# 2.4 GHz Band Wireless unit

# Setting Utility (SWL31-UT1)

# **User's Manual**

Thank you for purchasing our 2.4 GHz Band Wireless unit (hereinafter called "Wireless unit"). To use the Wireless unit correctly and safely, please read this manual carefully before using it to understand sufficiently its functions and performance.

### - Cautions

- 1. Do not copy this user's manual without permission.
- 2. Please note that descriptions in this manual are subject to change without notice.

## MITSUBISHI ELECTRIC SYSTEM& SERVICE

## ♦ USAGE PRECAUTIONS

- Observe the following while parameters are being written to the Wireless unit. If not, breakdowns may occur.
  - Do not turn off the power of the Wireless unit.
  - Do not interrupt the communication between PC and the Wireless unit by pulling out of USB cable.
- It is recommended that you decide on a port on your PC to connect the Wireless unit if the PC has multiple USB ports. If you change the USB port to connect the Wireless unit, re-installation of the driver will be required.
- Do not connect multiple Wireless units to PC.
- When installing the wireless unit, avoid the area around the processing machine. Noise and other factors may cause communication problems.

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# 1. OVERVIEW

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### 1.1. Overview

This product is a software application for setting the parameters of our 2.4 GHz Band Wireless units.

### 1.2. Disclaimer

This product is a utility program for wiring the settings of the Wireless unit.

We assume no responsibility for setting data and malfunctions in the use of this product.

### 1.3. Operating Environment

The operating environment for this product is as follows:

Item no.	Item	Specifications	Remarks
1	CPU	Pentium 1.7 GHz or higher	—
2	Hard Disk Capacity	20 Mbyte	—
3	Required Memory Capacity	1 GB or higher (recommended)	—
4	OS	Windows 7	—
5	Display Resolution	1024 × 768 or higher; 60,000 colors or more recommended	—
6	Communication Interface	USB port	USB cable (USB Type A - USB Type Mini-B)
7	Others	.net Framewarks4.0*	_

\* If it is not installed, please download it from the Microsoft website.

### 1.4. Target Model

The following two models are target models to set parameters with this product.

### (1) SWL31-ETMC (2) SWL31-R4ML



# 2. UTILITY PREPARATION

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The utility preparation procedure is described below.



## 2.2. Checking File Configuration

[For Windows 7]

File name	Details
Download file	
├ SWL31-UT1.exe	The Setting Utility program
⊢ Driver	A driver for PC communication
CDC_Demo_Win7.inf	
-Util.rci	Manufacturer setting file
└SWL31-UT1_Manual.pdf	This document

### 2.3. Connecting a PC to the Wireless unit

- Connect the USB (mini-B) connector to the USB port on the right side of the unit and the USB (A) connector to the PC.
- 2. Turn on the power while pressing the "SET" button.
  - If the seven segment display shows "USB", starting-up has succeeded.
  - If anything other than "USB" is shown on the seven segment display, please retry again.
  - The USB Mode is activated even when you keep pressing the "SET" button for five seconds while the seven segment display shows "CH" or "E\*" (error).



\*1. The customer should obtain a USB cable.

### !!! Caution !!!

It is recommended that you decide on a port on your PC to connect the Wireless unit if the PC has multiple USB ports. If you change the USB port to connect the Wireless unit, re-installation of the driver will be required.

### 2.4. Installing the Driver

The driver for the Wireless unit Utility is installed to the PC.

- 1. Start "Device Manager" from "Start" ⇒ "Control Panel."
  - (If the control panel is accessed by the category display, start "Device Manager" from "Start" ⇒ "Control

Panel"  $\Rightarrow$  "Hardware and Sound.")

								×
🚱 🕞 ≂ 📴 → Control Panel → All Control Panel Items →						✓ 4 Search Control Panel	9	
Adjus	Adjust your computer's settings View by: Large icons 🔻							
p.	Action Center	¥=	Administrative Tools		AutoPlay	٩	Backup and Restore	^
٢	Biometric Devices		Broadcom Control Suite 4	1	Color Management		Credentia Man. Select "Device Manager.	."
P	Date and Time	۲	Default Programs	Þ	Dell Battery Information	忐	Dell Zlient System Update	
<b>Deell</b>	Dell Keyboard Hotkey Settings		Dell Touchpad		Desktop Gadgets	4	Device Manager	
-	Devices and Printers		Display	。 () ()	DW WLAN Card Utility	٩	Ease of Access Center	=
۶	Flash Player	F	Folder Options	A	Fonts	ଙ	Free Fall Data Protection	
	Getting Started	•	HomeGroup	J	IDT Audio Control Panel	R	Indexing Options	
	Intel(R) Graphics and Media	۲	Intel® Rapid Storage Technology		Internet Options	2	Keyboard	
	Location and Other Sensors	١	Mail	Ĩ	Mouse		Network and Sharing Center	
	Notification Area Icons	<u></u>	Parental Controls	N-de	Performance Information and Tools	K	Personalization	
(٢	Phone and Modem	٦	Power Options	Ô	Program Updates	ā.	Programs and Features	Ŧ

2. Right-click "CDC USB Demonstration" in "Other devices" and select "Update Driver Software..."

🖞 Device Manager						
File Action View Help						
sal-PC         Batteries         Disk drives         Disk drives         Disk drives         DVD/CD-ROM drives         Human Interface Devices         Jungo         Right-click         "CDC USB Demonstration."         Monitors         Network adapters         CDC USB Demonstration."         Select         "Update Driver Software"         Processors         Storage controllers         System devices         Universal Serial Bus         Properties						
Launches the Update Driver Software Wizard for the selected device.						

