iKAN Series User Manual



Version 1.0.0 • Oct. 2016

Written by Tony Lee Edited by Sunny Chiu

Warranty

All products manufactured by ICP DAS are under warranty regarding defective materials for a period of one year, beginning from the date of delivery to the original purchaser.

Warning

ICP DAS assumes no liability for any damage resulting from the use of this product. ICP DAS reserves the right to change this manual at any time without notice. The information furnished by ICP DAS is believed to be accurate and reliable. However, no responsibility is assumed by ICP DAS for its use, nor for any infringements of patents or other rights of third parties resulting from its use.

Copyright

Copyright © 2016 by ICP DAS CO., LTD. All rights are reserved.

Trademarks

Names are used for identification purposes only and may be registered trademarks of their respective companies.

Contact US

If you have any problems, please feel free to contact us by email at: <u>service@icpdas.com</u>.

You can count on us for a quick response.

Version 1.0.0 Page: 2

Table of Contents

1. Introduction	5
2. Hardware Information	.9
3. Configuration	13
3.1. Ethernet configuration	13
3.2. Connecting to a remote DL-302 device	16
3.3. Importing/Exporting pre-configurated messages	17
3.3.1. Exporting a configuration file	17
3.3.2. Importing a configuration file	19
3.4. COM port configuration	20
3.5. LED Brightness and Message Motion Speed adjustment	21
3.6. MISC	23
4. Messages	25
4.1. Editing and Managing messages	25
4.2. Inserting system variables into a message	27
4.2.1. Displaying the IP Address	29
4.2.2. Displaying the current Date and Time	31
4.2.3. Displaying the CO2 and temperature values from a remote DL-302 module	33
4.3. Inserting variables into a message	35
4.3.1. Inserting a Coil variable into a message	35
4.3.2. Displaying the value of a coil with replacement text	37
4.3.3. Inserting an integer-type variable into a message	39
4.3.4. Data Mapping for Integer-type Variables	41
4.3.5. Inserting a float-type variable into a message	44
4.3.6. Setting the number of decimal places for float-type variables	46
5. Writing Variable	48
5.1. Using the iKAN Web Configuration Page	48
5.2. Using the Modbus TCP/RTU protocol	52
6. Firmware Update	53
6.1. Downloading the Latest Firmware	53
6.2. Installing eSearch utility	54
6.3. Updating firmware	54
7. FAQ	59
7.1. How to obtain the IP address for the iKAN device?	59
Appendix A: Instruction for Inserting Variable	60
Appendix B: Modbus Register Tables	61
Revision Record	64

1. Introduction

The iKAN series is a family of industrial Modbus LED display devices that deliver industrial-grade anti-noise capabilities as well as reliability and stability. The series display device is highly suitable for presenting formatted messages in indoor areas using either Unicode characters, which can be used to display multiple languages, or ASCII characters. Support for the popular Modbus industrial protocol is provided meaning that iKAN display devices can be easily integrated into existing PLC and SCADA environments.

168 variables are provided to allow data written from a PC or a PLC to be displayed in a formatted message in real-time. Seven colors are available for the text, which can be used to indicate different degrees of importance of the message, as well as significantly increase the readability of the message in an industrial arena.

Messages can be edited using a standard web browser, such as Google Chrome, Firefox, or IE, etc., on a PC, mobile device, or smartphone without any limitations related to specific control tools or programs. The display of individual messages can also be remotely enabled or disabled as necessary using the same standard web browser. Each model in the iKAN series provides storage space for up to 64 common messages and 10 instant messages, each containing a maximum of 40 Unicode characters or 100 ASCII characters. With an open user interface and the ability to display real-time data, the iKAN series LED display can be installed in a variety of indoor spaces, including shopping malls, railway stations, and industrial areas.



Features:

- Supports multiple languages when using Unicode characters
- Text height of 16 cm
- > 7 colors, including red, blue, yellow, green, light blue, purple and white
- Adjustable brightness and message motion speed
- Able to store up to 64 common messages and 10 instant messages
- Able to integrate both text and variables in a single message
- Supports the Modbus TCP/RTU Slave protocols
- Built-in RTC (Real Time Clock)
- Web-based User Interface
- Can be remotely controlled using a smartphone or other mobile device

Function description

PLC HMI

The iKAN series can be employed as a large HMI with a memory storage of up to 64 common messages and 10 instant messages, each of which can be used to display information generated by a PLC. Message text can be displayed in a range of seven colors, including red, blue, yellow, green, light blue, purple, and white, which can be used to indicate warnings or alarms, as well as increasing the readability of a message.



Supports Multiple Languages

The iKAN series of display device supports Unicode input, meaning that messages can be configured to be displayed in multiple languages.

Message Editing

A maximum of 64 common messages and 10 instant messages can be preconfigured from the first moment that the iKAN series display is switched on. When the display is in operation, the focus needs only be on message management rather than the need to frequently update the messages.

Message Priority

Instant messages have a higher priority than common messages. Once an instant message is enabled, the common message currently being displayed will be suspended until the instant message is disabled. This feature allows the most important information to be displayed in an emergency situation.

Integer-type variables enable data mapping

The iKAN series of display devices provide the ability to perform data mapping to translate a computer integer value to a readable physical value, such as the voltage, temperature, or relative humidity, etc. In the industrial field, this is a commonly performed task between the host computer and the data-acquisition devices via the Modbus protocol, enabling a reduction in the resources and programming required for the host computer

Import/Export the message configuration

The iKAN series allows a message and the parameters of the variables to be saved as a configuration file, which can then be loaded onto another iKAN series device to avoid the need to repeat the configuration.

Smartphone Application

Users can manage messages via a regular smartphone without requirement of a specific connection device, meaning that emergency information can be quickly sent to the display using the smartphone.

2. Hardware Information

Specifications

Model		iKAN-116	iKAN-124	
Display				
Color		Red, Blue, Yellow, Green, Light Blue, Purple or White		
Characte	r Set	16-bit Unicod	e or 7-bit ASCII	
Display	ASCII	16 characters	24 characters	
Size	Unicode	8 characters	12 characters	
	Deal	64 common messages and 10 i	nstant messages	
wessage	2001	Up to 40 Unicode characters or	100 ASCII characters each	
Data Poc	bl	40 Coil values, 64 Float values, and 64 Integer values		
RTC		Date and time, 24 hour format, including hours, minutes,		
(Real-tim	ne Clock)	seconds, day of the week, date	, month, year	
Ethernet	:			
Port		1 x RJ-45, 10/100 Base-TX		
Protocol		Modbus TCP Slave, Max. 8 connections		
Configuration		Web-based User Interface		
COM Port				
Interface	!	RS-232 or RS-485. Note that th	e interfaces cannot be used	
		simultaneously		
Baud rat	e (bps)	1200, 2400, 4800, 9600, 19200	, 38400, 57600, 115200	
Data Format		N81, E81, O81		
Protocol		Modbus RTU Slave		
Power				
Input Ra	nge	110 ~ 220 V _{AC}		
Concumption		0.25 A @ 110 V _{AC} ,	0.3A A @ 110 V _{AC} ,	
Consum		0.125 A @ 220 V _{AC}	0.15 A @ 220 V _{AC}	
Mechanical				
Dimensio	ons (W x H x D)	1346 mm x 160 mm x 49 mm	1986 mm x 160 mm x 49 mm	
Installation		Wall mounting		
Environn	nent			
Operatin	g Temperature	0 to 60°C		
Storage 7	ſemperature	-10 to 75°C		
Humidity	1	10 to 90% RH, Non-condensing		

iKAN Series Modbus LED Display User Manual Copyright © 2016 ICP DAS Co., Ltd. All Rights Reserved.

