

# **IMRS**

### (Internet-linked Multi-site Repeater System)

# **Setup Software**

for the DR-2X/DR-2XE

# **Instruction Manual**

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Important Notice: You assume full responsibility for the use of the IMRS Setup Software.

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### **Before Using**

This IMRS Setup Software is personal computer software used to setup a LAN-01A LAN Unit installed in a DR-2X/ DR-2XE Repeater by connecting to the personal computer.

#### Important

Before downloading this software, please read the "Important Notes" carefully.

Downloading or installing this software will be taken as indicating your agreement with the contents of the "Important Notes".

#### **Important Notes**

- All responsibility for the use of this software lies with the customer. We cannot be held responsible in any way for any damages or losses which may be incurred by the customer as a result of using this software.
- Copyrights and all other intellectual property rights for the software, as well as the software manual, are the property of YAESU MUSEN CO., LTD.
- The revision, modification, reverse engineering, and decompiling of this software is prohibited. Redistribution, transfer, and resale of downloaded files are also prohibited.
- Downloaded files may only be used for personal use.

#### Package contents

•	LAN-01A LAN Unit	1
	Internal Connection Cable (LAN-01A to RELAY-UNIT)	
•	Screws HSM3X6NI (U04306002)	4
	USB A to Micro B USB Cable (T9101648)	

#### System Requirements (Operating Environment)

#### Supported Operating Systems

- Microsoft<sup>®</sup> Windows<sup>®</sup> 10 (32 bit/64 bit)
- Microsoft<sup>®</sup> Windows<sup>®</sup> 8.1 (32 bit/64 bit)
- Microsoft<sup>®</sup> Windows<sup>®</sup> 7 (32 bit/64 bit)

This reference manual was created using the Windows<sup>®</sup> 10 operating system. Operations and screen examples may vary based on your operating system.

#### CPU

CPU which satisfies OS (operating system) requirements

#### RAM (System Memory)

Sufficient RAM (system memory) to meet or exceed the OS (operating system) requirements

#### HDD (Hard Disk)

HDD (hard disk) capacity meeting or exceeding OS (operating system) requirements

#### Ports

#### USB port (USB1.1/USB2.0)

Do not connect the USB cable to your personal computer and the LAN-01A LAN Unit before the "USB Driver" installation is completed, because the wrong driver may be installed.

#### **USB Driver**

Install the LAN-01A USB Driver in the personal computer before beginning the setup LAN-01A process.

#### Internet connection (When connecting via the Internet)

- ADSL 8 Mbps or faster (high-speed connection recommended)
- Global IP address (static global address is essential)
- All of the following one UDP (user datagram protocol) port must be connectable: Port Number: 21110 (default)



When using a router: a network address and port translation (NAPT) are necessary

#### LAN (When connecting via the Local Area Network)

• 10BASE-T (100BASE-T or more high-speed network recommended)

### About this manual

Reference icon symbols and conventions are used in this manual. Their meanings are described in the below chart.

Symbols	Description				
l	This icon indicates cautions and information that should be read.				
	This icon indicates notes, tips and information that should be read.				
	This icon indicates other pages containing relevant information.				

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### Installing the LAN-01A LAN Unit to DR-2X/DR-2XE

- 1. Turn the DR-2X/XE [POWER] switch to "OFF".
- 2. Disconnect all the cables from the DR-2X/XE.
- 3. Remove the 4 screws from each side and 7 screws from the top cover of the DR-2X/XE, then remove the top cover.



4. Referring to "Figure 1", remove the blank plate covering the LAN source connector.

Figures in this page show the outline of the DR-2X.



Figure 1

5. Referring to "Figure 2", connect the supplied cable to the LAN-01A connector (CN3).

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Slide switch (SW1) to the left when updating the LAN-01A firmware. To update the firmware, connect the micro USB Jack to a computer.
For normal use, slid (SW1) to the right side (see figure 2).



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6. Position the LAN-01A to match the boss with four screw holes, so that the unit will not interfere with the other cables.

7. Attach the LAN-01A using the supplied four screws.



**IMRS** Instruction Manual

- 8. Connect the opposite end of the cable connected to LAN-01A to the connector (J6016) of the RELAY-UNIT.
- 9. Move the slide switch (S6013) toward the "LAN" side. ("Left" side as shown in figure 5.)
  - LAN side: The LAN-01A is enabled, the IMRS function and Voice Message function of C4FM Digital is available.
  - NORMAL side: The ACC Jack is enabled, connecting the HRI-200 and the PC to update the DR-2X/XE firmware.
- 10. Replace the DR-2X/XE top cover, and install the 15 screws.





### Preparation

In order to connect the DR-2X/XE to the Internet or LAN, using the built-in LAN-01A unit, it is necessary to connect a personal computer to the DR-2X/XE and make the required settings with dedicated software. In order to make the configuration settings, please prepare the following items in advance.

#### • Install the LAN-01A in the DR-2X/XE by referring to instructions on page 3

Use the personal computer to configure the settings for all DR-2X/XE connected to the Internet. It is useful to decide the call sign, DG-ID number, DG-ID group setting etc. to be used for each DR-2X/XE beforehand. Refer to the DR-2X/XE instruction manual for these setting procedures.

#### Prepare a computer using Microsoft Windows® 7, 8.1 or 10

Download the USB driver, and the IMRS setting software to the PC.

Download the USB driver for connecting the DR-2X/XE to the PC. Please download from our website (http://yaesu.com/).

File name: IMRSLAN\_USBdriver\*\*\*\*.zip (\*\*\*\*Is the version number)

Please download IMRS setting software from our website (http://yaesu.com/).