3. The Update Driver Software dialog will be displayed. Select "Browse my computer for driver software."



4. Select "Let me pick from a list of device drivers on my computer."

G	Update Driver Software - CDC USB Demonstration	×
	Browse for driver software on your computer	
	Search for driver software in this location:           C:\Users\sa1\Documents              Browse	
	Include subfolders	Select "Let me pick from a list of device drivers on my computer."
	Let me pick from a list of device drivers on my computer This list will show installed driver software compatible with the device, and all driver software in the same category as the device.	
	Next	lancel

5. The device type selection screen will be displayed. Select "Display all devices" and click "Next."

Update Driver Software - CDC USB Demor	nstration	X	
Select your device's type from the Common hardware types: Show All Devices Statution of the state of the s	ist below Select "Display all devices."	Next Cancel	Click "Next."

6. The driver selection dialog will be displayed. Click the "Use Disk..."

0	Update Driver Software - CDC USB Demonstration	
	Select the device driver you want to install for this hardware.	
	Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.	
	(Retrieving a list of all devices)	"I loo Diok "
	Have Disk	USE DISK
	Next Cancel	

7. The reference source setting dialog will be displayed. Click the "Browse" button.

Install Fro	m Disk	×		
4	Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.	OK Cancel		
				Click "Browse."
	Copy manufacturer's files from:		]	
		▼ Browse		

8. The file location specification dialog will be displayed. Select "CDC\_Demo\_Win7.inf" from "driver" in the download folder and click "Open."

Locate File	\mu Win7		- Select "CDC	_Demo_Win	7.inf."	
(Alia	Name	1		Date modified	Туре	
Recent Places	CDC_Demo	_Win7.inf		7/3/2014 1:44 PM	Setup Infc	
Desktop						
Libraries						
Computer					7	Click "Open."
	•				/	
Network	File name:	CDC_Demo_Win7	inf	- [	Open	
	Files of type:	Setup Information (	(*.inf)		Cancel	

 Check that the correct address is displayed under "Manufacturer's file copy source" and click the "OK" button.



10. Check that "CDC USB for Utility" is displayed under Model and click "Next."

	Update Driver Software - CDC USB Demonstration	
	Select the device driver you want to install for this hardware.	
	Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.	
Check that "CDC USB for Utility" is displayed.	Image: Stress of the stand	
	This driver is not digitally signed!     Have Disk     Tell me why driver signing is important     Click "	'Next."
	Next Cancel	

11. The warning dialog below may be displayed. If so, click the "Install this driver software anyway." .



12. The driver software installation will start.

Wait for about five minutes until the installation is complete.

- 13. When the driver installation is complete normally, the screen below will be displayed.
  - Click the "Close" button.

		×	
0	Update Driver Software - CDC USB for Utility (COM4)		
	Windows has successfully updated your driver software		
	Windows has finished installing the driver software for this device:		
	CDC USB for Utility		
			— Click Close.
		Close	

14. After the driver installation is complete, check the "Other devices" item (or "CDC USB Demonstration" within the "Other devices" item) has disappeared and "CDC USB for Utility" is displayed within "Port (COM and LPT)" under "Device Manager."

(It is recommended that the port number for CDC USB for Utility be written down since it is used for communication checks.)



Now the driver installation has been completed.

## 2.5. Starting/Exiting the Utility

#### Starting

After the driver is installed, start the Utility.

Double-click the downloaded "SWL31-Utility.exe" in the folder to start the Utility.

Exiting

Click the "X" button at the top right of the screen to display the dialog below.

If the current input data are to be saved, click "Yes (Y)" to save the file and exit the Utility.

If they are not to be saved, click "No (N)" to exit the Utility.



### 2.6. Installing .Net Framework

If the dialog below is displayed (when the necessary .Net Framework is not installed), download and

install .Net Framework from the Microsoft website.



### 2.7. Connection COM Port Checking Procedure

1. Start "Device Manager" from "Control Panel." ⇒ "start"

(For the category display, start from "Device Manager" ⇒ "Control Panel" ⇒ "Hardware and Sound.")

