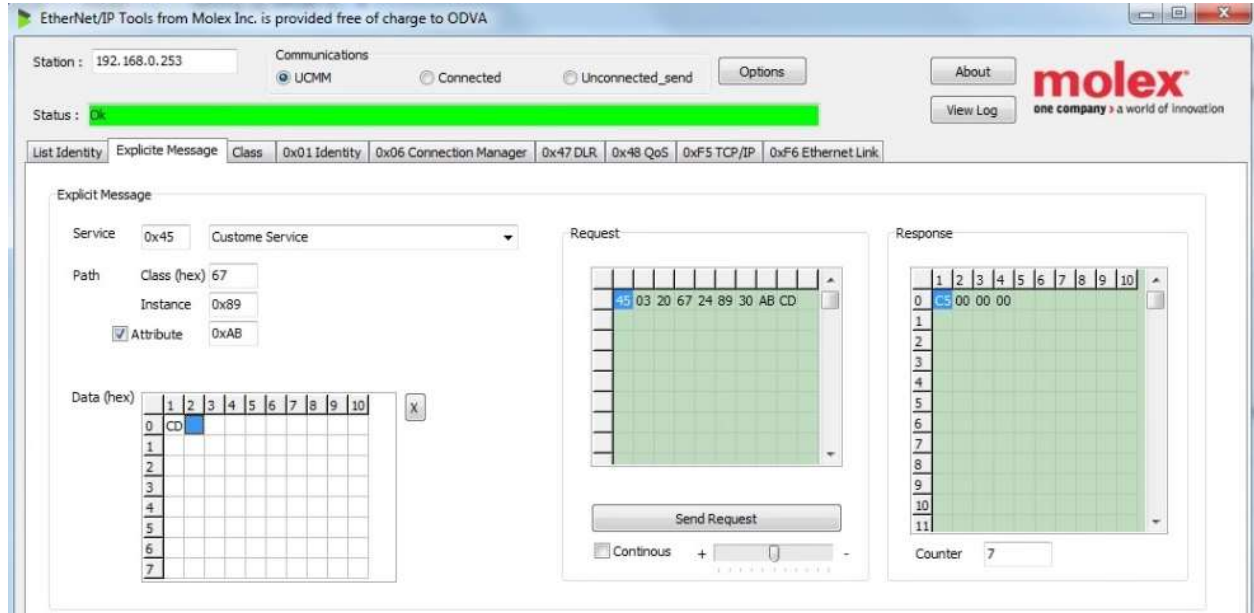
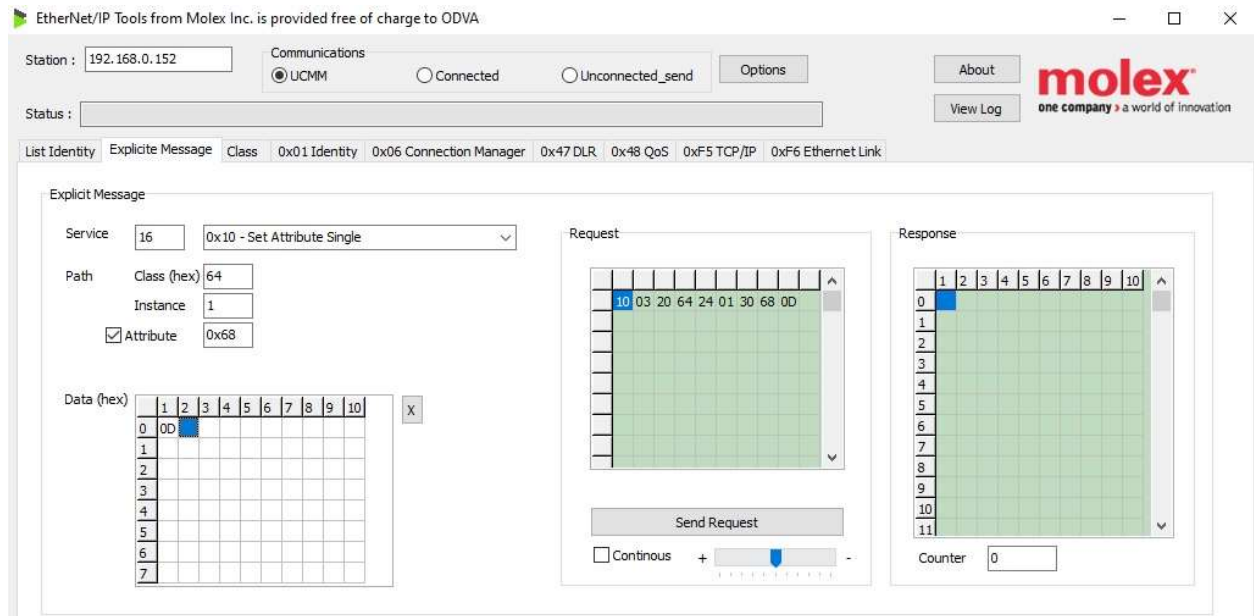