File name: IMRSLAN\_USBdriver\*\*\*\*.zip (\*\*\*\*Is the version number)

Do not connect the USB cable to your personal computer and the LAN-01A LAN Unit before the "USB Driver" installation is completed, because an incorrect driver may be installed.

#### Acquire the global IP address of DR-2X/XE

Since you need a static global IP Internet address, please obtain it from the Internet provider that is being used.

#### • Connect the personal computer using the USB cable supplied with the LAN-01A.

#### • After downloading the USB driver to the PC, install it to the personal computer.

- 1. Start up the PC and close all applications if other applications are running.
- 2. Unzip the previously downloaded USB driver "IMRSLAN\_USBdriver \*\*\*\*. Zip" (\*\*\*\* is the version number). When unpacking the "IMRSLAN\_USBdriver \*\*\*\*", a folder containing the USB driver is automatically generated.

3. Open the "IMRSLAN\_USBdriver\*\*\*\*" folder and double click on "Install.exe".

File Home SI		ication Tools IMRSLAN Manage			- □ ×
Pin to Quick Copy Pas access Clipbo	Paste shortcut	Move to  Copy to  Copy to  Copy to	- f]-	Deperties ↓ Edit ↓ History Open	Select all Select none Invert selection Select
$\leftarrow \rightarrow \checkmark \uparrow \square$	This PC > Downloa	ds > USBdriver > IMRS	LAN v	5 V	م
<ul> <li>✓ Quick access</li> <li>✓ Desktop</li> <li>✓ Downloads</li> <li>☑ Documents</li> <li>☑ Pictures</li> <li>✓ Music</li> <li>☑ Videos</li> <li>✓ OneDrive</li> </ul>	Name Autorun imrslan imrslan Ims Install R SetupMenu R SetupMenu		Date modified           22/03/2011         21:29           21/03/2011         19:51           21/03/2011         19:25           20/07/2011         11:43           20/07/2011         11:43           20/07/2011         11:43	Type Setup Informatio Security Catalog Setup Informatio Application Application Application	ue 8 KB
<ul> <li>This PC</li> <li>Network</li> <li>6 items 1 item select</li> </ul>	ted 19 MB				

4. When the "User Account Control" dialog box opens, click the left mouse button on [Yes].

😌 User Accou	nt Control	×
? Do yo PC?	u want to allow	this app to make changes to your
	Program name: Verified publisher: File origin:	OS checker for YAESU Driver installer YAESU MUSEN CO., LTD. Hard drive on this computer
Show <u>d</u> eta	ils	Yes No
		Change when these notifications appear

5. The dialog box, which is shown below, will open. Click the left mouse button on [IMRS LAN-01A USB Driver Setup], to initiate the driver installation.



6. When the "Windows Security" dialog box opens, click the left mouse button on [Install].

E Windows Security	×
Would you like to install this device software?	
Name: Yaesu Musen Co., Ltd. Ports (COM & LPT) Publisher: YAESU MUSEN CO., LTD.	
Always trust software from "YAESU MUSEN CO., Install Don't Ir LTD.".	nstall
You should only install driver software from publishers you trust. <u>How can I decide v device software is safe to install?</u>	<u>vhich</u>

7. When the "Connect LAN-01A to USB Port" is displayed, press the "J" side of the POWER switch to turn the DR-2X/XE ON, and then connect the computer and the micro USB jack of the LAN-01A via the supplied USB cable.



The computer will recognize the new hardware and automatically begin device driver installation.

- 8. When "Your devices are ready to use" appears, installation has been completed.
- 9. Click the left mouse button on [OK].



10. Click the left mouse button on [Close].

	Driver installer (64bit)	
M TAESU	J Driver installer (64bit)	^
	IMRS LAN-01A US	B Driver Setup
		Driver version - 1.100
	Refer to folder	Close

This completes the setup of the LAN-01A USB Driver Setup.

Confirm that the USB driver is installed correctly.

11. Right-click the Windows<sup>®</sup> "Start" button, and then Click "Device Manager".



- 12. On the Device Manager screen, double-click "Port (COM & LPT)".
- 13. When "IMRS-LAN Device (COMxx)" (xx=Comm Port Number) is displayed, the LAN-01A and computer are connected correctly.

🚔 Device Manager	_	×
<u>File</u> <u>Action</u> <u>View</u> <u>H</u> elp		
🗢 🔿 📰 🖾 🖬 🖉 🖬 🥀 🞼		
> 🕞 Other devices		~
> Dortable Devices		
✓ Ports (COM & LPT)		
Communications Port (COM1)		
ECP Printer Port (LPT1)		
IMRS-LAN Device (COM)		
> 🚍 Print queues		
> Processors		
> Software devices		~
4		

14. Click [X] on the top right side of the window to close the Device Manager.

#### • Uninstall USB Driver from PC

- 1. Turn the DR-2X/XE ON, and then connect the computer and the LAN-01A micro USB jack via the micro USB cable.
- 2. Right-click the Windows<sup>®</sup> "Start" button, and then Click "Device Manager".



- 3. On the Device Manager screen, double-click "Port (COM & LPT)".
- 4. Right-click "IMRS-LAN Device (COMxx)" (xx=Comm Port Number).
- Click the left mouse button on "Uninstall". The "Confirm Device Uninstall" dialog box opens.