🕞 🕞 🗸 📴 🕨 Control Panel 🕨 All Co	ontrol Panel Items 🔸		- 4 Search Control Panel
Adjust your computer's settings	;		View by: Large icons 🔻
Action Center	Administrative Tools	AutoPlay	Backup and Restore
Biometric Devices	Broadcom Control Suite 4	Color Management	Credential Manager "Device Manager."
Date and Time	Default Programs	Dell Battery Information	Dell Client System Update
Dell Keyboard Hotkey Settings	Dell Touchpad	Desktop Gadgets	Device Manager
Devices and Printers	Display	아)) DW WLAN Card Utility	Ease of Access Center
Flash Player	Folder Options	Fonts	Free Fall Data Protection
Getting Started	🝓 HomeGroup	IDT Audio Control Panel	lndexing Options
Intel(R) Graphics and Media	Intel® Rapid Storage Technology	nternet Options	🗢 Keyboard
Location and Other Sensors	👰 Mail	Mouse	Network and Sharing Center
Notification Area Icons	Parental Controls	Performance Information and Tools	Personalization
			·

2. Check the COM number described after "CDC USB for Utility" within "Port (COM and LPT)."





# 3. HOW TO USE

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#### 3.1.1. When the Unit is Newly Installed

#### !!! Caution !!!

It is recommended that you decide on a port on your PC to connect the Wireless unit if the PC has multiple USB ports. If you change the USB port to connect the Wireless unit, re-installation of the driver will be required.

#### 3.1.2. When the Master Station [SWL31-ETMC] is Replaced

When the master station is replaced, the setting data prepared when the existing system has been installed shall be written to the new Wireless unit master station.

If the setting data for the existing system configuration does not exist, the unit shall be replaced according to the procedure below.



### III Caution III

ODo not write the setting data read from the existing master station alone to the new master station.

If the setting data of slave stations are not reflected, communications may be unavailable.

#### 3.1.3. When the Slave Station [SWL31-R4ML] is Replaced

When the slave station is replaced, <u>the setting data prepared when the existing system has been installed shall be</u> <u>written</u> to the new slave station first and then the master station.

\* When the data is written to the new slave station, the unit ID of the new slave station is read automatically.

Overwrite the master station with the unit ID setting.

If the setting data for the existing system configuration does not exist, the unit shall be replaced according to the procedure below.



#### 3.1.4. For Wireless unit Setting Data Backup

For Wireless unit setting data backup, prepare backup data according to the procedure below.



### 3.2. Preparing Setting Data with Utility

The setting data to be written to the Wireless unit is prepared.

After all common settings, master station settings and slave station settings are prepared, "3.4 Writing Setting

#### Data to Wireless unit" shall be carried out.

	💀 SWL31 utility version1.1.2				- 🗆 X		
	SWL31 Utility Common setting Group No. 1 Freq The number of Slave stations 5 Max betw	Initialize setting The connection port COM3 If Auto Selecting	_	(1) Common Setting Item			
	Choose a Writing unit	Write to wireless unit	Write to wireless unit	Write to wireless unit	Write to wireless unit		
(2) Master Station Setting Item	Choose a Reading unit	Read from wireless unit TEST	Read from wireless unit TEST	Read from wireless unit	Read from wireless unit TEST		(3) Slave Station Setting Item
	Slave station No.	Master station	Slave station 1	Slave station 2	Slave station 3		
	Individual Setting	Individual Setting	Individual Setting	Individual Setting	Individual Setting		
	The number of bit points The number of word points	48	16 0	16 0	16 0		
	Ethernet setting Pulse count setting	Ethernet setting	Pulse count setting	Pulse count setting	Pulse count setting		
	Expansion station setting		Expansion station setting	Expansion station setting	Expansion station setting		
	Writing time						
	٢				>		
	Sheet1						

Figure 3.2 Each Setting Item

(1) Common Setting Item

Items that it shared by the master station and slave stations are set. They are Group No., Selected Frequency, No. of Slave Stations and other items.

(2) Master Station Setting Item

Master station-related settings such as Ethernet Setting are set.

(3) Slave Station Setting Item

Slave station-related settings are set. They are Expansion Connection Existence, Pulse Count and other items.

#### For details of each setting, refer to "4 Utility SCREEN DETAIL."

## 3.3. Checking Communication with the Wireless unit

Connections with the Wireless unit shall be checked with the procedure below.

- 1. Select the COM port to which the Wireless unit is connected under "Connection Port" at the top right of the main screen.
  - \* For the connection port, refer to "2.7 Connection COM Port Checking Procedure."
- 2. Click the "TEST" button of the communication target (master station/slave station) to check the
- communication.

SWL31 Utility Common setting	1   Processing	Load file Save fi	le	Initialize setting	
Group No. 1 ✓ Freq. The number of Slave stations 3 ↔ Max betw	relay number relay number een master and slave	iGHz) V	M.	COM3	
Choose a Writing unit	Write to wireless unit	Write to wireless unit	Write to wireless unit	Write to wireless unit	(1) Select the port to
Choose a Reading unit	Read from wireless unit	Read from wireless unit	Read from wireless unit	Read from wireless unit	which the Wireless
Communication test	TEST	TEST	TEST	TEST	unit is connected.
Slave station No.	Master station	Slave station 1	Slave station 2	Slave station 3	(2) Click the "TEST"
Unit ID					button of the
Individual Setting	Individual Setting	Individual Setting	Individual Setting	Individual Setting	communication
The number of bit points	48	16	16	16	target.
The number of word points	0	0	0	0	
Ethernet setting	Ethernet setting				
Pulse count setting		Pulse count setting	Pulse count setting	Pulse count setting	
Expansion station setting		Expansion station setting	Expansion station setting	Expansion station setting	
Writing time					
¢					

Figure 3.3-1 Checking the Connection

If the connection is normal, the dialog below will be displayed.



