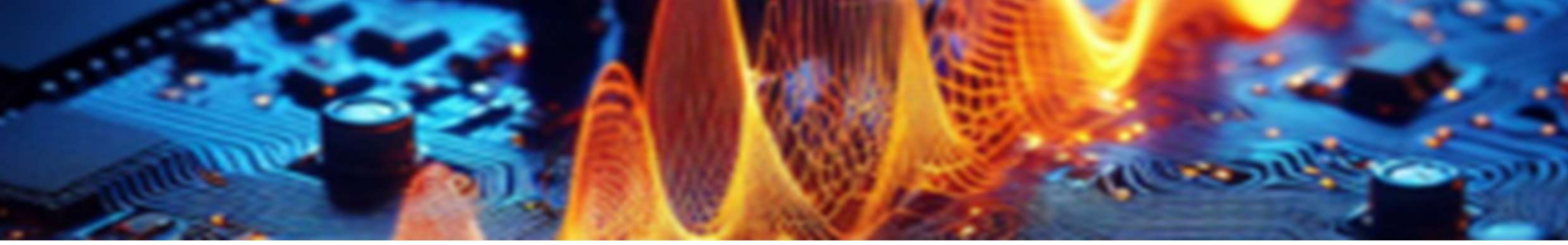
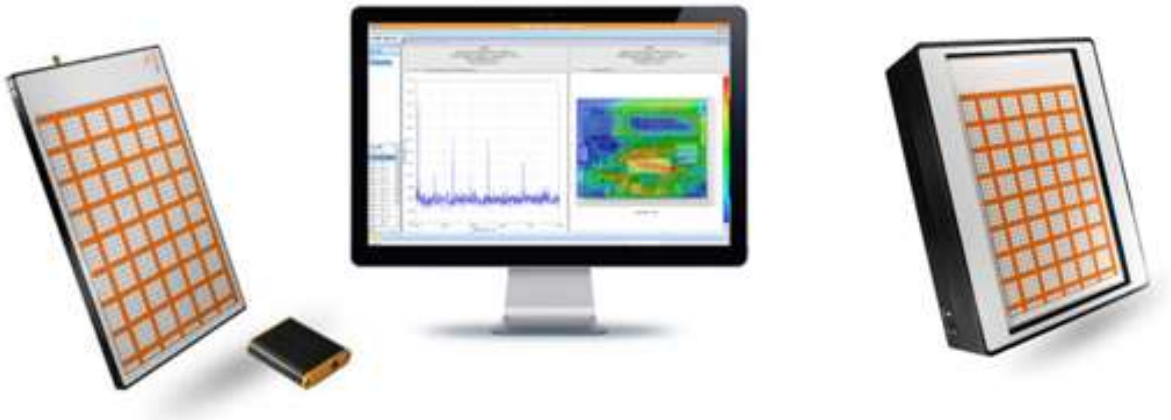


YIC
TECHNOLOGIES
Results in Realtime

EMScanner &

EMScannerR

Setup Guide



Disclaimer

Warranty

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Safety Notices

Caution

A **CAUTION** notice denotes a hazard. It calls attention to operating procedure, practice, or similar that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

Warning

A **WARNING** notice denotes a hazard. It calls attention to an operating procedure, practice, or similar that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a **WARNING** notice until the indicated conditions are fully understood and met.

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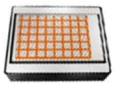
Components

Box Contents

EMScanner

EMS08	This is the **EMScanner** main board.	1	
EMS08 Adapter	This is the external adapter that controls the **EMScanner**.	1	
Micro-D Control Cable	This is the **EMScanner** power and control cable. It connects the adapter to the scanner.	1	
USB Cable	This connects the PC (laptop or desktop) to the **EMScanner** adapter. The USB Cable provided with the system has ferrites on both ends of the cable.	1	

EMScannerR

EMSR08	This is the **EMScannerR** unit.	1	
Power Supply	90 VAC to 264 VAC, 12VDC, 8.34A Power Supply for the **EMScannerR**.	1	
Network Cable	This connects the **EMScannerR** unit to the network or directly to the PC.	1	

User-Supplied Components

1. **Spectrum Analyzer:** this must include the necessary options to work with the **EMScannerR**. This device measures the radio frequency (RF) signal received from the scanner - generated by the very-near-field emissions of an adjacent activated PCB - and it outputs the data to the PC.

   PC: A PC running Windows 11 or Windows 10 on an x86-64 processor is required. It is recommended the PC also meet the minimum system requirements to prevent graphical bugs, scanning slowdown and crashes.