🚔 Device Manager		772		×
File Action View Help				
	📴 🖳			
> 📃 Network adapters				^
> 🐚 Other devices				
> 🔟 Portable Devices				
Ports (COM & LPT)				
The Communications Po	ort (COM1)			
ECP Printer Port (LP	T1)			
IMRS-LAN Device (O	(OM4)			
> 🚍 Print queues	Update Driv	ver Softw	are	
> Processors	Uninstall			
> D Software devices				_
	Scan for ha	rdware c	hanges	
Uninstalls the driver for the selected	Properties			
	roperties			

6. Put a check-mark in the "Delete the driver software for this device." check box, then click [OK].



7. "IMRS-LAN Device (COMxx)" will not be displayed in "Ports (COM & LPT)". This completes uninstallation. • After downloading the IMRS setting software to the personal computer, install it to the personal computer. Install the software to the personal computer to configure multiple DR-2X/XE repeaters and connect them via the Internet or LAN.

- 1. Start up the PC and close all other applications that are running.
- 2. Unzip the previously downloaded USB driver "IMRSLAN\_USBdriver \*\*\*\*. Zip" (\*\*\*\* is the version number). When unpacking, the "IMRSStup\*\*\*\*", a folder containing the IMRS setting software is automatically generated.

- I 🖉 📴 = I	Application Tools	IMRSStup		8_	- 🗆 X
File Home Share	View Manage				~ 🕐
$\leftarrow \rightarrow - \uparrow$ hi	is PC > Downloads > IMRSStu	qu	~ 0	Search IMRSStup1	م 000
📌 Quick access	Name		Date modified	Туре	Size
📃 Desktop 🛷	CommLib.dll		26/03/2011 17:37	Application extens	M KB
👆 Downloads 🛛 🖈	🔛 IMRSStup		26/03/2011 17:37	Application	I III KB
🗄 Documents 🖈					
E Pictures 🖈					
Music					
Videos					
🐔 OneDrive					
💻 This PC					
💣 Network					
2 items 1 item selected	тКВ				

This completes the setup of the IMRS Setup software.

#### • Uninstall the IMRS setting software from the PC

- 1. Delete the folder that contains the saved files.
  - The operation will end if the folder is deleted since no data will be written to the registry and system folder.

#### Preparation before using IMRS setting software

To configure multiple DR-2X/XE repeaters with LAN-01A units for connection via the Internet or LAN, use a personal computer with the supplied USB cable. Also, in order to read information such as the IP address, and the necessary settings, connect the DR-2X/XE to the Internet router or LAN with a commercially available LAN cable.



Make sure to take security measures against interception and unauthorized access by using an Internet router or a security service from the Internet service provider.

#### Router settings

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If you do not use a router, this setting is not necessary, so proceed to "Operation of IMRS setting software" on page 17.

Since the protocol UDP (User Datagram Protocol) is used for IMRS communications via the Internet, some menu settings are required depending on the Internet connection method.

The IMRS communicates with the LAN-01A via specified port 21110 (default). DO NOT CHANGE the "21110" UDP port setting. Also you should set the router firewall to open the UDP port "21110".

When using a router to connect the PC to the Internet, the UDP port must go through the router as well; however, communications using this port is generally prohibited on commercially available routers in the default setting. Therefore, if you are using a router, make sure that the port is "open" for passing UDP traffic.

- 1. Connect a DR-2X/XE to the internet line via a router with a commercially available LAN cable.
- 2. Press the "I" side of the POWER switch to turn the repeater ON.
- 3. Open the "IMRSStup \*\*\*\*" folder and double click on "IMRSStup.exe".

🖌 🚽			Application Tools	IMRSStup			۶.		
File Home	Share	View	Manage						~
← → ~ <b>↑</b>	> This	PC > Dov	wnloads > IMRSSt	up	~	Ö	Search IMRSStup	1000	
🖈 Quick access		Name	^		Date modified		Туре	Size	
Desktop	*	Comr	nLib.dll		26/03/201117:37		Application extens		🖿 KB
🕹 Downloads	*	🖳 IMRSS	Stup		26/03/201 17:37		Application		I 🗆 КВ
Documents	×								
Pictures	*								

The "IMRS Setup software" will start.

Repeater Information				
Callsign: Repeater:		rare Version: 1.0.0 AC Address: Local IP:		Interface: USB
CPU F/W Version:			Settings	
DST/TYP:		DG-ID List	Load Setup File	Read from Device
IP Setting:		Search Repeaters	Save Setup File	Write to Device
stination Repeater's Informati	on			
□ 001	□ 002	□ 003	004	
005	□ 006	□ 007	□ 008	
005				
□ 005	L 010	□ 011	□ 012	
			□ 012	
	□ 014	C 015		

4. A popup window will be displayed. Click the [OK] button.

IMRS Setup		×
() will	you read parameters fro	om IMRS ?
	ОК	Cancel

If the pop-up screen does not open or the [Read from Device ...] button is grayed out, there is a problem with the connection between the LAN-01A and the computer. Please insure the USB cable connection and USB device driver are correctly installed.

- 5. When "read completed" is displayed, click the left mouse button on [OK].
- 6. Click the left mouse button on [Settings...]

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My Repeater Informat	ion	Firmware Version:	1.0.0		Interface: USB
Callsign: Repeater: CPU F/W Version: DST/TYP:	DR-2X 1.000 (20170413)	MAC Address: Local IP:	00-01-25-77-70-00 DHCP	Settings	
IP Setting:	EXP #1		DG-ID List	Load Setup File Save Setup File	Read from Device Write to Device
Destination Repeater's	s Information				^
□ 001	□ 002		003	004	
□ 005	□ 006		□ 007	008	

The "Settings" screen appears.

etwork Configuration –	Прнср
Local IP Address:	192 . 168 . 0 . 203
Subnet Mask:	255 . 255 . 255 . 0
Gateway Address:	192 . 168 . 0 . 1
UDP Port No:	21110
	Password Lock
	Password Lock

If a check mark is displayed in the "DHCP" (Dynamic Host Configuration Protocol) check box, settings can be acquired automatically by the DHCP function using the following procedure:

When the check mark is not displayed in the "DHCP" check box, settings can be acquired automatically by the DHCP function using the following procedure:

1. Put a check-mark in the "DHCP" check box. on the setting screen.

- 2. Click [OK]. 3. Click [Write 4. Click [OK]
  - 3. Click [Write to Device...] on the main screen.
  - 4. Click [OK] to open the popup window.
    - 5. When the "write completed" screen is displayed, click the [OK] button.
  - 6. Press the "O" side of the POWER switch to turn the repeater OFF.
  - 7. Wait for about 5 seconds then press the " I " side of the POWER switch to turn the repeater ON.
  - 8. Please start with step 2 of the above procedure again.