E-mail: service@icpdas.com

Appearance



Power Input: 110 $^{\sim}$ 220 V_{AC}

Wiring

Power and Ethernet Wiring



RS-232 Wiring



RS-485 Wiring



iKAN Series Modbus LED Display User Manual Copyright © 2016 ICP DAS Co., Ltd. All Rights Reserved. version 1.0.0 Page 11 E-mail: service@icpdas.com

Dimensions (Units: mm)

iKAN-116



iKAN-124



3. Configuration

3.1. Ethernet configuration

The factory default IP address for each iKAN device is **192.168.255.1**. Before integrating an iKAN series display into your network, you should configure the IP, Mask, and Gateway addresses for the device by setting the values that are valid for your network system. To do this, follow the instructions given below.

NOTE:

- One iKAN device uses 2 adjacent IP addresses. Once an IP address is set for an iKAN device, the next IP address will be automatically set for the controller in the iKAN display. If the next IP address is already used for any other device, you will fail to communicate with the iKAN display.
- Details on how to change the IP address on your computer depend upon the type architecture and operating system you are using. Use the Help and Support functionality on your computer and search for "IP Addressing".
- Remember the IP address on your computer for restoring it later.
- 1. Connect the iKAN display to the Host PC, then power on all devices, as illustrated below.



The factory default IP address for the iKAN device is 192.168.255.1. Before attempting to connect to the built-in web configuration page on the iKAN device, ensure that the IP address of the Host PC is set to a valid address in the range 192.68.255.2 to 192.168.255.253. This address should be unique and should not be used by other Ethernet devices.

3. Enter the IP address of the iKAN display in the address bar of a browser, such as Google Chrome, Firefox, or IE, etc., and then press Enter. The web configuration page for the iKAN device will then be displayed.



4. Configure the IP, Mask, and Gateway addresses for the iKAN device by following the instructions given below.

	MES	SAGE POOL	DATA POOL	SYSTEM
ETHERNET	LOCAL ETH	IERNET		
2 SERIAL PORT	IP Address:	10 . 0	. 7 . 198	
MISC.	Mask:	255 . 255	. 0 . 0	
3	Gateway:	10 . 0	. 7 . 254	
	REMOTE D	L-302		
	IP Address:	255 . 255	. 255 . 255	
4	Update Settir	igs v		

0	Click the System tab at the top of the page.
2	Click the ETHERNET option from the menu on the left-hand side of the page.
3	Enter a valid value for the IP , Mask , and Gateway addresses in the fields in the LOCAL ETHERNET section. Note that the IP address must be unique and must not be duplicated with other Ethernet devices in the network.
4	Click the Update Settings button to save the new values and complete the configuration process. Note that the iKAN device will be automatically reset once you click the Update Settings button.
5	Restore the IP address of the Host PC to the previous value. Repeat step 3 above, but enter the new IP address of the iKAN device, and then press Enter to display the web user interface that allows messages to be pre-configured.

3.2. Connecting to a remote DL-302 device

The iKAN series devices can be used to display data such as the temperature, humidity and CO2 values sourced from a specific remote DL-302 device that is connected to the same network as the iKAN device. Once the IP address for the DL-302 device has been configured, the data recorded by the DL-302 can be automatically obtained. To specify the IP address of the required DL-302 device, follow the instructions given below.

	MES	SAGE POOL	DATA POOL	SYSTEM
IMPORT/EXPORT ETHERNET 2 SERIAL PORT MISC.	LOCAL ETH IP Address: Mask: Gateway:	HERNET 10 . 0 255 . 255 10 . 0	. 7 . 198 . 0 . 0 . 7 . 254	
3	REMOTE D IP Address: Update Settir	L-302 255 . 255	. 255 . 255	

0	Click the System tab at the top of the page.
2	Click the ETHERNET option from the menu on the left-hand side of the page.
3	Enter the IP address for the desired DL-302.
4	Click the Update Settings button to save the new values and complete the configuration process.

3.3. Importing/Exporting pre-configurated messages

If your system contains more than one iKAN series device, it could take a lot of time to configure each one individually. To simplify this process, the Import/Export function that is found on the web configuration page can be used to pre-configure the contents of a message or variable on the iKAN series device before using Modbus TCP/RTU commands to manage the message pool, thereby reducing the need to repeat the configuration tasks multiple times.

Once a message has been configured for the iKAN device, use the Export function to save the contents as a CSV file on the Host PC. This means that additional iKAN series display devices can be easily configured by importing the csv file to that device.

	MESSAGE POOL	DATA POOL	SYSTEM	
MPORT/EXPORT ETHERNET SERIAL PORT	IMPORT The import function allows you information from an external fi	to load the pre-configu le.	ired message details as well as the vai	iable
міsс. 3 (4 (Step 1: select a msg_con.csv file for import Step 2: Import EXPORT The export function allows you variables to a file for use with a Step 1: Click Save button Save Step 2: Click Export button Export	Choose File to save the currently c additional MD204 display	onfigured messages as well as the ass ys.	ociated

3.3.1. Exporting a configuration file

0	Click the System tab at the top of the page.	
2	Click the IMPORT/EXPORT option from the menu on the left-hand side the page.	of
3	Click the Save button to save the current configuration as a CSV file. A confirmation dialog will be displayed, click the OK button to save the file 10.1.0.150 顯示: Sure to save? Dh止此網頁產生其他對話方塊。	2.
4	Click the Export button to save the configuration file to the Host PC. The exported will be saved to the download folder location where yo browser saves downloaded files.	our

3.3.2. Importing a configuration file

The following is a description of how to import a previously stored configuration file. Note that the Import function will only load configuration information related to messages and variables.

2	MESSAGE POOL DATA POOL SYSTEM
IMPORT/EXPORT	IMPORT
SERIAL PORT	information from an external file.
MISC.	Step 1:
4	select a msg_con.csv file for import Choose File

0	Click the System tab at the top of the page.
2	Click the IMPORT/EXPORT option from the menu on the left-hand side of the page.
3	Click the Choose File button, and then select the desired CSV file, which is msg_con.csv in this case. The import function allows you to load the pre-configured message details as well as the variable information from an external file. To upload a CSV file, click Choose File to search for you file. After you select your file, click Import button. msg_con.csv Choose File Import
4	Click the Import button to load the contents of the configuration file, which is msg_con.csv in the illustration above. Once the file has been loaded, the message "CSV file successfully uploaded" will be displayed, as illustrated below. The import function allows you to load the pre-configured message details as well as the variable information from an external file. To upload a CSV file, click Choose File to search for you file. After you select your file, click Import button. select the file for import Upload CSV file successfully.