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Minimum System Requirements

Operating System: Windows 11 / Windows 10 (latest update)
CPU: 1 GHz or faster with two or more cores, on a compatible 64-bit processor
Memory: 8 GB or more
Storage: 200 MB for installation, and 1 GB for project saves
Graphics card: Compatible with OpenGL 4.2

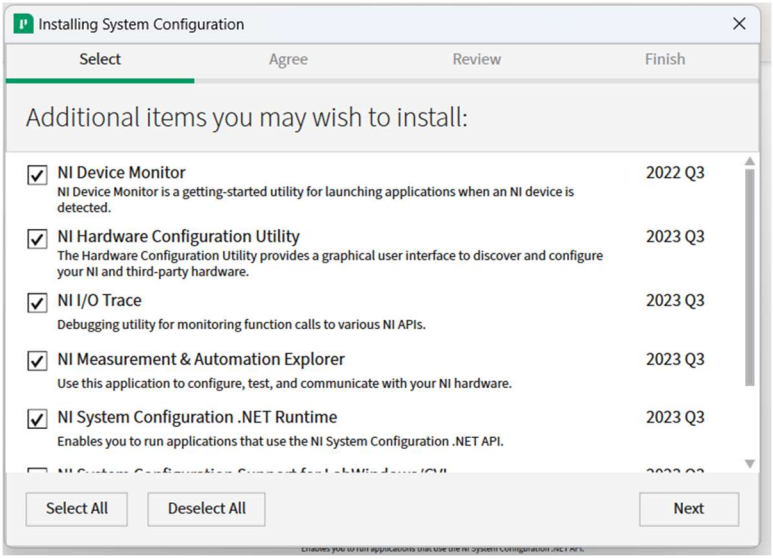
Installation and Hardware Setup

To safely and accurately setup the **EMScanner** and **EMScannerR**, please refer closely to the following information regarding the full installation process.

1. **Install communication software for the spectrum analyzer:** You must determine which software to install from the manufacturer's website. For SCPI controlled spectrum analyzers, any software which installs NI-VISA can be used. This includes NI MAX, Keysight Connection Expert and RIGOL UltraSigma. It is recommended to install **one** of the following:

   a. **NI-MAX**

Recommended for most SCPI-controlled spectrum analyzers. Download NI System Configuration from the National Instruments website: www.ni.com. When "Additional items you may wish to install" is shown, you must have **at least** NI Measurement & Automation Explorer selected. Other items do not affect the EMViewer runtime and can be enabled at the user's discretion.



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b. **Keysight Connection Expert**

Recommended to use with Keysight spectrum analyzers.

Go to **www.keysight.com** and search for 'IO Libraries Suite', or **click here** to open the website to download the latest version. On the website, click on the 'Download' button and follow the steps as instructed.

c. **RIGOL UltraSigma**

Recommended to use with RIGOL spectrum analyzers. Some RIGOL analyzers (such as the RSA5000) require additional downloads to use with this software. Please refer to the user manual for your spectrum analyzer.

2. **Install the EMViewer software application:**

You can download the EMViewer software by going to the following linked page: https://yictechnologies.com/emviewer/

Install the EMViewer software by running the downloaded setup application. The application should be installed on the C: drive.

If you experience any difficulties installing the software, please refer to the "Difficulties Installing the software" section at the end.

A license is required to use the EMViewer software. All licenses are provided by YIC Technologies. To obtain your license file, please email your PC's unique hash code (found in the menu Help->About in the EMViewer software) to support@yictechnologies.com.

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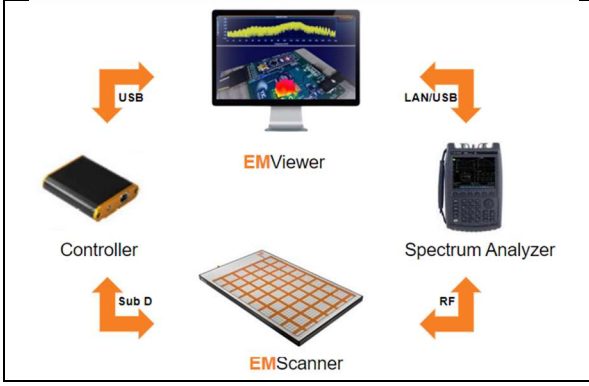
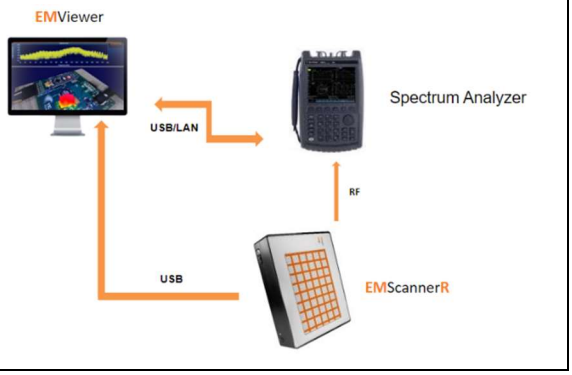
3. **Setup the scanner:**

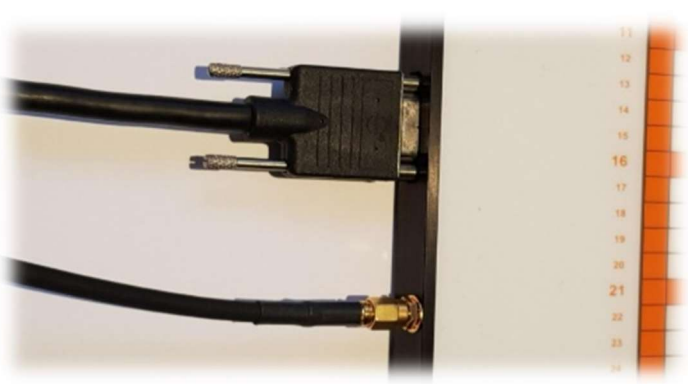
Setup your devices as described in the relevant diagram below.