#### 7. Write down the "Local IP Address" and "UDP Port No" values.

Be sure to write them down as they are necessary when configuring the router.

Network Configuration –	
	✓ DHCP
Local IP Address:	192 . 168 . 0 . 203
Subnet Mask:	255 . 255 . 255 . 0
Gateway Address:	192 . 168 . 0 . 1
UDP Port No:	21110
	1

8. Remove the check-mark in the "DHCP" check box, then click the left mouse button on [OK].

If a new IP address is assigned automatically to the LAN-01A by the DHCP function of the router, the address may be different from the one specified on the router. It disables IMRS communications.

To enable communications, assign a static IP address to the LAN-01A and specify this address when opening ports on the router.

Сонср
192 . 168 . 0 . 203
255 . 255 . 255 . 0
192 . 168 . 0 . 1
21110
Password Lock
ок

9. Click the left mouse button on [Write to Device...].

IMRS Setup				– 🗆 X
My Repeater Information	MAC	Version: 1.1.0 Address: 00-11-25-FF-PC-100 Local IP: DHCP		Interface: USB
CPU F/W Version: 1.808 (20170412 DST/TYP: 807 #1	)	DG-ID List	Settings	Read from Device
IP Setting: Fixed IP mode		Search Repeaters	Save Setup File	Write to Device
Destination Repeater's Information				^
□ 001	□ 002	003	004	
□ 005	□ 006	007	008	
□ 009	□ 010	011	□ 012	
□ 013	□ 014	□ 015	016	
□ 017	□ 018	□ 019 <u> </u>	020	
□ 021	□ 022	C 023	□ 024	~

10. When the popup window opens, click the left mouse button on [OK] to write to the LAN-01A.



11. A notice "write completed" is displayed, then click the left mouse button on [OK].

In "Advance", in the "NAT", "Port mapping" or "IP Masquerade", set the following contents on your router.

- Service Port: 21110
   Protocol: UDP
- Protocol:

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- Status: Enabled
- IP Address: Local IP Address of the LAN-01A (Enter the IP address you wrote down in step 7 of "Router settings".

When using a router to connect the DR-2X/XE to the Internet, refer to the instruction manual supplied with the router for information about attaching the repeater to the router, and the router to the Internet using LAN cables.

Also, refer to the instruction manual supplied with your router to perform the initial router configuration. Users generally access the IP address of the router using a web browser on the PC to configure the various settings on the displayed setup screen.

#### Setting the repeaters to connect via the network

It is possible to set up to 100 repeaters connected via the network. It must be set individually for all connected DR-2X/XE.

- 1. Press the "I" side of the POWER switch to turn the repeater ON.
- 2. Open the "IMRSStup \*\*\*\*" folder and double click on "IMRSStup.exe".

- I 🔽 📑 = I			Application Tools	IMRSStup			8		
File Home	Share	View	Manage						~
$\leftrightarrow \rightarrow \sim \uparrow$	→ Thi	s PC → Do	wnloads > IMRSSt	up	~	Ö	Search IMRSStup	1000	Q
🖈 Quick access		Name	^		Date modified	1	уре	Size	
Desktop	*	Comr	mLib.dll		26/03/201 17:37	A	Application extens		M KB
🕹 Downloads	*		Stup		26/03/201 17:37	Å	Application		1 ITT KB
Documents	*								
Pictures	*								

The "IMRS Setup software" will start.

Repeater Information					
Repeater information	Firn	nware Version:		Interface: USE	
Callsign:		MAC Address: Local IP:			
Repeater: CPU F/W Version:					
DST/TYP:			Settings		
		DG-ID List	Load Setup File	Read from Device	
IP Setting:		Search Repeaters	Save Setup File	Write to Device	
□ 001	□ 002	□ 003	004		
□ 005	L 006	L 007	008		
□ 005 □ 009		□ 007 □ 011			
	□ 010	□ 011	□ 012		
□ 009	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □		□ 012		

3. A popup window will be displayed. Click the [OK] button.

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If the pop-up screen does not open, or the [Read from Device ...] button is grayed out, there is a problem with the connection between the LAN-01A and the computer. Make sure that USB cable connection and USB device driver are correctly installed.

4. A notice "read completed" is displayed, then click the left mouse button on [OK]. The setup of LAN-01A and the information of the DR-2X/XE will be displayed on the main screen. 5. From [Destination Repeater's Information], click the button (001 to 100) for which you want to register the DR-2X/ XE to be connected.

The "Destination Repeater Setting" screen appears.