Figure 3.3-2 Normal Communication Dialog

If the connection is not normal, following dialog below will be displayed. Check the COM port and connection target. (For COM port checking, refer to Section 2.7.)



Figure 3.3-3 Abnormal Communication Dialog

### 3.4. Writing the Setting Data to the Wireless unit

After the setting data to be registered to the Wireless unit are prepared, click "Write to Wireless unit" of the

slave station number which is the writing target to write the setting data.

SWL31 utility version1.1.2								
SWL31 Utility 1 - Processing Load file Save file								
Common setting       I       Frequency       1 (2.405GHz) ∨       The connection port         Group No.       I       Max relay number       I       COM3 ∨         The number of Slave stations       I       I       ✓       Auto Selecting								
Choose a Writing unit Write to wireless unit Write to wireless unit Write to wireless unit Write to wireless unit								
Choose a Reading unit Read from wireless unit Read from wireless unit Read from wireless unit Read from wireless								
Communication test	TEST	TEST	TEST	TEST				
Slave station No.	Master station	Slave station 1	Slave station 2	Slave station 3				

Figure 3.4-1 Writing to the Wireless unit

If the setting data are correct, the dialog below will be displayed.

Check the writing destination displayed and click the "OK" button to write the setting data.



Figure 3.4-2 Writing Confirmation Dialog

If there is a slave station without a unit ID input when the setting data are written to the master station, the dialog below will be displayed.

Write the setting data to the slave station first (the unit ID is read automatically at that time), or check the

parameter P102 of the slave station by operating the button of the unit and input the unit ID.

For details of button operation, refer to "2.4 GHz Band Wireless unit User's Manual (SWL31-ETMC and SWL31-R4ML)."

SWL31 util	ity version1.1.2
4	Enter the unit ID, or communicate with Slave Station of doing read or write.
	ОК

Figure 3.4-3 Unregistered Unit ID Confirmation Dialog

When writing to the Wireless unit is complete, the dialog below is displayed.



Figure 3.4-5 Writing Completion Dialog

### III Caution III

Until the dialog is displayed, be sure to comply with the items below. If not, breakdowns may occur.

• Do not turn off the power of the Wireless unit.

• Do not interrupt the communication between a PC and the Wireless unit by pulling out a

USB cable or the like.

### 3.5. Saving the Setting Data File

The setting data written to the Wireless unit are saved in "CSV file."

Click the "Save File" button at the top of the screen.							
🖷 SWL31 utility version1.1.2				– 🗆 X			
SWL31 Utility 1 + Processing Load file Save file							
Common setting       I       Frequency       1 (2.405GHz) ~       The connection port         Group No.       I       Max relay number       Image: Common setting       Image: Co							
Choose a Writing unit	Write to wireless unit	Write to wireless unit	Write to wireless unit	Write to wireless unit			
Choose a Reading unit	Read from wireless unit	Read from wireless unit	Read from wireless unit	Read from wireless unit			
Communication test	TEST	TEST	TEST	TEST			
Slave station No.	Master station	Slave station 1	Slave station 2	Slave station 3			

Figure 3.5-1 Writing to the Wireless unit

Clicking "Save File" displays the file saving dialog. Select the saving location and file name and click the "Save" button.

🐖 Save As						×
Libraries	Documents			<b>- 4</b> γ	Search Documents	٩
Organize 🔻 New folde	er -					i • 🕡
🔆 Favorites	Documents library Includes: 2 locations				Arrange by:	Folder 🔻
Documents	Name	Date modified	Туре	Size		
J Music		No items ma	itch your search.			
I툎 Computer 🏝 OS (C:)						
🗣 Network						
File name:						•
Save as type: CSV (	Comma-separated) (*.csv)					•
Hide Folders				(	Save	Cancel

Figure 3.5-2 File Saving Dialog

<u>\* If the saved CSV file is edited, reading the file with the Utility will be unavailable.</u>
 <u>If the setting data are to be edited, be sure to use this product for editing.</u>

### 3.6. Reading the Saved Setting Data File

The setting data saved in "C	SV file" is read.						
Click "Load File" at the top of	of the screen.	_	Click "Load File."				
💀 SWL31 utility version1.1.2				>			
SWL31 Utility	1 - Processing	Load file Save fi	le	Initialize setting			
Common setting     Group No.     I      Frequency     I (2,405GHz)      The common setting       The number of Slave stations     I     Max relay number between master and slave     I     Image: Common setting							
Choose a Writing unit	Write to wireless unit	Write to wireless unit	Write to wireless unit	Write to wireless unit			
Choose a Reading unit	Read from wireless unit	Read from wireless unit	Read from wireless unit	Read from wireless unit			
Communication test	TEST	TEST	TEST	TEST			
Slave station No.	Master station	Slave station 1	Slave station 2	Slave station 3			

Figure 3.6-1 Reading from CSV File

Clicking "Load File" displays the file reading dialog. Select the file to be read and click the "Open" button.