## Setting up EIP Module and Reader for the first time

1. Using USB Send [DIP127] command to enable MODBUS TCP at 115200 baud
2. Then send [DIP2C0] To enable FIELD BUS and select a single antenna mode
3. On a brand new EIP XPORT the configuration is unlocked on power up. If you need to lock/unlock while testing use this secret message:



4. First set the baud rate of the EIP port:



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7. Set counter (1 antenna) class 0x65, instance 1, attribute 0x65

The screenshot shows the 'EtherNet/IP Tools' application window. At the top, it states 'EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA'. The 'Station' field is set to '192.168.0.152'. Under 'Communications', 'UCMM' is selected. The 'Status' field is empty. On the right, there are buttons for 'About', 'View Log', and the Molex logo with the tagline 'one company > a world of innovation'.

The main menu includes 'List Identity', 'Explicit Message' (which is active), 'Class', '0x01 Identity', '0x06 Connection Manager', '0x47 DLR', '0x48 QoS', '0xF5 TCP/IP', and '0xF6 Ethernet Link'.

In the 'Explicit Message' section, the 'Service' is set to '16' and the dropdown shows '0x10 - Set Attribute Single'. The 'Path' is set to 'Class (hex) 65', 'Instance 1', and the 'Attribute' checkbox is checked with a value of '0x65'.

The 'Data (hex)' section shows a table with 10 columns (1-10) and 8 rows (0-7). The data in row 0 is: 03 01 05 01 00. The cell at row 0, column 6 is highlighted in blue.

The 'Request' section shows a table with 10 columns (1-10) and 8 rows (0-7). The data in row 0 is: 10 03 20 65 24 01 30 65 03 01. The cell at row 0, column 1 is highlighted in blue. Below the table is a 'Send Request' button and a 'Continuous' checkbox.

The 'Response' section shows a table with 10 columns (1-10) and 12 rows (0-11). The cell at row 0, column 1 is highlighted in blue. Below the table is a 'Counter' field set to '0'.

8. Set inputs (1 antenna) class 0x65, instance 1, attribute 0x66

The screenshot displays the 'EtherNet/IP Tools' application window. At the top, it states 'EtherNet/IP Tools from Moxlec Inc. is provided free of charge to ODVA'. The 'Station' field is set to '192.168.0.152'. Under 'Communications', the 'UCMM' radio button is selected. The 'Status' field is empty. On the right, there are 'About' and 'View Log' buttons, and the Moxlec logo with the tagline 'one company > a world of innovation'.

The 'List Identity' tab is active, showing a list of communication methods: 'Class', '0x01 Identity', '0x06 Connection Manager', '0x47 DLR', '0x48 QoS', '0xF5 TCP/IP', and '0xF6 Ethernet Link'. The 'Explicit Message' sub-tab is selected.

In the 'Explicit Message' section, the 'Service' is set to '16' and the dropdown menu shows '0x10 - Set Attribute Single'. The 'Path' is set to 'Class (hex) 65', 'Instance 1', and the 'Attribute' checkbox is checked with a value of '0x66'.

The 'Data (hex)' table shows a 10-column grid. The first row contains the values '03 01 00 0F 00' followed by a blue square in the 6th column. The rest of the table is empty.

The 'Request' section shows a 10-column grid. The first row contains the values '10 03 20 65 24 01 30 66 03 01' followed by a blue square in the 10th column. The rest of the table is empty. Below the grid is a 'Send Request' button and a 'Continuous' checkbox.

The 'Response' section shows a 10-column grid. The first row contains the values '1 2 3 4 5 6 7 8 9 10' followed by a blue square in the 10th column. The rest of the table is empty. Below the grid is a 'Counter' field set to '0'.

9. Set outputs. Class 0x66, instance 2, attribute 0x65

The screenshot shows the 'EtherNet/IP Tools' application window. At the top, it says 'EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA'. The 'Station' field is set to '192.168.0.152'. Under 'Communications', 'UCMM' is selected. The 'Status' field is empty. On the right, there are buttons for 'About', 'View Log', and the Molex logo with the tagline 'one company a world of innovation'.