IMRS Setup					– 🗆 X
– My Repeater Informat Callsign: Repeater:	JETAGI (JYDEE)	Firmware Version: MAC Address: Local IP:	00-01-25-67-60-00		Interface: USB
10.00 - 0.000 - 0.000 - 0.000 - 0.000	1.000 (20170413)	1	DG-ID List	Settings Load Setup File	Read from Device
IP Setting:	Fixed IP mode	Sear	rch Repeaters	Save Setup File	Write to Device
Destination Repeater's	□ 002 □ 002 □ 006 □ 006 □ 006 □ 006 □ 006 □ 006		□ 003 □ 007 □ 007 □ 011 □ 015	□ 004 □ 004 □ 008	
□ 017 □ 021	□ 015			□ □ 020 □ □ □ 024 □	

- 6. Set the global IP address of the connected repeater then click the left mouse button on [OK]
  - To connect to another repeater (destination repeater), set the global IP (WAN) in the "IP Address box".
  - You should find the global IP address from the destination repeater. Do not use the local IP address.
  - In order to connect via the Internet, it is necessary to set up the static global IP address
  - To connect using the local area network, set the local IP address set for LAN-01A.

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Destination Repeater	r Setting (N	o.001)							×
Callsign Radio ID IP Address Memo	: 192	. 168 .	0 . 20	2		T DG-ID:			
- DG-ID table									
00 〇	01	02	03	04	0 05	0 06	07	08	09
O 10	O 11	O 12	O 13	0 14	0 15	0 16	0 17	O 18	O 19
O 20	0 21	0 22	0 23	0 24	0 25	0 26	0 27	0 28	0 29
O 30	0 31	0 32	0 33	0 34	0 35	0 36	0 37	0 38	0 39
0 40	0 41	0 42	0 43	0 44	0 45	0 46	0 47	0 48	0 49
0 50	0 51	0 52	0 53	0 54	0 55	0 56	0 57	0 58	0 59
0 60	0 61	0 62	0 63	0 64	0 65	0 66	0 67	0 68	0 69
0 70	071	0 72	0 73	0 74	0 75	0 76	0 77	0 78	0 79
0 80	0 81	0 82	0 83	0 84	0 85	0 86	0 87	0 88	0 89
90	<b>○</b> 91	O 92	<b>○ 93</b>	0 94	O 95	0 96	0 97	98	O 99
			Dele	te		Cancel		(	ж

The entered IP address is displayed.

estination Re	epeater's Information
□ 001	(192.168.0.202)

7. Repeat steps 5 through 6 to set up all repeaters to be connected, then put the check-marks in the numbered check box of each "Repeater" to connect.

- Destination Rep	eater's Information	
001	(192.168.0.202)	

8. Click the left mouse button on [Write to Device...].

MRS Setup								-	
Repeater Info	ormation		Firmware Ve	rsion: 1.11				Interface:	USB
Calls Repea	sign: JURAD (JOHN) ater: DR-2X			dress: IIQ-II al IP: DHC	1-25-FF-PC-89				
CPU F/W Vers DST/T		)				Setting	5	·	
			_	DG-ID L	.ist	Load Setup	File	Read from	Device
IP Sett	ing: Fixed IP mode			Search Rep	eaters	Save Setup	File	Write to D	Device
stination Repe	ater's Information								
<b>₩</b> 001	(192.168.0.202)	₩ 002	(192.16	8.0.212)	<b>₩</b> 003	(192.168.0.207)	□ 004		
₩ 001	(192.168.0.202)	₩ 002	(192.16		003	(192.168.0.207)	004		
	(192.168.0.202)						1		
□ 005	(192.168.0.202)	006			 II 007		008		
□ 005 □ 009	(192.168.0.202)	│			_ □ 007 _ _ □ 011 _		_ □ 008 _ □ □ 012		

9. When the confirmation screen appears, click the [Yes] button.



- 10. A notice "write completed" is displayed, then click the left mouse button on [OK].
- 11. Using the same procedure, make settings for each connected DR-2X/XE.

This concludes the setting of DR-2X/XE.

Turn off the DR-2X/XE and disconnect the USB cable connected to the PC.

#### Checking the destination repeaters

Install each individual DR-2X/XE that has been set up in the actual operation location and connect it to the Internet router with a commercially available LAN cable.



• For instructions on installing DR-2X/XE and notes, please refer to the instruction manual of DR-2X/XE.



Check whether DR-2X/XE can connect correctly via the Internet.

1. Connect the DR-2X/XE to the PC using the USB cable supplied with LAN-01A to confirm the connection.



- 2. Press the "I" side of the POWER switch to turn the repeater ON.
- 3. Start up the personal computer and double click on [IMRSStup.exe] in the "IMRSStup \*\*\*\*" folder.

📙   🎽 📕 🖛			Application Tools	IMRSStup				_		×
File Home	Share	View	Manage						×	- (
$\leftarrow \rightarrow \cdot \uparrow$	→ Thi	s PC > Dov	wnloads > IMRSSt	up	~	Ū	Search IMRSStu	p1000	12	P
📌 Quick access		Name	^		Date modified	1	Туре	Size		
Desktop	*	🚳 Comn	nLib.dll		26/03/201 17:37		Application extens.		🖿 KB	
🕹 Downloads	*		itup		26/03/201 17:37		Application		I TT KB	
Documents	*									
Pictures	*									

The "IMRS Setup software" will start.

y Repeater Information	Firr	nware Version:		Interface: USB
Callsign: Repeater:		MAC Address: Local IP:		
CPU F/W Version: DST/TYP:			Settings	
051/112		DG-ID List	Load Setup File	Read from Device
IP Setting:		Search Repeaters	Save Setup File	Write to Device
□ 001		007	□ 004 □ 008	
□ 013				
<b>□</b> 017			L 020	

4. A popup window will be displayed. Click the [OK] button.

IMRS Setup		×
i will	you read parameters fr	om IMRS ?
	OK	Cancel

5. Click the left mouse button on [Search Repeaters...].

Repeater Information		Firmware Version:	1.0.0		Interface: USE
	RTMO (IXONN) )R-2X	MAC Address: Local IP:	80-81-25-77-PC-89 DHCP		
	1.000 (20170413) XF #1			Settings	
IP Setting: F	ixed IP mode		G-ID List	Load Setup File Save Setup File	Read from Device Write to Device
stination Repeater's In	formation				

6. When the "Search Repeaters" screen appears, click the left mouse button on [Start].

Start			
No IP Address	Callsign	Radio ID	Result (MAC Address)
<			

When the connection confirmation is completed (it takes several seconds), it will be displayed as shown below.