3.4. COM port configuration

RS-232 and RS-485 are both provided to communicate with Modbus RTU devices. Both interfaces use the same configuration settings including Baud Rate, Data Bits, Stop Bit, and Parity, but only one interface can be used at the same time. Transmission data format is N81, E81 or O81 selectable on the iKAN device.

IMPORT/EXPORT 3 ETHERNET SERIAL PORT SERIAL PORT Baud Rate: MISC. Data Bits:	DL DATA POOL SYSTEM	SAGE POOL	MES	
SERIAL PORT Data Bits: B MISC.		RT	3 SERIAL PO	IMPORT/EXPORT
M100.		8	Data Bits:	SERIAL PORT
Stop Bit(s): 1		1	Stop Bit(s):	

0	Click the System tab at the top of the page.
2	Click the SERIAL PORT option from the menu on the left-hand side of the page.
3	Enter the Baud Rate, Data Bitts, Stop Bit(s) and Parity; all the settings need be identical with the parameters used on the Modbus RTU device(s) for transferring data correctly.
4	Click the Update Settings button to save the new values and complete the configuration process

3.5. LED Brightness and Message Motion Speed adjustment

5 levels of brightness and 10 levels of message motion speed are adjustable on the iKAN series device. Smaller setting numbers are paired with brighter or higher scrolling speeds.

	MESSAGE POOL DATA POOL SYSTEM
IMPORT/EXPORT	MISC.
ETHERNET	LED Brightness
2 ERIAL PORT MISC.	This function is used to set the LED brightness. Click the Update button to update the configuration on the module. ① (Brightest) ▼ Update
	Message Motion Speed
	This function is used to set the speed that message moves. Click the Update button to update the configuration on the module. ① (Fastest) ▼
	Update

Click the **System** tab at the top of the page.

A

2

Click the **MISC.** option from the menu on the left-hand side of the page.

LED Brightness adjustment



3 Select setting number from the drop and down menu.

4 Click the Update button.

LED Brightness

This function is used to set the LED brightness. Click the Update button to update the configuration on the module.



Message Motion Speed adjustment

- 5 Select setting number from the drop and down menu.
- 6 Click the Update button.

Message Motion Speed

This function is used to set the speed that message moves. Click the Update button to update the configuration on the module.



iKAN Series Modbus LED Display User Manual Copyright © 2016 ICP DAS Co., Ltd. All Rights Reserved.

3.6. MISC.

In addition to brightness and scrolling speed adjustments, more functions including **Restore the default settings**, **Update Date & Time**, **Software Reset** and **Firmware Information** are provided on the MISC. page.







4. Messages

4.1. Editing and Managing messages

A maximum of 64 Common Messages and 10 Instant Messages can be stored on the iKAN series device, and each message can contain a maximum of 40 Unicode charcters or 100 ASCII characters. The contents of each message can be pre-configured via the Message Pool page on the web interface. The display of these messages can then be enabled or disabled using either the web interface or the Modbus TCP/RTU protocol. Note that instant messages have a higher priority than common messages, meaning that if any of the instant messages have been enabled, any scheduled common messages in the sequence will be ignored until all instant messages have been disabled.



0	Click the MESSAGE POOL tab at the top of the page.
2	Select which message you wish to access by clicking the type of message and range from the relevant menu option on the left-hand side of the page.
3	Select a vacant message slot for the message that you wish to configure.
4	In the Display column, check the checkbox to enable the contents of the message to be displayed on the iKAN series device.
5	From the Color column, select the desired color for the message. Note that the entire message will be formatted in this color on the iKAN display.
6	Enter the contents of the message in the Message text field.
7	Click the Update button to save the message settings to the iKAN series device. Note that each time the settings for a message are changed, you will need to click the respective Update button for that message.

4.2. Inserting system variables into a message

The iKAN series device allows data related to items such as the Ethernet configuration, the RTC value, and other information, to be inserted into a message as a system variable. The format for using a system variable in a message has a length of 5 bytes as follows:

1 - 2			3 - 5	
Delimite	r character	Modbus addre	ess: 3-digit deo	cimal number
%	у	Х	х	Х

The following is the Modbus register table for the system variables that can be used on the iKAN display. (Input Register, 3xxxx, 0 based)

Modbus A	ddress	Longth	Description	Value	Attributo
Decimal	Hex.	Length	Description	Range	Alu Ibule
30000 : 30003	0000 : 0003	4	The local IP address for the iKAN series device	0~256	R
30004 : 30007	0004 : 0007	4	The local Mask address for the iKAN series device	0~256	R
30008 : 30011	0008 : 000B	4	The local Gateway address for the iKAN series device	0~256	R
30012	000C	1	Year	0 ~ 9999	R
30013	000D	1	Month	1~12	R
30014	000E	1	Date	1~31	R
30015	000F	1	Abbreviated day of the week: SUN, MON, TUE, WED, THU, FRI, SAT.	0~6	R
30016	0010	1	Day of the week: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday	0~6	R
30017	0011	1	Day of the week in Chinese characters:	0~6	R

version 1.0.0 Page 27

			日、一、二、三、四、五、六。		
30018	0012	1	Hours (24-hour format)	0~23	R
30019	0013	1	Minutes	0~59	R
30020	0014	1	Seconds	0~59	R
30021	0015	1	The CO2 value from a remote	1 ~ 9999	P
50021	0013	T	DL-302	(Unit: ppm)	n
			The humidity value from a remote	1 ~ 9999	
30022	0016	1		(Unit:	R
				0.01%)	
30023	0017	1	The temperature value from a	Unit:	P
50025	0017	T	remote DL-302 in degrees Celsius	0.01°C	N
			The temperature value from a	Unite	
30024	0018	1	remote DL-302 in degrees	0.01°F	R
			Fahrenheit	0.011	
			The dew point temperature value	Units:	
30025	0019	1	from a remote DL-302 in degrees	0.01 [°] C	R
			Celsius		
			The dew point temperature value	Units:	
30026	001A	1	from a remote DL-302 in degrees	0.01°F	R
			Fahrenheit		

4.2.1. Displaying the IP Address

Modbus register addresses 30000 to 30011 can be used to read the current IP, Mask, and Gateway address values. The following is an overview of how to read these addresses.

Modbus	Address	Longth	Description	Data	Attributo
Decimal	Hex.	Length	Description	Range	Aundule
30000 : 30003	0000 : 0003	4	The IP address for the iKAN series device	0~256	R
30004 : 30007	0004 : 0007	4	The Mask address for the iKAN series device	0~256	R
30008 : 30011	0008 : 000B	4	The Gateway address for the iKAN series device	0~256	R

Refer to Section 4.1 for more information related to message configuration.

For example, the following explains how to configure a message to display the IP address for the iKAN series device in message 1.