The 'List Identity' tab is active, showing a list of communication classes: 'Class', '0x01 Identity', '0x06 Connection Manager', '0x47 DLR', '0x48 QoS', '0xF5 TCP/IP', and '0xF6 Ethernet Link'. The 'Exploit Message' sub-tab is selected.

In the 'Exploit Message' section, the 'Service' is set to '16' and the dropdown shows '0x10 - Set Attribute Single'. The 'Path' is set to 'Class (hex) 66', 'Instance 1', and the 'Attribute' checkbox is checked with a value of '0x65'.

The 'Data (hex)' section shows a grid with columns 1 through 10. The data is as follows:

	1	2	3	4	5	6	7	8	9	10
0	10	01	00	10	00					
1										
2										
3										
4										
5										
6										
7										

The 'Request' section shows a grid with columns 1 through 10. The data is as follows:

	1	2	3	4	5	6	7	8	9	10
0	10	03	20	66	24	01	30	65	10	01
1	00	10	00							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

The 'Response' section shows a grid with columns 1 through 10. The data is as follows:

	1	2	3	4	5	6	7	8	9	10
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

At the bottom of the 'Request' section, there is a 'Send Request' button and a 'Counter' field set to '0'.

The screenshot displays the EtherNet/IP Tools application window. At the top, it states "EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA". The main interface includes a header bar with the following elements:

- Station:** A text box containing "192.168.0.152".
- Communications:** Radio button options for "UCMM" (selected), "Connected", and "Unconnected\_send". An "Options" button is located to the right.
- Status:** A large grey rectangular area.
- Molex Logo:** Located on the far right, with the tagline "one company > a world of innovation". Buttons for "About" and "View Log" are positioned above the logo.
- Navigation Tabs:** A row of tabs below the header: "List Identity", "Explicit Message" (active), "Class", "0x01 Identity", "0x06 Connection Manager", "0x47 DLR", "0x48 QoS", "0xF5 TCP/IP", and "0xF6 Ethernet Link".

The "Explicit Message" tab contains several sections:

- Service:** A dropdown menu set to "0x10 - Set Attribute Single".
- Path:** Fields for "Class (hex)" set to "64", "Instance" set to "1", and a checked "Attribute" checkbox with a value of "0x71".
- Data (hex):** A grid for entering hexadecimal data. The first row shows values "01" in column 2 and "07" in column 3. A small "X" icon is to the right of the grid.
- Request:** A section with a hex grid. The first row contains values "10", "03", "20", "64", "24", "01", "30", "71", "01". Below the grid is a "Send Request" button and a "Continuous" checkbox which is unchecked.
- Response:** A section with an empty hex grid and a "Counter" field set to "0".

To add more antennas the reader must be changed to multiple antenna mode and new input attributes configured (0x66, 0x67, 0x68, 69, 6A, 6B)

1. Using USB send [DIP240] command to enable FIELD BUS and use multiple antennas
2. For every antenna you enable you will need to configure two more inputs on the EIP module, one for the counter and one for the antenna read data
3. Reset power after all the DIP commands are set to apply changes

When using multiple antennas configure inputs with antenna counter first and antenna data next as in the following screenshot examples

### 1. Antenna 1 counter

EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA

Station: 192.168.0.152

Communications: ☒ UCMM ☐ Connected ☐ Unconnected\_send

Status:

Options

About

View Log

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List Identity Explicit Message Class 0x01 Identity 0x06 Connection Manager 0x47 DLR 0x48 QoS 0xF5 TCP/IP 0xF6 Ethernet Link

Explicit Message

Service 16 0x10 - Set Attribute Single

Path Class (hex) 65

Instance 1

☒ Attribute 0x65

Data (hex)

	1	2	3	4	5	6	7	8	9	10
0	03	01	05	01	00					
1										
2										
3										
4										
5										
6										
7										

X

Request

	1	2	3	4	5	6	7	8	9	10
0	10	03	20	65	24	01	30	65	03	01
1	05	01	00							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Response

	1	2	3	4	5	6	7	8	9	10
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Send Request

☐ Continuous + -

Counter 0

## 2. Antenna 1

EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA

Station : 192.168.0.152

Communications  
☒ UICMM  
☐ Connected  
☐ Unconnected\_send

Options

About

View Log

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Status :

List Identity Explicite Message Class 0x01 Identity 0x06 Connection Manager 0x47 DLR 0x48 QoS 0xF5 TCP/IP 0xF6 Ethernet Link

Explicite Message

Service 16 0x10 - Set Attribute Single

Path Class (hex) 65  
 Instance 1  
☒ Attribute 0x66

Data (hex)