7. Click the left mouse button on [Close].

The "Search Repeaters" window will close.

	Start	IP Setting =	= Fixed IP mode	
No	IP Address	Callsign	Radio ID	Result (MAC Address)
1 2 3	192.168.0.202 192.168.0.211 192.168.0.207	34129. 361.99	2008 2008	OK (#0-#1-25-#7-#C-#9) OK (#0-#1-25-#7-#C-#0) NG
<				

If the confirmation is successful, the ID (Callsign) of the repeater is displayed on the main screen and the background color of the button changes to blue.

When connection confirmation fails, the background color of a button changes to red.

ion	Firmware Version:	1.0.0		Interface: USB
DR-2X				
1.000 (20170413)			Settings	
Fixed IP mode	[#		Load Setup File Save Setup File	Read from Device Write to Device
Information				
00 🟹	2	003	(004	
	DR-2X 1.000 (20170+13) EXF #1 Fixed IP mode	MAC Address: DR-2X 1.000 (20170412) EXE #1 Fixed IP mode	DR-2X 1.000 (20170+12) EXP #1 Fixed IP mode Information	MAC Address: 10-11-15-FF-FC-100 DR-2X 1.000 (20170+12) EXT #1 Fixed IP mode Search Repeaters Information

i

When the DR-2X/XE cannot be connected, check the settings, the LAN, or the Internet connection.

8. Click [X] on the top right side of the window to close the "Search Repeaters" screen.

#### Confirming the destination repeater information

You can check the ID (Callsign), Radio ID, DG-ID table, and settings of each connected DR-2X/XE without going to the installation site.

The ID (Callsign) and the Radio ID, the DG-ID table of the connected repeater may be displayed, however these setup parameters cannot be changed.

Only a DG-ID whose IMRS is set to ON is indicated on the destination repeater in the DG-ID table.

1. Click the left mouse button on a blue button in the [Destination Repeater's Information] area, to confirm the repeater settings.

IMRS Setup					<u> </u>		Х
- My Repeater Informat Callsign: Repeater:	DR-2X	Firmware Version: MAC Address: Local IP:	10-11-25-17-00-00		Interface:	USB	
CPU F/W Version: DST/TYP:	1.000 (20170413) EXP #1		oG-ID List	Settings	Read from	Device	1
IP Setting:	Fixed IP mode		ch Repeaters	Save Setup File	Write to D		
Destination Repeater's	Information ■1.4.5 002	aga yap	<b>₩</b> 003	2004			^
□ 005	006		□ 007	008			

The "Destination Repeater Setting" screen appears.

2. Click the left mouse button on [OK].

The "Destination Repeater Setting" window will close.

Destination Repe	ater Setting (N	o.001)								Х
Calls Radio IP Addr	ID:		0 . 20	2		T DG-ID:	03 90			
Me	mo:									
0.00	0 01	0 02	03	0 04	0 05	0 06	0 07	0 08	0 09	
O 10	O 11	0 12	0 13	0 14	0 15	0 16	0 17	0 18	0 19	
0 20	○ 21	0 22	O 23	0 24	0 25	0 26	0 27	0 28	0 29	
0 30	0 31	0 32	33	0 34	0 35	0 36	0 37	38	0 39	
O 40	0 41	0 42	O 43	0 44	0 45	0 46	0 47	0 48	0 49	
0 50	0 51	0 52	0 53	0 54	0 55	0 56	0 57	0 58	0 59	
0 60	0 61	⊖ <mark>62</mark>	⊖ <mark>63</mark>	0 64	0 65	0 66	0 67	0 68	0 69	
0 70	071	0 72	0 73	0 74	0 75	0 76	0 77	0 78	0 79	
08 ()	0 81	0 82	0 83	0 84	0 85	0 <mark>86</mark>	0 87	0 88	0 89	
90	• 91	92	<b>○ 93</b>	0 94	○ 95	<b>○ 96</b>	<b>○ 97</b>	○ 98	0 99	
			Dele	te		Cancel		(	ж	

### Displaying the DG-ID List

You can check which DR-2X/XE is linked to the DG-ID set to DR-2X/XE. You can easily check the call sign of the DR-2X/XE repeaters linked with DG-ID on one screen.

1. Click the left mouse button on [DG-ID List...]

🔛 IMRS Setup					– 🗆 X
My Repeater Informat Callsign: Repeater:	on DR-2X	Firmware Version: MAC Address: Local IP:	10-11-25-17-02-00		Interface: USB
CPU F/W Version: DST/TYP:	1.000 (20170413)		DG-ID List	Settings Load Setup File	Read from Device
IP Setting:	Fixed IP mode	Sear	ch Repeaters	Save Setup File	Write to Device
I <b>▽</b> 001	NINE 00	2 30118	<b>₩</b> 003	2014 P	
□ 005	□ 00	6	L 007	□ 008	

Repeaters mutually connected for each DG-ID are displayed in tree view.

DG-ID List (Destination Repeater Setting List)	×
□ DG-ID □ [07] Local RPT DG-ID □ [01] Default DG-ID □ [01] JR1WD □ [02] JQ1YBF □ [92] □ [02] JQ1YBF	
	Close

In the above display example, the interconnections for each DG-ID are shown below:

DG-ID [07] : It is the DG-ID of the local repeater.