COMMON MESSAGES

No.	Display	Color	Message	Update
1		Auto •	IP 位址:%y000.%y001.%y002.%y003	Update
1	1	1	1	
0	2	3	4	5

0	Locate a vacant message slot.
2	In the Display column, check the checkbox to enable the contents of the message to be displayed on the iKAN series device.
3	From the Color column, select the desired color for the message.
4	Enter the following string in the Message text field: IP: %y000.%y001.%y002.%y003
5	Click the Update button to save the message settings to the iKAN series device.

The IP address for the iKAN series device will be shown on the display.



4.2.2. Displaying the current Date and Time

Modbus register addresses 30012 to 30020 can be used to read the current date and time value. The following is an overview of how to read these values.

Modbus A	Address	Longth	Description	Value	Attributo
Decimal	Hex.	Length	Description	Range	Aundule
30012	000C	1	Year	0 ~ 9999	R
30013	000D	1	Month	1~12	R
30014	000E	1	Day	1~31	R
30015	000F		Abbreviated day of the week:	0~6	
		1	SUN, MON, TUE, WED, THU,		R
			FRI, SAT.		
30016	0010		Day of the week:	0~6	
		1	Sunday, Monday, Tuesday,		D
		T	Wednesday, Thursday, Friday,		N
			Saturday		
30017	0011		Day of the week in Chinese	0~6	
		1	characters:		R
			日、一、二、三、四、五、六。		
30018	0012	1	Hours (24-hour format)	0~23	R
30019	0013	1	Minutes	0~59	R
30020	0014	1	Seconds	0~59	R

Refer to Section 4.1 for more information related to message configuration.

For example, the following explains how to configure a message to display the current date for the iKAN series device in message 1:



0	Locate a vacant message slot.
2	In the Display column, check the checkbox to enable the contents of the message to be displayed on the iKAN series device.
3	From the Color column, select the desired color for the message.
4	Enter the following string in the Message text field: %y012/%y013/%y014 %y018 : %y019
5	Click the Update button to save the message settings to the iKAN series device.

The current date and time for the iKAN series device will be shown on the display.



4.2.3. Displaying the CO2 and temperature values from a remote DL-302 module

Modbus register addresses 30021 to 30026 can be used to read data from a remote DL-302 module. The following is an overview of how to read these values.

Modbus A	ddress	Length	Description	Value	Attribut
Decimal	Hex.		Description	Range	е
30021	0015	1	The CO2 value from a remote DL-302 module	1 ~ 9999 (Units: ppm)	R
30022	0016	1	The humidity value from a remote DL-302 module	1 ~ 9999 (Units: 0.01%)	R
30023	0017	1	The temperature value from a remote DL-302 module in degrees Celsius	Units: 0.01%°C	R
30024	0018	1	The temperature value from a remote DL-302 module in degrees Fahrenheit	Units: 0.01%°F	R
30025	0019	1	The dew point temperature value from a remote DL-302 module in degrees Celsius	Units: 0.01%°C	R
30026	001A	1	The dew point temperature value from a remote DL-302 module in degrees Fahrenheit	Units: 0.01%°F	R

Refer to Section 4.1 for more information related to message configuration.

For example, the following explains how to configure a message to display the CO2 and temperature data from a remote DL-302 module on the iKAN series device using message 1:

No.	Display	Color	Message	Update
1		Auto •	CO2: %y021 PPM, Temp: %y023 °C	Update
1	1	1	†	
				I

0	Locate a vacant message slot.
2	In the Display column, check the checkbox to enable the contents of the message to be displayed on the iKAN series device.
3	From the Color column, select the desired color for the message.
4	Enter the following string in the Message text field: CO2: %y021 PPM, Temp: %y023
6	Click the Update button to save the message settings to the iKAN series device.

The current CO2 and temperature values from the remote DL-302 module will be shown on the iKAN display.



4.3. Inserting variables into a message

iKAN display devices provide Modbus registers for 40 coil variables, 64 integer variables, and 64 float variables, allowing the Host PC or a PLC to read or write data via the Modbus TCP/ RTU protocol. These values can also be inserted into a message. If these inserted values are modified via a remote Host or a PLC, the value will be automatically refreshed when it is displayed on the iKAN series device.

The format for using a variable in a message is a 5-byte string as follows:

1	2		3 to 5	
Delimiter	Variable Type	Modbus Ac	dress:	
Character		3-digit decimal number		
%	b: Coil variable			
	u: Unsigned integer variable (0 ~ 65535)	v	v	v
	i: Signed integer variable (-32768 ~ 32767)	^	^	^
	f: Float variable (-3.4E+38 ~ +3.4E+38)			

4.3.1. Inserting a Coil variable into a message

A maximum of 40 Coil type variables can be stored on the iKAN series device, and are accessed using Modbus register addresses 00000 to 00039.

Coil (0xxxx, 0 based)

Modbus Address		Longth	Description	Valua Pango	Attributo
Decimal	Hex.	Length	Description	value Kalige	Alu Ibule
00000	0000	40			
:	:		Coil variable registers	0 or 1	R/W
00039	0027				

Refer to Section 4.1 for more information related to message configuration.

For example, the following explains how to configure a message to display the current date for the iKAN series device in the message at address 1:

CON	MON MESS	AGES		
No.	Display	Color	Message	Update
1		Auto •	Coil variable 0 = %b001	Update
1	1	1	1	
Ġ		Ŕ		Ġ
U	9		U	
	_			
U	Locate a vacant message slot.			
2	In the Dis	play colum	n, check the checkbox to en	able the contents of the
	message	to be displa	ayed on the iKAN series devi	ce.
3	From the	Color colu	mn, select the desired color	for the message.
		<u> </u>		
4	Enter the	tollowing s	tring in the Message text fie	eld:
	Coil varia	ble 0 = %b	001	
5	Click the	Update but	ton to save the message set	tings to the iKAN series

The value for Coil variable 1 will be shown on the iKAN display.



4.3.2. Displaying the value of a coil with replacement text

The contents of a coil variable can be either 0 or 1, which is usually used to indicate the status of the Digital Output, i.e., ON or OFF. iKAN series devices provide a string mapping function that allows the value of the coil variable to be mapped in order to make the coil value more meaningful when reading the message. The text mapping function allows a maximum of 10 Unicode characters or 30 ASCII characters to be entered to represent a value of 0 or 1.

1. Open the COIL VARIABLES page to access the data mapping function.





For example, the following explains how to configure the text mapping for the Coil variable at address 1:

0	Click the DATA POOL tab at the top of the page.
2	Click the COIL option from the menu on the left-hand side of the page.
8	Select address 1 by clicking the radio button for that address.
4	Click the Config button to open the configuration page.

2. Configure the mapping text

COIL VARIABLE PROPERTIES

No.		ON Text	OFF Text	Update	Cancel
1	Opera	ating	Stop	Update	Cancel
1		1	<u>†</u>		
Ô		2	3	9	
	0	Confirm that the	number for the coil-type va	ariable is correct.	
	2	In the ON Text co	lumn, enter the mapping te	ext in the text field for	
		when the status o	of the coil-type variable is s	et to ON status.	
	B	In the OFF Text co	olumn, enter the mapping t	ext in the text field for	
		when the status o	of the coil-type variable is s	et to OFF.	
	4	Click the Update	button to save the mapping	g settings to the iKAN	
		series device.			

