
◎In case of center mode
:Center frequency + span

*Operating frequency data (P.12 of supplementary manual)

* Spectrum scope SPAN settings (center mode, scroll (SCROLL-C) mode) (on the next page)2~6reference)

◎FIX(Fixed) mode, scroll (SCROLL-C, SCROLL-F)

In case of mode: lower limit frequency + upper limit frequency



★ Scroll (SCROLL-C, SCROLL-F) In mode,
When the lower limit frequency is a negative value, 1GHz digit part minute becomes "F"

6Out of range: 00 = within range,
01 = out of range

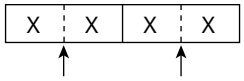
*In the case of Out of Range, there is no waveform, so the waveform data (7)teeth I can't ride it.

7Waveform data :0~200=data range,
689 = data length

change CI-V commands (supplementary instructions)

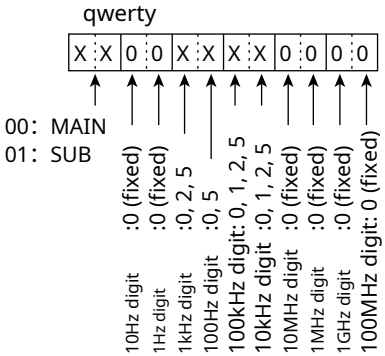
◇Add/change command format

Spectrum scope mode settings
command:27 14



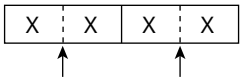
00: MAIN 00: Center mode
01: SUB 01: FIX(Fixed) mode
02: SCROLL-C mode
03: SCROLL-F mode

Spectrum scope SPAN settings
(In center mode, scroll (SCROLL-C) mode) command:27 15



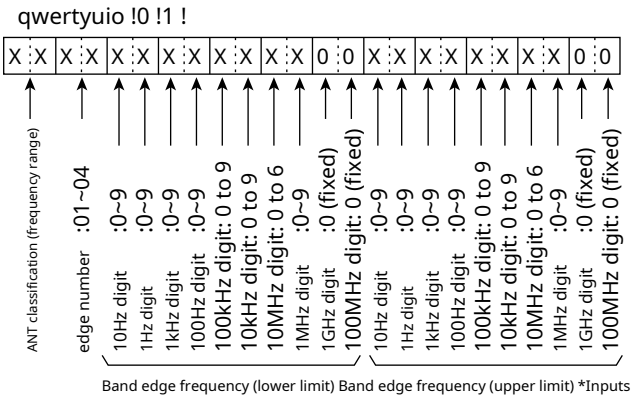
SPAN (kHz)	
2500	2.5
5000	Five
10000	Ten
25000	twenty five
50000	50
100000	100
250000	250
500000	500

Scope settings - FIX edge settings
(When in FIX (fixed) mode, scroll (SCROLL-F) mode)
command:27 16



00: MAIN 01: FIX Edge No.1
01:SUB 02:FIX Edge No.2
03: FIX Edge No.3
04:FIX Edge No.4

Setting the FIX edge frequency of the spectrum scope
command:27 1E



below 100Hz digit will be ignored (will not be treated as an error)

1ANT classification (frequency range)

data	ANT classification (frequency range)(MHz)
01	0.03～1.60
02	1.60~2.00
03	2.00～6.00
04	6.00～8.00
05	8.00～11.00
06	11.00～15.00
07	15.00～20.00
08	20.00～22.00
09	22.00～26.00
Ten	26.00～30.00
11	30.00～45.00
12	45.00～60.00

2Edge number: 01=1, O2=2, 03=3, 04=4

Notice of specification changes

IC-7610/IC-7610M Version 1.10

Due to the specification change, the functions of this product have been changed as shown below.

Update file (Version 1.10) By using , this product will be updated with the following content.

For information on how to update the firmware and check the firmware version, be sure to read the instruction manual "Chapter 16 Firmware Upgrade" in advance.

important!

Before updating the firmware, back up the memory channel contents, filter setting information, etc. to an SD card or USB memory.

Upgrading the firmware initializes (resets) the radio unit.All registered information will be deleted.

changeInitial setting value of digital IF filter

The initial setting of passband width (SSB-DATA mode: FIL1 to FIL3) has been changed.

Operational mode	Initial setting	Setting range (step width)
SSB-DATA	FIL1 (3.0kHz)	50Hz to 500Hz (50Hz)/ 600Hz ~ 3.6kHz (100Hz)
	FIL2 (1.2kHz)	
	FIL3 (500Hz)	

*For operating instructions, refer to the instruction manual.

Bandwidth selection (P.4-5)Please refer to the.

change"set" Screen setting items

The "Tone Control" item on the "Set" screen has been changed to the "Tone Control/Transmission Bandwidth" item.



* Regarding the abbreviations of operations described in the instruction manual,

MENU ≫ SET>Tone control/transmission bandwidth

Please read it as follows.

additio SSB-DATA mode transmission bandwidth setting

MENU ≫ SET >Tone Control/Transmit Bandwidth > Send >SSB-D

Added transmit bandwidth settings for SSB-DATA mode.

Transmission bandwidth (Initial setting:300 – 2700)

Set the low and high range of the transmission bandwidth.

— Choice: Low range 100, 200, 300, 500 (Hz)

High range 2500, 2700, 2800, 2900 (Hz)

additionSetting "input prohibition time when connected to USB"

MENU≫ SET > External terminal >USB SEND/keying

on the "External terminal" screen in set mode. “USB SEND/key

A setting for ``Input prohibition time when connected to USB" has been added to the ``Input prohibition time when connected to USB" item.

Input prohibition time when connected via USB (Initial setting:ON)

This setting prevents unintentional transmission of SEND signals and keying signals in the following situations.

◎When the computer and this product are connected with a USB cable.

◎When the computer and this product are connected with a USB cable, when starting up the computer or connecting or disconnecting other USB connected devices to the computer.

◎When communication is established with the USB virtual COM port of this product

— OFF : Immediately after connecting,Sending SEND signals and keying signals enable activation

—ON : After connecting for a few seconds,Sending SEND signals and keying signals Disable the output operation, Preventing unintended transmissions

*If you want to change the setting to "OFF", update the USB driver. After that, make sure that no unintended transmissions occur.

addit "Settings save version" settings

MENU ≫ SET>SD card

MENU ≫ SET>USB memory

A ``Save settings version'' item has been added to the ``SD card'' screen or ``USB memory'' screen in set mode.

Settings save version (Initial setting:Current version)

SD card, Or set the format of the settings file to be saved to the USB memory.

*The numbers in parentheses are means firmware version.

— Current version: Update the configuration data to the current firmware version.
Save in file format

— Old version (×.××−××.××)
:Firmware version format in parentheses
Save with

please note

◎ If you save the settings in the old version format, the new firmware
Settings added in the software version will not be saved.

◎ Setting data saved in the current version format is
Unable to read with software version IC-7610.

change CI-V commands (supplementary instructions)

For the following commands that have been added, please see the supplementary instructions posted on the Icom homepage.

◎29 :Specification of MAIN band and SUB band

◎1A 05 0296: Setting SSB-D TBW (transmission bandwidth) ◎1A 05 0297: Setting input prohibition time when connected to USB ◎1A 0A :Reading OVF Indicator