🛃 Save As							×
U Librarie	es 🕨 Documents 🕨				- 4	Search Documents	Q
Organize 👻 New fo	lder					88	• 0
🔆 Favorites	Document Includes: 2 loca	ts library				Arrange by:	Folder 🔻
Control Contr	Name	^	Date modified No items m	Type natch your search.	Size		
File name: Save as type: CSV	/ (Comma-separated	) (*.csv)				Save	▼ ▼ Cancel

Figure 3.6-2 File Reading Dialog

\* If a CSV file that has been edited with a program other than this product is read, the dialog below will be displayed and reading will be unavailable. If the setting data are to be edited, be sure to use this product for editing.

SWL31 utility version1.1.2	×
This file might be r	modified by another application.
	ОК

Figure 3.6-3 Read Error Dialog

### 3.7. Reading the Setting Data from the Wireless unit

The setting data set to the Wireless unit are read on the Utility.

Click "Read from the Wireless unit" of the slave station number to be read.

🛃 SWL31 utility version1.1.2				– 🗆 X
SWL31 Utility	1 - Processing	Load file Save fil	e	Initialize setting
Common setting Group No. 1 Frequ The number of Slave stations B + Max r betwee	rency 1 (2.405G elay number en master and slave 1	H2) ~		The connection port
Choose a Writing unit	Write to wireless unit	Write to wireless unit	Write to wireless unit	Write to wireless unit
Choose a Reading unit	Read from wireless unit	Read from wireless unit	Read from wireless unit	Read from wireless unit
Communication test	TEST	TEST	TEST	TEST
Slave station No.	Master station	Slave station 1	Slave station 2	Slave station 3

Figure 3.7-1 Reading to the Wireless unit

The following file read confirmation dialog will be displayed. Click "OK."

SWL31 util	ty version1.1.2	
4	Read the Master station settings. The current settings of slave station n will be lost. Is it OK?	
	OK Cancel	

Figure 3.7-2 File Read Confirmation Dialog

III Caution III
ODo not write the setting data read from the master station alone (without
the setting data read from the slave stations) to the master station to be replaced.
If the setting data of slave stations are not reflected, radio
communications may be unavailable.
(For details, refer to "3.1.2 When the Master Station [SWL31-ETMC] is
Replaced.")
OReading the setting data overwrites the data edited with the Setting
Utility.

### 3.8. Initializing Parameters

🛃 SWL31 utility version1.1.2		Cli "In	ck – itialize Settings."	×
SWL31 Utility	1 Processing	Load file Save fil	e	Initialize setting
Common setting Group No. 1 V Frequ The number of Slave stations B + Max 1 betwee	ency 1 (2.405G elay number en master and slave 1	Hz) ~		The connection port
Choose a Writing unit	Write to wireless unit	Write to wireless unit	Write to wireless unit	Write to wireless unit
Choose a Reading unit	Read from wireless unit	Read from wireless unit	Read from wireless unit	Read from wireless unit
Communication test	TEST	TEST	TEST	TEST

To reset the setting data to default, click "Initialize Settings."

Figure 3.8-1 Reading to the Wireless unit

The initialization confirmation dialog below will be displayed. Check the details and click the "OK" button if there is no problem.



Figure 3.8-2 Initialization Confirmation Dialog

Clicking the "OK" button initializes the setting items on the sheet.

(The setting items of other tags will not be initialized.)



# 4. SCREEN DETAIL

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### 4.1. Main Screen (Common Setting Items)

On the main screen, settings shared by the master station and slave stations and settings required by the

host station are configured.

With the setting screen transfer buttons, the function setting screens are called up.

		SWL31 utility version1.1.2				- 🗆 X
(2) Common Setting Refer to 4.2.		SWL31 Utility Common setting Group No. The number of Slave stations Detwee	1 Processing	Load file Save fil	ie	Initialize setting
(3) Host Station Setting Refer to 4.3.		Choose a Writing unit Choose a Reading unit	Write to wireless unit	Write to wireless unit Read from wireless unit	Write to wireless unit Read from wireless unit	Write to wireless unit Read from wireless unit
		Communication test	TEST	TEST	TEST	TEST
(4) Ethernet Setting Refer to 4.4.		Slave station No. Unit ID	Master station	Slave station 1	Slave station 2	Slave station 3
	V	Individual Setting	Individual Setting	Individual Setting	Individual Setting	Individual Setting
(E) Dulas Count Sotting	$\setminus$	The number of bit points	48	16	16	16
Refer to 4.5.		The number of word points	0	0	0	0
	)	Ethernet setting	Ethernet setting			
(6) Expansion		Pulse count setting		Pulse count setting	Pulse count setting	Pulse count setting
Refer to 4.6.		Expansion station setting		Expansion station setting	Expansion station setting	Expansion station setting
		Writing time				
		4				3
		Sheet I				

Figure 4.1-1 Main Screen

The main screen has the items below.

For details of each item, refer to the reference section of each item.