The value for coil variable 1 is now replaced by the mapping text on the display.



4.3.3. Inserting an integer-type variable into a message

iKAN series devices provide Modbus registers for 64 integer variables, which can be accessed via Modbus register addresses 40000 to 40063.

Holding Register (4xxxx, 0 based)

Modbus Address		Longth	Description	Valua Danga	Attributo
Decimal	Hex.	Length	Description	value Kalige Au	Aundule
40000	0000			0~65535	
:	:	64	Integer-type variable registers.	or	R/W
40063	003F			-32768 ~ 32767	

Two methods can be used to display the integer variables in a message. The first is via a signed integer, where the valid value range is from -32768 to +32767. The second is via an unsigned integer, where the valid value range is from 0 to 65535. The Modbus register addresses for both methods are the same, 40000 to 400063. To display a variable as an unsigned integer, the format is %uxxx, and to display a variable as a signed integer, the format is %ixxx. The valid formats for inserting an integer variable into a message are %u000 to %u063, or %i000 to %i063.

1-2	3	4	5
Delimiter character Modbus Address: 3-digit decimal number		number	
%u: Unsigned integer (0 ~ 65535)		000 ~ 062	
%i: Signed integer (-32768 ~ 32767)	000 083		

Integer-type variables can be read from Modbus register addresses 40000 to 40063.

Refer to Section 4.1 for more information related to message configuration.

For example, the following explains how to insert a signed type integer variable into Modbus register 40001 using message address 1.

No.	Display	Color	Message	Update
1		Sky 🔻	Input Voltage: %i001 V	Update
1	1	1	1	G
0	2	3	4	

COMMON MESSAGES

1	Locate a vacant message slot.
2	In the Display column, check the checkbox to enable the contents of the message to be displayed on the iKAN series device.
3	From the Color column, select the desired color for the message.
	Enter the following string in the Message text field:
4	Input Voltage: %i001 V
5	Click the Update button to save the message settings to the iKAN series device.

The value for integer variable 1 will be shown on the iKAN display.

Input Voltage: 32767 V

NOTE

• Refer to Section 4.3.4 for more details about the data mapping for integer-type variables.

4.3.4. Data Mapping for Integer-type Variables

Most industrial measuring devices use 16-bit integers to convert a value from a data source to a real physical value, such as the voltage, temperature, or relative humidity, etc. For example, using the range -32768 to 36767 to convert to -10V to +10V. The iKAN series device is able to perform data mapping to translate an integer value that has been read from a remote data source to a readable physical value.

MESSAGE POOL DATA POOL SYSTEM NTEGER VARIABLES (OFFSET=40000) INTEGER FLOAT • 0 5 🔾 🖸 0 0 0 2 🔘 🛛 3 🔘 🛛 4 🔾 0 6 🔾 🛛 7 🔘 0 15 🔾 🛛 COIL 8 🔘 0) 0 10 🔾 🛛 11 🔘 🛛 12 🔘 🛛 13 🔘 🛛 🛛 14 🔍 0 19 🔘 🛛 16 🔘 🛛 0 18 🔘 🛛 20 🔘 🖸 21 🔘 🛛 22 🔘 🛛 23 🔘 🛛 24 🔘 🛛 25 🔘 🖸 26 🔘 🛛 27 🔘 🖸 28 🔘 🖸 30 🔘 🛛 31 🔘 🛛 29 🔘 🛛 32 🔘 🖸 33 🔘 🛛 34 🔘 🛛 35 🔘 🛛 36 🔘 🛛 37 🔘 🖸 38 🔘 🛛 39 🔘 🛛 41 🔘 🛛 40 🔘 🖸 43 🔘 🖸 46 🔘 🖸 47 🔘 🛛 42 🔘 🛛 44 🔘 0 45 🔘 🛛 48 🔘 🛛 49 🔘 🖸 50 🔘 🖸 51 🔘 🛛 52 🔘 🖸 53 🔘 🖸 54 🔘 🛛 55 🔘 🛛 56 🔘 🛛 57 🔘 🛛 58 🔘 🛛 59 🔘 🛛 60 🔘 🛛 61 🔘 🛛 62 🔘 🛛 63 🔘 🛛 Write 🚺 Config

1. Open the COIL VARIABLES page to access the data mapping function.

For example, the following explains how to configure the data mapping function for an integer-type variable at address 1.

0	Click the DATA POOL tab at the top of the page.
2	Click the INTEGER option from the menu on the left-hand side of the page.
3	Select address 1 by clicking the radio button for that address.
4	Click the Config button to open the configuration page.

2. Configure the arguments for the data mapping.



For example, to convert a 16-bit unsigned integer (0 to 65535) to the voltage 0 to 10 V, set the following arguments:

Argument	Value	Description	
Source Low	0	The minimum value of the integer	
Target Low	0	The minimum value of the physical value	
Source High	65535	The maximum value of the integer	
Target High	10	The maximum value of the physical value	
Decimal Places	The number of decimal places to be used for the converted value		

INTEGER VARIABLE PROPERTIES



iKAN Series Modbus LED Display User Manual Copyright © 2016 ICP DAS Co., Ltd. All Rights Reserved. version 1.0.0 Page 42 E-mail: service@icpdas.com

0	Confirm that the number for the integer-type variable is correct.
2	In the Source Low column, enter the minimum value of the integer value.
3	In the Source High column, enter the maximum value of the integer value.
4	In the Target Low column, enter the minimum value of the physical value.
5	In the Target High column, enter the maximum value of the physical value.
6	From the Decimal Places column, select the desired number of decimal places to be used for the converted value.
7	Click the Update button to save the mapping settings to the iKAN series device.

The value for integer variable 1 will be shown on the iKAN display, but will now use the scaled value text rather than the integer value.

Input Voltage: 5.00 V

4.3.5. Inserting a float-type variable into a message

iKAN series devices provide Modbus registers for 64 float-type variables, which can be accessed via Modbus register addresses 40128 to 40255. Each register consists of two addresses, so the first register address is 40128 and the second register address is 40130, and so on.

Holding Register (4xxxx, 0 based)

Modbus Address		Longth	Description	Valua Danga	Attributo	
Decimal	Hex.	Length	Description	value Kalige	Alu Ibule	
40128 :	0080 :	64	Float-type variable registers.	(-3.4E+38 ~ +3.4E+38)	R/W	
40255	00FF					

The format for using the float-type variables in a message is as follows:

1-2	3	4	5		
Delimiter character	Modbus Address: 3-digit decimal numbe				
%f	128 ~ 254				

Float-type variables can be read from Modbus register addresses 40128 to 40254 with an increment of 2.

Refer to Section 4.1 for more information related to message configuration.