DG-ID [01] : In the default DG-ID [01], the local repeater and JR1WD of DG-ID [01], JQ1YBF of DG-ID [02] are connected.

DG-ID [91] : In DG-ID [91], local repeater and JR1WD of DG-ID [01] are connected.

DG-ID [92] : In DG-ID [92], local repeater and JQ1YBF of DG-ID [02] are connected.

2. Click the left mouse button on [Close].

The "Destination Repeater Setting" window will close.

#### Saving and Loading the settings

The settings for the LAN-01A can be saved on the PC. If the configuration must be entered again, due to a problem, the saved file can write the settings to LAN-01A, so they do not have to be manually entered from the beginning.

- Saving the settings
- 1. Press the "I" side of the POWER switch to turn the repeater ON.
- 2. Open the "IMRSStup \*\*\*\*" folder and double click on "IMRSStup.exe".

🖓 📙 🛨			Application Tools	IMRSStup			*	_%		>
File Home	Share	View	Manage							~
$\leftrightarrow \rightarrow \cdot \uparrow$	→ Thi	s PC > Do	wnloads > IMRSSt	up	~	Ū	Search IMRSStu	p1000		٩
A Quick access		Name	^		Date modified	1	Туре	Size		
Desktop	*	🗟 Comr	mLib.dll		26/03/201 17:37	1	Application extens		M KB	
🕹 Downloads	*	🕞 IMRS	Stup		26/03/201 17:37	/	Application		I TT KB	
Documents	*									
Pictures	*									

The "IMRS Setup software" will start.

Repeater Information				
	F	irmware Version:		Interface:
Callsign:		MAC Address:		
-		Local IP:		
Repeater:				
CPU F/W Version:			Settings	
DST/TYP:				
		DG-ID List	Load Setup File	Read from Device
IP Setting:				<u></u>
		Search Repeaters	Save Setup File	Write to Device
□ 001	1 002	□ 003	□ 004	
L 002	□ 006	L 007	□ 008	
□ 005 □ 009			□ 008	
009	C 010	□ 011	□ 012	
	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	□ □ □ □ □ □	

3. A popup window will be displayed. Click the [OK] button.



4. When "read completed" is displayed, click the left mouse button on [OK].

The setup of LAN-01A and the information of the DR-2X/XE will be displayed on the main screen.

5. Click the left mouse button on the "Save Setup File...".

Callsign: Repeater:	DR-2X	Firmware Version: MAC Address: Local IP:	10-11-25-77-70-09		Interface:
CPU F/W Version: DST/TYP:	1.000 (20170413) EXP #1			Settings	
IP Setting:	Fixed IP mode		CG-ID List	Load Setup File Save Setup File	Read from Device
tination Repeater's	s Information				

6. Type a file name in the bottom box, then click the left mouse button on [Save].

🖵 Save As			×
Save in:	IMRSStup 1000		
Name	^	Date modified	і Ту
	No items match your s	earch.	
<			>
File name:	configuration.dat		Save
Save as type:	IMRS File (*.dat)	<b>•</b> (	Cancel

A file with the extension ".dat" will be saved.

#### • Loading the settings

Load the saved configuration file from the PC and write it to LAN-01A.

- 1. Press the "I" side of the POWER switch to turn the repeater ON.
- 2. Open the "IMRSStup \*\*\*\*" folder and double click on "IMRSStup.exe".



#### The "IMRS Setup software" will start.

Repeater Information				
	Fir	mware Version:		Interface: U
Callsign:		MAC Address:		
Repeater:		Local IP:		
CPU F/W Version:				
DST/TYP:			Settings	
		DG-ID List	Load Setup File	Read from Device.
IP Setting:		Search Repeaters	Save Setup File	Write to Device
		Courteringpoateronn		
tination Repeater's Informati	ion			
		□ 003	004	
□ 001	002	□ 003	□ 004	
				1
□ 005	□ 006	007	□ 008	
				1
□ 009	□ 010	□ 011	□ 012	
□ 009	D10	011	□ 012	
□ 009 □ 013				
□ 013	□ 014	C 015	□ □16	
□ 013	□ 014	C 015		
□ 013	□ 014	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	□ □16	

3. A popup window will be displayed. Click the [Cancel] button.



4. Click the left mouse button on "Load Setup File...".

Version: 1.1.0 Address: 10-11-25-FF-PC-100 Local IP: DHCP		Interface: USB
	1	
DG-ID List	Settings Load Setup File	Read from Device
Search Repeaters	Save Setup File	Write to Device
	1	^
	Search Repeaters	Search Repeaters Save Setup File

5. Click the left mouse button on the desired file to open it, then click the left mouse button on [Open].

🖵 Open				х
Look in:	IMRSStup1000	•	← 🗈 💣 📰 -	
Name	^		Date modified	Ту
📄 configu	ration.dat		13/04/2017 20:48	Di
		Type: DAT File Size: 303 bytes Date modified: 1	3/04/2017 20:48	
<				~
File name:	configuration		Open	J
Files of type:	IMRS File (*.dat)		✓ Cancel	
	Open as read-only	Y		

The configuration file will load.

6. To write the loaded settings to the LAN-01A, click the left mouse button on [Write to Device ...].

🔜 IMRS Setup					- 🗆 X
⊢My Repeater Informati Callsign: Repeater:	on Jervati (Zxane) DR-2X	Firmware Version: MAC Address: Local IP:	00-01-25-77-70-00		Interface: USB
CPU F/W Version: DST/TYP:	1.808 (20170413) 809 #1	C	DG-ID List	Settings Load Setup File	Read from Device
IP Setting:	Fixed IP mode	Sear	ch Repeaters	Save Setup File	Write to Device
[7] [001] (1	92.168.0.202)	(192.168.0.21	2) 🔽 003	(192.168.0.207) 004	^

7. A popup window will be displayed. Click the [OK] button.

IMRS Setup	Х
Will you write parameters to IMRS ?	
OK Cancel	

8. When the "write completed" screen is displayed, click the [OK] button completes the writing.

#### Setting a password

If you set the password, you will be prompted to enter the password when reading/writing the LAN-01A settings. You can not read/write the setting unless you enter the correct password.