#### Table 4.1 Main Screen Item

No.	Name	Details	Reference section
(1)	File Operation Button	Executes file saving/reading and Wireless unit writing/reading.	3
(2)	Common Setting	Configures settings shared by the master station and slave stations for communications.	4.2
(3)	Host Station Setting	Configures settings for operations of each unit.	4.3
(4)	Ethernet Setting	Configures the setting for the Ethernet communications. (Only the master station)	4.4
(5)	Pulse Count Setting*	Configures the setting for the pulse count function of the slave stations. (Only the slave stations)	4.5
(6)	Expansion Station Setting <sup>*</sup>	Configures the setting for the expansion units connected to the slave stations. (Only the slave stations)	4.6

\* For details of each function, refer to "2.4 GHz Band Wireless unit User's Manual (SWL31-ETMC and

SWL31-R4ML)."

## 4.2. Common Setting

Under the Common Setting, setting items shared by the master station and slave stations are configured for



No.	Name	Details	Setting range
(1)	Group No.	Set the Group No. of radio communications. The Group No. shall be set when multiple systems are used within the same area.	0 to 15
(2)	Selected Frequency	Select the frequency to be used for radio communications.	1: 2.405 GHz, 2: 2.410 GHz, 3: 2.415 GHz, 4: 2.420 GHz, 5: 2.425 GHz, 6: 2.430 GHz 7: 2.435 GHz, 8: 2.440 GHz, 9: 2.445 GHz, 10: 2.450 GHz, 11: 2.455 GHz, 12: 2.460 GHz, 13: 2.465 GHz, 14: 2.470 GHz, 15: 2.475 GHz
(3)	Max No. of Relay Units	Set the max no. of relay units allowed between the master station and the terminal slave station.	0 to 3
(4)	No. of Slave Stations	Set the number of slave stations (relay-dedicated stations included) which communicate with the master station. The number of slave stations displayed on the sheet depends on the No. of Slave Stations.	1 to 40

#### Table 4.2 Common Setting Item

\* For details of each function, refer to "2.4 GHz Band Wireless unit User's Manual (SWL31-ETMC and SWL31-R4ML)."

### 4.3. Host Station Setting

For host station settings, Unit ID, Output Power and other operations of each unit are configured.

Setting items below are to be configured when the polling communication is selected for the radio communication configuration.

	Choose a Writing unit	Write to wireless unit	Write to wireless unit	Write to wireless unit	Write to wireless unit
	Choose a Reading unit	Read from wireless unit	Read from wireless unit	Read from wireless unit	Read from wireless unit
(1)	Communication test	TEST	TEST	TEST	TEST
(2)	Slave station No.	Master station	Slave station 1	Slave station 2	Slave station 3
	Unit ID				
(3)	Individual Setting	Individual Setting	Individual Setting	Individual Setting	Individual Setting
(4)	The number of bit points	48	16	16	16
	The number of word points	0	0	0	0

Figure 4.3 Host Station Setting

Group No. 1 V Fre The number of Slave stations 1 + Ma; bet	quency 1 (2.405 x relay number ween master and slave	GHz) ~			The conne COM3 I Auto S	ie ie
Choose a Writing unit	Write to wireless unit	Write to wireless unit		Individual Setting		-
Choose a Reading unit	Read from wireless unit	Read from wireless unit		Slave station No.	Slave station 1	
Communication test	TEST	TEST	(5)	Unit Type	SWL31-R4ML(Slave includ	ling relay station)
Slave station No.	Master station	Slave station 1	(6)	Operation		Normal station
			(7)	Wireless Tim (polling comr	eout time(sec) nunication)	0.0
Individual Satting	Individual Setting	Individual Setting		Data during e	rror	Clear
The number of hit points	16	16	(9)	The output of	f the error	a contact
The number of word points	0	0		Radio Output	power	6.3mW(8dBm)
Ethernet setting	Ethernet setting					
Pulse count setting		Pulse count setting				
Expansion station setting		Expansion station setting				
Writing time			1			
-			4			

No.	Name	Details	Setting range
(1)	Slave Station No.	The number of the unit when communications are exchanged. The communication order and device assignment is executed according to the Slave Station No.	-
(2)	Unit ID	Set the Unit ID required when the slave stations are registered to the master station. It is read automatically when the setting data are written to the slave station.	0000 0000 0000 0000 to FFFF FFFF FFFF FFFF
(3)	The number of Bit Points	Master station: The total bit points of all slave stations is displayed. Slave station: The total bit points used by the host station is displayed.	Cannot be set (automatic calculation).
(4)	The number of Word Points	Master station: The total of word points of all slave stations is displayed. Slave station: The total of word points used by the host station is displayed.	Cannot be set (automatic calculation).
(5)	Operation	Set the operation of the slave station. Set Normal Station for normal use stations, Relay Station for relay-dedicated stations and Reserve Station for stations to be added in the future.	Normal Station Relay Station Reserve Station
(6)	Wireless Timeout Time	Set the timeout time when a radio communication error occurs. For 0.0, automatic calculation is applied.	0.0 to 600.0 [sec]
(7)	Data during Error	Set the handling of output data when an error occurs. * The following settings are only for the master station. Bit Clear, Word Hold Bit Hold, Word Clear	Clear/Hold Bit Clear, Word Hold Bit Hold, Word Clear
(8)	The output of error terminal	Set the output signal of the error terminal when an error occurs.	LIVE Signal, a Contact, b Contact
(9)	Radio Output Power	Set the transmission output for radio communications.	6.3 [mW]/4.0 [mW]/ 2.5 [mW]/1.6 [mW]/ 0.6 [mW]
(10)	Writing Time	Displays the time when parameters were written to the wireless unit.	yyyy/MM/dd hh:mm:ss