For example, the following explains how to insert a float-type variable into Modbus register 40130 using message 1:

COMMON MESSAGES

	No.	Display	Color	Message		Update
	1 1		Sky V	Pressure: %f130 bar		Update 5
iKA	N Serie	s Modbus L	ED Display Us	er Manual	version 1.0.0	Page 44
Со	pyright	© 2016 ICP	DAS Co., Ltd.	All Rights Reserved.	E-mail: service@	picpdas.com

0	Locate a vacant message slot.
2	In the Display column, check the checkbox to enable the contents of the message to be displayed on the iKAN series device.
3	From the Color column, select the desired color for the message color.
	Enter the following string in the Message text field:
4	Pressure: %f130 bars
5	Click the Update button to save the message settings to the iKAN series device.

The value for float-type variable 1 will be shown on the iKAN display.

Pressure: 0.9 bars

4.3.6. Setting the number of decimal places for float-type variables

The number of the decimal places to be used for a float-type variable can be set from the **FLOAT VARIABLES** page. The offset value is 40128, which means variable 0 is equal to 40128 and variable 2 is equal to 40130, and so on.

		MESSAGE F		DATA POOL	SYSTE	M				
PLOAT VARIABLES (OFFSET=40128)										
FLOAT	0.0	2 0 0.00	4 🔍 0.0	6 🔍 0.0	8 🔍 0.0	10 🔍 0.0	12 0.0	14 🔍 0.0		
COIL	16 🔍 0.0	13 ○ 0.0	20 0.0	22 🔍 0.0	24 🔍 0.0	26 🔍 0.0	28 🔍 0.0	30 🔍 0.0		
	32 🔘 0.0	34 🔍 0.0	36 🔍 0.0	38 🔍 0.0	40 0.0	42 🔍 0.0	44 🔍 0.0	46 🔍 0.0		
	48 0 0.0	50 🔍 0.0	52 🔍 0.0	54 🔍 0.0	56 🔍 0.0	58 🔍 0.0	60 🔍 0.0	62 🔍 0.0		
	64 0 0.0 3	66 🔍 0.0	68 🔍 0.0	70 🔍 0.0	72 🔍 0.0	74 🔍 0.0	76 0.0	78 🔍 0.0		
	80 0 0.0	82 🔍 0.0	84 🔍 0.0	86 🔍 0.0	88 🔍 0.0	90 🔘 0.0	92 🔍 0.0	94 🔍 0.0		
	96 🔍 0.0	98 🔍 0.0	100 🔍 0.0	102 0.0	104 🔍 0.0	106 🔍 0.0	108 🔍 0.0	110 🔍 0.0		
	112 🔍 0.0	114 🔍 0.0	116 🔍 0.0	118 🔍 0.0	120 🔍 0.0	122 🔍 0.0	124 🔍 0.0	126 🔍 0.000		
								Write Config		
								4		

For example, the following explains how to set the number of decimal places for float-type variable 40130.

0	Click the DATA POOL tab at the top of the page.
2	Click the FLOAT option from the menu on the left-hand side of the page to open the FLOAT VARIABLES page.
в	Select address 2 by clicking the radio button for that address.
4	Click the Config button to open the configuration page.

Set the number of decimal places on the **FLOAT VARIABLE PROPERTIES** page.



The value for float-type variable 1 will be shown on the iKAN display using the specified number of decimal places.



5. Writing Variable

5.1. Using the iKAN Web Configuration Page

The built-in configuration web page on the iKAN series device allows variable values to be accessed using either the Host PC or a smartphone.

Writing a value to a coil-type variable

The following is a description of how to write the value 1 to register address 00001.

		MESSAGE	POOL	DATA POOL	SY	STEM		
INTEGER	COIL VA	RIABLES (O	FFSET=00	000)				
2 FLOAT	0 0 0	1 • 1	200	3 🔍 0	4 0	5 🔍 0	6 🔍 🛛	7 🔍 0
COIL	800	90 0	10 🔍 🛛	11 🔍 0	12 🔍 0	13 🔾 🛛	14 🔍 0	15 🔾 0
\sim	16 O O	17 🔍 🛛	18 🔍 🛛	19 🔍 🛛	20 🔍 🛛	21 🔍 🛛	22 🔍 🛛	23 🔾 🛛
	24 🔘 🛛	25 🔍 🛛	26 🔍 🛛	27 🔍 🛛	28 🔍 🛛	29 🔍 🛛	30 🔍 🛛	31 🔍 🛛
	32 🔘 🛛	33 🔍 🛛	34 🔍 🛛	35 🔍 🛛	36 🔍 🛛	37 🔍 🛛	38 🔍 🛛	39 🔍 🛛
								Write Config
			3				4	

0	Click the DATA POOL tab at the top of the page.					
2	Click the COIL option from the menu on the left-hand side of the page to					
	open the COIL VARIABLES page.					
в	Select address 00001 by clicking the radio button for the address, and					
	then enter the value 1 in the text field.					
4	Click the Write button to write the value to the Modbus register.					

Writing a value to an integer-type variable

The following is a description of how to write the value 32767 to register address 40001.

2		MESSAGE PC		data pool	SYST	ЕМ				
INTEGER	INTEGER VARIABLES (OFFSET=40000)									
FLOAT	0 0 0	1 💿 32767	2 🔍 D	3 🔍 0	4 0	5 0	6 🔾 🛛	7 🔍 0		
COIL	8 🔍 0	900	10 🔍 0	11 🔍 0	12 🔍 0	13 🔍 0	14 🔾 0	15 🔍 0		
	16 O D	17 🔍 🛛	18 🔍 🛛	19 O D	20 🔍 🛛	21 🔍 🛛	22 🔍 🛛	23 🔍 🛛		
	24 🔍 🛛	25 🔍 🛛 🗌	26 🔍 🛛	27 🔍 🛛	28 🔍 🛛	29 🔍 🛛	30 🔍 🛛	31 🔍 🛛		
	32 🔍 🛛	33 🔍 🛛	34 🔍 🛛	35 🔍 🛛	36 🔍 🛛	37 🔍 🛛	38 🔍 🛛	39 🔍 🛛		
	40 🔍 🛛	41 🔍 🛛 🗌	42 🔍 🛛	43 🔍 🛛	44 🔍 🛛	45 O O	46 🔍 🛛	47 🔘 🛛		
	48 🔍 D	49 🔍 🛛	50 🔍 🛛	51 🔍 0	52 O O	53 O O	54 🔍 🛛	55 🔍 🛛		
	56 🔍 D	57 🔍 🛛	58 🔍 🖸 👘	59 O O	60 🔍 🛛	61 🔍 🛛	62 🔍 🛛	63 🔍 🛛		
							(Write Config		
			Ŕ							
							4			

0	Click the DATA POOL tab at the top of the page.
2	Click the INTEGER option from the menu on the left-hand side of the page to open the INTEGER VARIABLES page.
3	Select address 40001 by clicking the radio button for the address and then enter the value 32767 in the text field. Note that the offset value for integer-type variables is 40000, which means address 0 is equal to 40000 and address 1 is equal to 40001, and so on.
4	Click the Write button to write the value to the Modbus register.