EMScanner	EMScannerR
	

EMScanner Connections:

- **RF Connection:** connect the SMA side of the RF Cable to the unit (RF OUT) and the N Type side to the **spectrum analyzer** (RF Input).

- **USB Connection:** connect the unit to a PC using the USB cable.



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EMScannerR Connections:

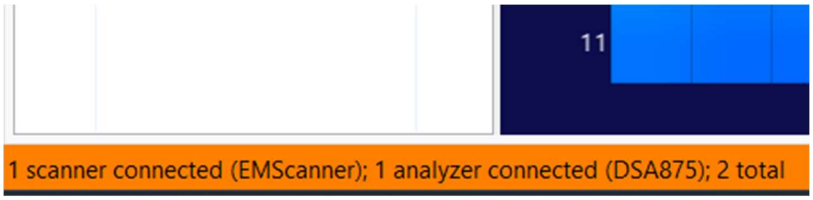
- **RF Connection:** connect the SMA side of the RF Cable to the unit (RF OUT) and the N Type side to the **spectrum analyzer** (RF Input).

- **LAN Connection:** Connect the unit to a PC or a router using a LAN cable.

Establish a Connection

EMScanner

The EMScanner and the PC connection is a USB-based connection. Once connected, it will automatically be detected by the EMViewer software:



In some cases, the driver required **may not** be installed automatically. If the EMViewer software cannot detect the scanner, the driver will need to be installed manually. A copy of the USB driver can be found on the PC in the following location:

C:\Program Files\YIC Technologies\EMViewer2\drivers\EMScanner

To manually install, copy the EMScanner folder to the desktop, right click on:

EMViewer.inf - > Install

You may delete the folder from your desktop once the driver is installed.

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EMScannerR

Upon power up, your EMScannerR is set to alternate between DHCP mode and static IP until a stable connection is established. If not assigned an IP by a DHCP process, the EMScannerR ‘s default static IP address is 172.16.1.148 / 255.255.255.0

DHCP:

1. Connect the EMScannerR to the network.
2. Set the Spectrum Analyzer to **DHCP** and connect it to the same network.
   The Spectrum Analyzer MUST be visible on NI-MAX, Keysight Connection Expert or the SA manufacturer’s own control software.
3. Set the PC to **DHCP** and connect it to the same network.
4. Make sure all units are on the same subnet and are fully accessible.
5. The EMViewer should automatically detect the EMScannerR and the spectrum analyzer.

Static IP:

The **EMScannerR** default IP is 172.16.1.148 / 255.255.255.0

1. Set the PC’s IP to 172.16.1.XXX / 255.255.255.0
2. Connect the **spectrum analyzer** to the PC.
   The spectrum analyzer MUST be visible on NI-MAX/Keysight Connection Expert or the SA manufacturer’s own control software.
3. The **EMViewer** should automatically detect the **EMScannerR** and the **spectrum analyzer**.

Warning: If setting to a different IP, ensure that you note down the static IP as this will override the DHCP (i.e., the unit will not try to connect to the DHCP IP).
Regardless of what scanner you use, the **spectrum analyzer** **MUST** be visible on your VISA control software (eg. NI-MAX or Keysight Connection Expert).

LED Indicators for EMScannerR:

The colour of the LED light located on the EMScannerR indicates three stages of setup. The three stages are as follows:

- **Red:** The scanner is booting.
- **Green:** Ready for use.
- **Orange:** A scan is currently being run.

NOTE: in some newer units, the **Orange** will appear as a **Blinking Green** instead.

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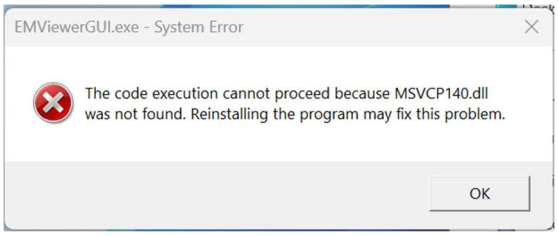
Technical Support

Difficulties installing the software.

If you experience code execution errors, such as the following,



Please run the “VC_Redist.x64.exe” program provided in the installation.

For fast and seamless technical support, please gather the following information and contact Y.I.C. Technologies technical support as instructed further below: (support@yictechnologies.com)

1. *Serial number of your unit (Shown in the device list).*
2. *Software version (Menu: Help -> About).*
3. *Your analyzer control software (eg. NI-MAX or Keysight Connection Expert)*
4. *Spectrum Analyzer model and manufacturer (or *IDN)*
5. *The log file (Help -> Open Log File) (omit if the program doesn’t boot)*
6. *A detailed description of the problem, including screenshots and video footage.*

www.yictechnologies.com

If you can see it, you can fix it!

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