Table 4.3 Host Station Setting Item

### 4.4. Ethernet Setting Screen

On the Ethernet Setting screen, Ethernet communication-related settings are configured. On the Ethernet Radio Master Station Setting screen, the host station Ethernet communication-related settings are configured, and on the Partner Station Setting screen, the communication partner Ethernet-related settings are configured.

#### 4.4.1. Ethernet Radio Master Station Setting Screen



No.	Name	Details	Setting range				
(1)	IP Address	Register the IP address of the Wireless unit.	0.0.0.0 to 255.255.255.254				
(2)	Subnet Mask	Set the subnet mask for the IP of the Wireless unit.	128.0.0.0 to 255.255.255.254				
(3)	Port No.(HEX)	ort No.(HEX) Set the port number of the Wireless unit for communication with the partner Ethernet device.					
(4)	Protocol Selection	Set the protocol format of MC Protocol for communication with the partner Ethernet device. Set it according to the device to be used. Q Series PLC: 3E Frame FX Series PLC: 1E Frame	3E Frame/ 1E Frame				

### 4.4.2. Ethernet Partner Station Setting Screen



No.	Name	Details	Setting range
(1)	IP Address	Register the IP address of the partner Ethernet device.	0.0.0.0 to 255.255.255.254
(2)	Port No.(HEX)	Set the port number of the partner station for communication with the partner Ethernet device.	0000 to FFFF
(3)	Network No.	00H to FEH	
(4)	PC No.	Set the PC number of the access station on the system with the setting number of the network unit or others. (PC number: FF is valid only when the network number is 00H.)	00H to FFH
(5)	Request Destination I/O Station No.	Set them according to the PLC used. If the PLC CPU of the access station is as follows, refer to the manual of the CPU used.	0000H to FFFFH
(6)	Request Destination Unit Station No.	<ul> <li>Multi-CPU system PLC SOU</li> <li>PLC CPU on multi-drop connection with Q Series C24 or others</li> <li>Duplex system CPU</li> <li>For cases other than the above, set the default. (Fixed)</li> </ul>	00H to FFH
(7)	CPU Monitoring Timer	Set the time for the Ethernet unit to monitor the host station CPU (Setting value × 250) [ms]	1 to 9999
(8)	Ethernet Timeout	Set the communication timeout time [ms] from transmission to reception with the Ethernet device	100 to 9999
(9)	Communication Device Setting	Settings for a device which writes the data to the Ethernet partner device via MC Protocol are configured. Set the device to the Device Type and set the device No, to the Start No. of the device to be written. The use range for the Wireless unit shall not overlap with the one for devices used by other systems. For details, refer to the next page.	

\*1 If communications are unavailable with the Ethernet communication partner even after Ethernet timeout time [ms] x 3 passes, "EG," the error code, will be generated.



No.	Name	Details	Setting range
(1)	Bit Input Device Type	Set the Device Type and the device Start No. to write the bit input data (an input signal from	[X/D] *1 (D can be set only when 1E Frame is selected.)
(2)	Bit Input Start No.	Wireless unit slave station).	0 to 1FFF (0 to 8000 when D is set)
(3)	Bit Output Device Type	Set the Device Type and the device Start No. to read the bit output data (an output signal to	[Y/D] *1 (D can be set only when 1E Frame is selected.)
(4)	Bit Output Start No.	Wireless unit slave station).	0 to 1FFF (0 to 8000 when D is set)
(5)	Word Input Device Type	Set the Device Type and the device Start No. to	[D]
(6)	Word Input Start No.	Wireless unit slave station).	0 to 8000
(7)	Word Output Device Type	Set the Device Type and the device Start No. to	[D]
(8)	Word Output Start No.	Wireless unit slave station).	0 to 8000

\*1 Select D when FX3 Series PLC is used. Select X and Y when Q Series PLC is used.