Changing displaying range for integer-type variables

The value stored in integer variables can be displayed in signed or unsigned format on the page. Change the displaying format by selecting the Singed/Unsigned format from the drop and down menu, and then clicking the Display button.



Writing a value to a float-type variable

MESSAGE POOL DATA POOL SYSTEM										
	2. FLOAT VARIABLES (OFFSET=40128)									
FLOAT	0.0	2 🔍 12.68	4 🔍 0.0	6 • 0.0	8 🔍 0.0	10 🔍 0.0	12 🔍 0.0	14 0 0.0		
COIL	16 🔍 0.0	18 🔍 🗤 🛛	20 🔍 0.0	22 0.0	24 🔍 0.0	26 🔾 0.0	28 🔍 0.0	30 0.0		
	32 🔍 0.0	34 🔍 0.1	36 🔍 0.0	38 🔍 0.0	40 🔍 0.0	42 🔍 0.0	44 🔍 0.0	46 0.0		
	48 🔍 0.0	50 0.0	52 🔘 <mark>0.0</mark>	54 0.0	56 🔍 0.0	58 🔍 0.0	60 0.0	62 0.0		
	64 🔍 0.0	66 🔍 0.0	68 🔍 0.0	70 0.0	72 🔍 0.0	74 🔍 0.0	76 🔍 0.0	78 🔍 0.0		
	80 🔍 0.0	82 🔍 0.0	84 🔍 0.0	86 🔍 0.0	88 🔍 0.0	90 🔍 0.0	92 🔍 0.0	94 🔍 0.0		
	96 🔍 0.0	98 🔍 0.0	100 🔍 0.0	102 🔍 0.0	104 🔍 0.0	106 🔍 0.0	108 🔍 0.0	110 0.0		
	112 🔍 0.0	114 🔍 0.0	116 🔍 0.0	118 🔍 0.0	120 🔍 0.0	122 🔍 0.0	124 🔍 0.0	126 🔘 0.000		
								Write Config		
			ß				4			

The following is a description of how to write the value 12.68 to register address 40130

0	Click the DATA POOL tab at the top of the page.
2	Click the FLOAT option from the menu on the left-hand side of the page to open
	the FLOAT VARIABLES page.
ß	Select address 40130 by clicking the radio button for the address and then enter
	the value 12.68 in the text field. Note that the offset value for float-type
	variables is 40128, which means address 0 is equal to 40128 and address 1 is
	equal to 40129, and so on.
4	Click the Write button to write the value to the Modbus register.

5.2. Using the Modbus TCP/RTU protocol

iKAN series devices allow coil-, integer-, and float-type variables to be accessed via a Host PC, PLC, or SCADA host using the Modbus TCP/Modbus RTU protocol. The following is an overview of the Modbus registers provided for the iKAN device:

The built-in configuration web page on the iKAN series device allows variable values to be accessed using either the Host PC or a smartphone.

Coil-type Variables (0xxxx, 0 based)

Modbus Address		Longth	Description Value Pange		Attributo
Decimal	Hex.	Length	Description	value Kalige	Aundule
00000	0000				
:	:	40	Coil-type variable registers	0 or 1	R/W
00039	0027				

Integer-type variables (4xxxx, 0 based)

Modbus Address		Longth	Description	Valua Dango	Attributo
Decimal	Hex.	Length	Description	value Kalige	Aundule
40000	0000			0~65535	
:	:	64	Integer-type variable registers	or	R/W
40063	003F			-32768 ~ +32767	

Float-type variables (4xxxx, 0 based)

Modbus Address		Longth	Description	Valua Dango	Attributo
Decimal	Hex.	Length	Description	value Ralige	Au Ibule
40128 : 40255	0080 : 00FF	64	Float-type variable registers	(-3.4E+38 ~ +3.4E+38)	R/W

NOTE

• Refer to Appendix B for full details related to the Modbus register table.

6. Firmware Update

6.1. Downloading the Latest Firmware

ICP DAS will continue to update the iKAN firmware for more useful functions and better performance. The latest firmware can be obtained from:

http://ftp.icpdas.com/pub/cd/ikan/firmware/

The firmware version is listed at the bottom of the MISC.page. You can check the version here to see if the iKAN series device needs a firmware update.



6.2. Installing eSearch utility

The eSearch Utility is developed for searching ICP DAS Ethernet I/O modules based-on MiniOS7 which are connected to the same subnetwork as the Host PC, configuring the Ethernet parameters such as IP address, subnet mask and gateway etc., or updating firmware. The eSearch Utility obtained either from the following link:

http://ftp.icpdas.com/pub/cd/tinymodules/napdos/software/esearch/

6.3. Updating firmware

NOTE

- Before launching the eSearch Utility, remember to disable (turn off) the firewall to avoid searching error.
- The iKAN series device needs be connected to the same subnetwork as the Host PC; otherwise, the iKAN device can be searched, but not download firmware.
- 1. Launch eSearch utility and click the Search Server button.

of eSearch Ut	tility [v1.1.12	, Dec.02, 2015]				
<u>File S</u> erver <u>1</u>	Lools					
Name	Alias	IP Address	Sub-net Mask	Gateway	MAC Address	DHCP
<						>
AA Sear	ch Canvar	Configuration	and 🔬 .	Wah Evit		
Sear	cil server					
Status						

2. The search result will be listed on the utility. One iKAN series device has two components: the first one is the module name like iKAN-116, and the second one is the control unit in the display named as Web LED. The IP address for the Web LED control unit is auto set to the next IP address after the iKAN device.

a eSearch Utility [v1.1.12, Dec.02, 2015]						
<u>F</u> ile <u>S</u> erver <u>T</u> o	ools					
Name	Alias	IP Address	Sub-net Mask	Gateway	MAC Address	DHCP
iKAN-116 Web LED	LED Display N/A	10.1.0.150 10.1.0.151	255.255.0.0 255.255.0.0	10.1.0.254 10.1.0.254	00:0d:e0:00:00:72 00:0d:e0:81:01:23	OFF OFF
<						
Status	ch Server	Configuration (UDPJ 🧭	Web	Exit	

3. Right-click the item Web LED and select Firmware Update option on the pop-up menu.

	🥩 eSearch Utility [v1.1.12, Dec.02, 2015]						
	<u>File S</u> erver <u>T</u> o	ools					
	Name	Alias	IP Address	Sub-net Mask	Gateway	MAC Address	DHCP
	ikan-118	LED Display	10.1.0.150	255.255.0.0	10.1.0.254	00:0d:e0:00:00:72	0FF
(Web LED	N/A ////Ping Ser	ver	255.255.0.0	10.1.0.254	00:0d:e0:81:01:23	OFF
	Right Click						
	<u><</u>						>
	Searce	ch Server	Configuration (UDPJ 🦉	Web	Exit	
	Status						

4. Select the firmware file and then click the Open button

開啓					? 🛛
查詢(]):	🗀 iKAN-116		•	(† 🖻 🔿	
	eFW116_v10	0.dat			
	檔名(<u>N</u>):	eFW116_v100.dat		-	
	檔案類型(<u>T</u>):	firmware file (*.dat)		•	取消

