



13 August 2017

MonsoonRF Application Programming Interface (API)

MonsoonRF reader API programs offer several ways to interface a User Application with the Reader hardware.

The simplest MonsoonRF reader API provides the user with an interface as simple to use as the Impinj Speedway Connect mode, but it comes with some added features.

Using a reader running the Impinj connect mode, a user merely opens a communication port to the reader using a simple Terminal Mode program and the reader returns RFID tag information. To place a reader into the Impinj "connect" mode the user must enable it on each reader, and the reader must be put through a hard reset. Returning the reader to a normal configuration (so that it can use Indy Tools, for example) similarly requires special attention to reader.

The MonsoonRF version of Connect is accessed simply by port-map programming. Addressing the reader using an IP address and a specific port number allows the user to have the simplicity of Connect anytime, while providing the additional benefit of being able to choose certain common read configurations, such as Tag Sessions 0-3, or enabling and disabling the Patent Pending Proximity sensor on specially equipped readers.

To initiate a reading on the MonsoonRF AA1B reader, connect the reader to a network via a PoE enabled switch or injector. The reader is shipped with DHCP turned on by default, so it must be connected to a network equipped with a DHCP server. Using a network server manager tool, or one of the many IP scan tools available (eg Advanced IP Scanner for Windows), determine the IP address assigned to the reader.

The reader requires PoE power levels meeting IEEE 802.1af (about 4 watts idle, and 11 watts reading), and uses DHCP to obtain its IP address, gateway, and DNS servers. The unit publishes mdns (bonjour) information on the ethernet; otherwise finding its IP address involves querying the dhcp server directly, or using an arp scanner program (such as Advanced IP Scanner for Windows (<https://www.advanced-ip-scanner.com/>), arp-scan in Linux, arpdig in BSD unix, AngryIPScanner (<http://angryip.org/>) in Mac OSX, and Windows. NMAP (<https://nmap.org/>) is also available on all platforms.

The MAC address of the AA1B reader, located on a decal on the back panel, can be used to confirm the IP address, since most of the scanners mentioned will report MAC address with the IP address.

A sample output from Advanced IP Scanner (for Windows) is shown below. While Advanced IP Scanner will report IP address of items in search range, whether or not the searching computer is on the same subnet, it will only report MAC addresses if the scanning computer is on the same subnet as the reader.



File Actions Settings View Help

Scan

192.168.237.1 - 192.168.237.255

Status	Name	IP	Manufacturer	MAC address	Comments
	R2000-Test-1	192.168.237.187			
	192.168.237.192	192.168.237.192		88:D8:12:66:27:F5	
	192.168.237.183	192.168.237.183		88:D8:12:66:27:EF	
	192.168.237.180	192.168.237.180		88:D8:12:66:3E:89	
	192.168.237.208	192.168.237.208		88:D8:12:66:23:43	Voicore Cube 21Jan2017 88-d8-12-66-23-43
	iTap-iPhone	192.168.237.192	Apple, Inc.	FD:34:75:8D:23:DE	
	HESS	192.168.237.190	ASUSTek COMPUTER INC.	10BF:4B:41:8F:30	iTA Desk
	192.168.237.39	192.168.237.39	Hewlett Packard	44:1E:A1:8E:2E:06	
	sv1	192.168.237.200	PC Partner Ltd.	00:01:2E:9C:42:8F	mRF Zotac 00-01-2e-9c-42-8f
	Mesh-Node-1	192.168.237.140	Raspberry Pi Foundation	88:27:EB:18:A8:C0	
	Mesh-Node-1	192.168.237.139	Raspberry Pi Foundation	88:27:EB:4D:FC:95	
	R2000-Test-1	192.168.237.188	Raspberry Pi Foundation	88:27:EB:3D:AD:D0	
	Tiffany	192.168.237.110	Samsung Electronics Co.,Ltd	18:07:9B:6A:C7:22	iTA Laptop
	evidens	192.168.237.255	Samsung Electronics Co.,Ltd	18:07:9B:6A:C7:22	iTA Laptop
	gate.monsoorf.net	192.168.237.1	Ubiquiti Networks Inc.	80:2A:A8:4D:E9:E3	mRF Main

Using a Terminal Program, connect to one of the following ports:

1417x Where x = [0, 1, 2, or 3]

Read in Tag Session 0-3, returning

antenna number, epc, RSSI

Network Communication

Network Configuration

Server Mode IP Address: 192 . 168 . 237 . 11 Port: 14151

Hex View File Send Clear Disconnect

```

1,050831120000000000000942,-44.9
1,05083112000000000000095a,-46.3
1,050831120000000000000990,-51.6
1,050831120000000000000927,-46.3
1,05083112000000000000095a,-43.8

```

Send

Exit

Connected : COM3,115200,8bit,1bit,none,none

1417x Where x = [0, 1, 2, or 3]

Read in Tag Session 0-3, returning

antenna number, epc, RSSI;

pause when an object comes with 40cm inline of the antenna

This set of ports turns on the proximity sensor as well as allowing selection of the Tag Session number.