# 4.5. Pulse Count Setting Screen

Choose a Writing unit	Write to wireless unit	Write to wireless unit	Write to	Pulse count setting Slave station 1 (1) ×
Choose a Reading unit	Read from wireless unit	Read from wireless unit	Read fro	Pulse count setting Unused $\sim$
Communication test	TEST	TEST		СН1 (2)
Slave station No.	Master station	Slave station 1	Slave	Count figures
Unit ID				Initial value
Individual Setting	Individual Setting	Individual Setting	Indiv	
The number of bit points	32	16		CH2 (4)
The number of word points	0	0		Count figures
Ethernet setting	Ethernet setting			Initial value
<ul> <li>Pulse count setting</li> </ul>		Pulse count setting	Pulse	
Expansion station setting		Expansion station setting	Expansion	OK Cancel
Writing time				

No.	Name	Details	Setting range
(1)	Pulse Count Setting	The number of channels which use the pulse count function is set. If "Unused" is selected, the pulse count function will not be used.	Unused/1Ch/2Ch
(2)	Pulse Count Ch1 No. of Digit Setting	Set the number of digits to count the pulse 1Ch.	1 to 8
(3)	Pulse Count Ch1 Default Setting	Set the starting value for the pulse 1Ch count.	0 to 99999999 (depends on the number of count digits)
(4)	Pulse Count Ch2 No. of Digits Setting	Set the number of digits to count the pulse 2Ch.	1 to 8
(5)	Pulse Count Ch2 Default Setting	Set the starting value for the pulse 2Ch count.	0 to 99999999 (depends on the number of count digits)

## 4.6. Expansion Unit Setting Screen

On the Expansion Unit Setting screen, settings related to the expansion unit connected to the slave station are configured.

#### 4.6.1. Expansion Setting Screen

Choose a Writing unit 🛛 🖷	Expansion setting Slave	station 1	[(1)]	1	μ.	×
Choose a Reading unit	The number of	4	_ []			
Communication test	Expansion stations	•				
Slave station No.		Expansion1	Expansion2	Expansion3	Expansio	on4
11.5.75	Unit type	DI/DO 16points unit	DI/DO 16points unit	DI/DO 16points unit	t 🗹 DI/DO 16points	sunit 🗹 🗕
Unit ID	Reservation setting	Use Station	⊻ Use Station	⊻ Use Station	⊻ Use Station	n 🗹
Individual Setting	Data during	Clear	Clear	Clear	≚ Clear	
The number of bit points	Analog Ch		$\overline{\mathbf{A}}$			
The number of word poin	acturing					
Ethernet setting					OK	Carrel
Pulse count setting				t		Garicer
Expansion station setting		Expan	nsion station setting	Expansion station set	ting Expansion st	tation setting
Writing time						

No.	Name	Details	Setting range	
(1)	No.of Expansion Stations	Set the number of expansion units (reserved stations included) to be connected to the slave station. The expansion settings of the number of units set as the No. of Expansion Stations will be displayed to be set.	0 to 8	
(2)	Unit Type	Set the expansion unit type to be connected.	I/O 16-point Unit, Analog Input 4-point Unit	
(3)	Reserve Setting	Set Use Station or Reserve Station for the expansion unit set.	Use Station, Reserve Station	
(4)	Data on Error	Set the handling (Clear/Hold) of output data on error occurrence.	Clear/Hold Follow the Slave Station.	

### 4.6.2. Analog Ch Setting Screen

On the Analog Ch Setting screen, the analog expansion unit analog channels settings are configured.

•	SWL31 utility version	n1.1.2												_	×
• <b>!</b> /	Analog channel setti	ing Slave station 1Ex	pansior	11						×				To tate the second	
Γ		Ch1		Ch2			Ch3		Ch4			(1)		Initialize setting	
	Use permission										_	(2)		The connection p	ort
	Input range	0-10V	~	0-10V	~	0-	10V	~	0-10V		_	(3)		COM3	~
	Average method	Sampling	~	Sampling	~	Sam	npling	~	Sampling		-	(4)		Muto selectini	E
	The number of average times	0		0			0		0		F				_
	Communican	ontest	_		4	7	[	OK	Can	cel					
							Expansion	1	Exp	ansion2		Expansion3		Expansion4	
ŀ	Slave station	ave station No. Unit type nit ID Reservation setting		nit type AI 4pc		4point unit	~	DI/DO 16p	oints unit	t 🗠	DI/DO 16points unit	~	DI/DO 16points unit	~	
	Unit ID			Reservation setting	U	se Station	~	Use S	tation	~	Use Station	~	Use Station	~	
	Individual Set	tting		Data during error Analog Ch		Clea	Clear	~	Cle	ear	~	Clear	~	Clear	~
	The number (	of bit points				An	Analog Ch setting								
	The number (	of word points													
	Ethernet set	ting												OK Cance	-1
	Pulse count s	setting			_									OK Odiloc	
•	Expansion sta	ation setting					Expans	ion sta	tion setting	g Exp	ansior	n station setting	Exp	ansion station settir	ng
	Writing time														
												_			>
															-
	Sheet1														

No.	Name	Details	Setting range
(1)	Analog Ch Conversion Permission	Set if the relevant analog Ch is used.	ON, OFF
(2)	Input Range	Set the range of the data to be used.	0-10V, 0-5V, 1-5V, 0-20mA, 4-20mA
(3)	Average Method	Set the method for average processing for data display.	Sampling, Times Average, Time Average, Moving Average
(4)	Average Count	Set the count/time for average. Since Sampling does not have average processing, the Average Count will be invalid.	Times Average, Moving Average 0 to 32 times, Time Average 0 to 32 x 10 ms

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