5. Confirm the update information and then click the OK button.

Firmware Update (Tiny Module only)	×
File Name j\iKAN-116\iKAN-116\eFW116_v100.dat	
Note: This IP Address is depending on your network, while the MAC address in depending on your device.	
IP Address 10.1.0.151 For Updating	
MAC Address 00:0d:e0:81:ab:cd MAC Finder	
OK Cancel	

6. If you see a firewall warning, click the Unblock button.

indows 安全性警示
● 「「「「「「」」」 「「」」」 「「」」」 「「」」」 「「」」」 「「」」」 「」」」 「」」」 「」」」」」 「」」 「」」」 「」」」 「」」」」 「」」」」 「」」」」 「」」」 「」」」 「」」 「」」」 「」」 「」」 「」」 」 「」」」 「」」 「」」 「」」 」 」 」 」 「」」 「」」 」 」 「」」 「」」」 「」」 」 」 「」」 」 」 」 「」」」 「」」」 「」」」 「」」」 「」」」 「」」」 「」」」 「」」」 「」」」 「」」」 「」」」 「」」」 」 」 」 」 」 」 」 」 」 」 」 」 」 」 」 」 」 」
是否要保持對這個程式的封鎖?
□ 名稱(M): eflash 發行人(P): 未知
保持封鎖(近) 解除封鎖(①) 稍後詢問我(A)
Windows防火牆已封鎖這個程式接收來自網際網路或網路的連線。如果您知 曉這個程式或信任這個發行者,您可以解除對它的封鎖。 我應該在什麼時候解除對某個程式的封鎖?

7. Wait for the download window to appear.



8. Set the Normal/Init switch to Init position and power cycle the iKAN device.



9. Wait until you see the **% Complete: 100 %** message, set the Normal/Init switch to **Normal** position and power cycle the iKAN device again. Now you can check the new fimeware version on the MISC. page.



7. FAQ

7.1. How to obtain the IP address for the iKAN device?

If you need to obtain the IP address for the iKAN when it is displaying messages, set the **Normal/Init** switch to **Init** position without power cycling the device, the IP address will be showed on the iKAN display.



Appendix A: Instruction for Inserting Variable

Five types of instruction for inserting variables into a message are provided, each consists of 5 characters. The following is an overview of the format and valid value range for each type.

1	2		3 to 5	
Delimiter Character	Variable Type	Modbus A 3-digit de	Address: cimal numl	per
	b: Coil			
	u: Unsigned integer (0~65535)			
%	i: Signed integer (-32768~32767)	X X		Х
	f: Float (-3.4E+38 ~ +3.4E+38)			
	y: System			

The valid range for each type of variable is:

Variable type	Range
Coil Variables	%b000 to %b039
Integer Variables	%u000 to %u063
integer variables	%i000 to %i063
Float Variables	%f128 to %f254
System Variables	%y000 to %y026

Appendix B: Modbus Register Tables

Coil-type variables (0xxxx, 0 based)

Modbus Address		Longth	Description	Value Range	Attributo
Decimal	Hex.	Length	Description	Value Kange	Attribute
00000	0000	40	Coil-type variables	-	R/W
:	:				
00039	0027				
00100	0064	64	Enables or disables the display of	0. Disablad	R/W
:	:			1. Enchlad	
00163	00A3		common messages 0 63.	T: Ellapled	
00228	00E4	10	Enables or disables the display of	0: Disabled	R/W
:	:				
00237	00ED		instant messages 0 ° 9.	т: спаріео	

System variables (3xxxx, 0 based)

Modbus Address		Length	Description	Value Pango	Attributo
Decimal	Hex.		Description	value Kalige	Allibule
30000 : 30003	0000 : 0003	4	The IP address for the iKAN series device	0~256	R
30004 : 30007	0004 : 0007	4	The Mask address for the iKAN series device	0~256	R
30008 : 30011	0008 : 000B	4	The Gateway address for the iKAN series device	0~256	R
30012	000C	1	Year	0 ~ 9999	R
30013	000D	1	Month	1~12	R
30014	000E	1	Day	1~31	R
30015	000F	1	Abbreviated day of the week: SUN, MON, TUE, WED, THU, FRI, SAT.	0~6	R
30016	0010	1	Day of the week: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday,	0~6	R

			Saturday		
30017	0011	1	Day of the week in Chinese characters: 日、一、二、三、四、五、六。	0~6	R
30018	0012	1	Hours (24-hour format)	0~23	R
30019	0013	1	Minutes	0~59	R
30020	0014	1	Seconds	0~59	R
30021	0015	1	The CO2 value from a remote DL-302 module	1 ~ 9999 (Units: ppm)	R
30022	0016	1	The humidity value from a remote DL-302 module	1 ~ 9999 (Units: 0.01%)	R
30023	0017	1	The temperature value from a remote DL-302 module in degrees Celsius	Units: 0.01%°C	R
30024	0018	1	The temperature value from a remote DL-302 module in degrees Fahrenheit	Units: 0.01%°F	R
30025	0019	1	The dew point temperature value from a remote DL-302 module in degrees Celsius	Units: 0.01%°C	R
30026	001A	1	The dew point temperature value from a remote DL-302 module in degrees Fahrenheit	Units: 0.01%°F	R

Modbus Address		Longth	Description	Value Range	Attributo
Decimal	Hex.	Length	Description	value nalige	Allibule
40000	0000				
:	: 003E	64	Integer-type variables	0 ~ 65535	R/W
40003	0080				
:	:	64	Float-type variables	-3.4E+38 ~ +3	R/W
40255	00FF			.4E+38	
40384	0180		Data mapping arguments: Source Low	0~65535	R/W
:	:	64			
40447	01BF				
40512	0200		Data mapping arguments: Source High	0~65535	R/W
:	:	64			
40475	023F				
40640	0280	64	Data mapping arguments: Target Low	0~65535	R/W
40703	02BF				
40768	0300				
:	:	64	Data mapping arguments: Target High	0~65535	R/W
40831	033F				
40896	0380	64	Data mapping arguments: Decimal Places	0~2	R/W
:	:				
40959	03BF				
41024	0400	64	Decimal Places for float-type variables	1~3	R/W
: 11097	: 042E				
41087	0431			1. Blue	
:	:	64	Color for common messages 0 ~ 63	2: Green 3: Sky Blue	R/W
41471	05BF	64			
41526	0600			4: Red	
41530		10	Color for instant messages 0 ~ 9	5: Purple	
41545	0609			6: Yellow	R/W
00				7: White	
41600	0640			8: Kandom	
41000	0040	1	Brightness for the display, a smaller	0~4	R/W
			number means a brighter screen		,
41601	0641	1	Message scrolling speed, a smaller	0~0	R/\//
		T	number means a higher speed	0 9	17 1

Integer-type variables/Float-type variables/misc. (4xxxx, 0 based)

Revision Record

Version	Date	Description
1.0.0	2016/10	Initial release