1. Open the "IMRSStup \*\*\*\*" folder and double click on "IMRSStup.exe".



#### The "IMRS Setup software" will start.

IMRS Setup				
ly Repeater Information	Firmv	vare Version:		Interface: USE
Callsign:	Ν	IAC Address:		
Repeater:		Local IP:		
CPU F/W Version: DST/TYP:			Settings	
051/112.		DG-ID List	Load Setup File	Read from Device
IP Setting:		Search Repeaters	Save Setup File	Write to Device
				1
□ 001				
□ 001	□ 002 □ □ 006 □ □ 010	C 007	008	
□ 005		□ 007 □ 011	□ 008 □ □ 012 □	
□ 005	□ □ 006 □ □ □ □ 010 □ □ □ 014	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	□ 008 □ □ 012 □ □ 016 □ 016 □ 0	

2. A popup window will be displayed. Click the [Cancel] button.



3. Click the left mouse button on [Settings...].

Callsign: Repeater:	DR-2X	Firmware Version: MAC Address: Local IP:	10-11-25-77-70-10		Interface: USB
CPU F/W Version: DST/TYP:	1.000 (20170413) DOP #1	1	DG-ID List	Settings Load Setup File	Read from Device
IP Setting:	Fixed IP mode	Sear	ch Repeaters	Save Setup File	Write to Device

- 4. The "Settings" screen appears.
- 5. Click the left mouse button on [Password Lock...].

✓ DHCP         Local IP Address:       192 . 168 . 0 . 203         Subnet Mask:       255 . 255 . 255 . 0         Gateway Address:       192 . 168 . 0 . 1         UDP Port No:       21110         Password Lock	Network Configuration –	92. %
Subnet Mask:       255 . 255 . 255 . 0         Gateway Address:       192 . 168 . 0 . 1         UDP Port No:       21110		☑ DHCP
Gateway Address: 192 . 168 . 0 . 1 UDP Port No: 21110	Local IP Address:	192 . 168 . 0 . 203
UDP Port No: 21110	Subnet Mask:	255 . 255 . 255 . 0
	Gateway Address:	192 . 168 . 0 . 1
Password Lock	UDP Port No:	21110
Password Lock		
Password Lock		
	· · ·	Password Lock

The "Password Lock" screen appears.

6. Click the left mouse button on [Enable...].

Enable
Disable
Change Password

The password entry screen appears.

7. Enter the password.

A password allows entry of the 35 alpha numeric characters.

The characters to be used include "0 ~ 9", "A ~ Z", "a ~ z", and some symbols.

IMRS Setup		
Please en	ter new Password.	
*******		
	Cancel	ОК

- 8. Click the left mouse button on [OK].
- 9. When the "password locking is enabled" screen is displayed, clicking the [OK] button completes the password setting.

#### • Changing the password

- 1. Click the left mouse button on the "Change Password...".
- 2. Enter the current password and the new password, then click the left mouse button on [OK].
- 3. A notice "Password changed" is displayed, then click the left mouse button on [OK].

Changing your password is now complete.

#### • Disabling the password

- 1. Click the left mouse button on "Disable...".
- 2. Enter the password, then click the left mouse button on [OK]. A notice "Password locking is disabled" is displayed, then click the left mouse button on [OK].

This will cancel the password.

#### Resetting the password

If you forgot the password, you can reset it with the following procedure.

When the password is reset, all the settings saved in the LAN-01A will be deleted.

- 1. Click the left mouse button on the "Change Password...".
- 2. Enter some characters in the new password field and press the [OK] button.
- 3. When "Password changed" is displayed, click the left mouse button on [OK].

This will invalidate the password.

### **Trouble shooting**

If you cannot setup the DR-2X/XE with the PC or if you cannot connect to other DR-2X/XE repeaters via the Internet, please check the following items:

#### • PC does not recognize DR-2X/XE when connecting the DR-2X/XE to the PC

- Make sure LAN-UNIT LAN-01A is correctly attached to DR-2X/XE. Refer to page 3 for mounting method.
- Use the procedure from step 11 on page 9 to see if a dedicated USB driver is installed on your computer.
- Check the connection between the DR-2X/XE and the PC. Be sure to connect the micro USB jack on the back of the DR-2X/XE to your computer using the USB cable supplied with the LAN-01A.

#### • Can not connect to internet line via router

Because LAN-01A uses UDP port 21110 to connect to the Internet line, it is necessary to set up UDP port 21110 to be available to the router as well.

Please refer to "Router settings" on page 11 to set up the router. For details on how to set up the router, refer to the owner's manual that came with your router.

#### • There is a DR-2X/XE that cannot be connected

- Refer to page 18 and check the global IP address entered in step 6 for any mistakes. To connect the DR-2X/XE via the Internet, a static global IP address is required. For the static global IP address, please contact your Internet provider.
- Make sure that the connection destination DR-2X/XE is set. In step 7 on page 19, check the DR-2X/XE that is to be connected.

#### • Relay operation with the desired DR-2X/XE does not link

Please check the DR-2X/XE's DG-ID number, DG-ID group setting, etc. for any mistakes. For the setting procedure, refer to the DR-2X/XE instruction manual.



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