	1	2	3	4	5	6	7	8	9	10
0	03	01	01	0F	00					
1										
2										
3										
4										
5										
6										
7										

X

Request

	1	2	3	4	5	6	7	8	9	10
0	10	03	20	65	24	01	30	66	03	01
1	01	0F	00							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Send Request

☐ Continuous

Counter 0

[illegible][illegible]



 EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA

Station :

Status :

Communications  
☒ UCMM    ☐ Connected    ☐ Unconnected\_send    About  
 **molex**  
one company > a world of innovation

List Identity   Explicit Message   Class   0x01 Identity   0x06 Connection Manager   0x47 DLR   0x48 QoS   0xF5 TCP/IP   0xF6 Ethernet Link

### Explicit Message

Service     

Path   Class (hex)     
Instance     
☒ Attribute  

Data (hex)

	1	2	3	4	5	6	7	8	9	10
0	03	03	05	01	00					
1										
2										
3										
4										
5										
6										
7										

X

### Request

	1	2	3	4	5	6	7	8	9	10
0	10	03	20	65	24	01	30	69	03	03
1	05	01	00							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Send Request

☐ Continuous   +      -

### Response

	1	2	3	4	5	6	7	8	9	10
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Counter

## 6. Antenna 3

EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA

Station :

Communications  
☒ UCMM  
☐ Connected  
☐ Unconnected\_send

Options

About

View Log

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Status :

List Identity Explicit Message Class 0x01 Identity 0x06 Connection Manager 0x47 DLR 0x48 QoS 0xF5 TCP/IP 0xF6 Ethernet Link

Explicit Message

Service  0x10 - Set Attribute Single

Path Class (hex)   
 Instance   
☒ Attribute

Data (hex)

	1	2	3	4	5	6	7	8	9	10
0	03	01	03	0F	00					
1										
2										
3										
4										
5										
6										
7										

X

Request

	1	2	3	4	5	6	7	8	9	10
0	10	03	20	65	24	01	30	6A	03	01
1	03	0F	00							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Send Request

☐ Continuous +

Response

	1	2	3	4	5	6	7	8	9	10
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Counter

## 7. Antenna 4 counter

EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA

Station : 192.168.0.152    Communications: ☒ UCMM    ☐ Connected    ☐ Unconnected\_send    Options    About    View Log    **molex** one company a world of innovation

Status :

List Identity    **Explicit Message**    Class    0x01 Identity    0x06 Connection Manager    0x47 DLR    0x48 QoS    0xF5 TCP/IP    0xF6 Ethernet Link

Explicit Message

Service: 16    0x10 - Set Attribute Single

Path: Class (hex) 65    Instance 1    ☒ Attribute 0x6B

Data (hex)

	1	2	3	4	5	6	7	8	9	10
0	03	04	05	01	00					
1										
2										
3										
4										
5										
6										
7										

Request

	1	2	3	4	5	6	7	8	9	10
0	10	03	20	65	24	01	30	68	03	04
1	05	01	00							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Send Request

☐ Continuous    +    -

Response

	1	2	3	4	5	6	7	8	9	10
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Counter: 0

## 8. Antenna 4

EtherNet/IP Tools from Molex Inc. is provided free of charge to ODVA

Station : 192.168.0.152    Communications: ☒ UCMM    ☐ Connected    ☐ Unconnected\_send    Options    About    View Log    **molex** one company a world of innovation

Status :

List Identity    **Explicit Message**    Class    0x01 Identity    0x06 Connection Manager    0x47 DLR    0x48 QoS    0xF5 TCP/IP    0xF6 Ethernet Link

Explicit Message

Service: 16    0x10 - Set Attribute Single

Path: Class (hex) 65    Instance 1    ☒ Attribute 0x6C

Data (hex)

	1	2	3	4	5	6	7	8	9	10
0	03	01	04	0F	00					
1										
2										
3										
4										
5										
6										
7										

Request

	1	2	3	4	5	6	7	8	9	10
0	10	03	20	65	24	01	30	6C	03	01
1	04	0F	00							
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Send Request

☐ Continuous    +    -

Response

	1	2	3	4	5	6	7	8	9	10
0										
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										

Counter: 0

After mapping all the INS and OUTS set up PLC to match number of registers used. Use SINT (byte size) and for OUTs the instance is 102 and quantity is always 34

For INS is more complicated. Each antenna uses 30 bytes, each antenna counter if mapped uses 2 bytes. So, for example one antenna plus 1 counter is 32 bytes. The EIP module adds 2 more bytes at the top so total would be 34 bytes.

2 antennas plus 2 counters would be 64 bytes plus the 2 EIP control bytes that's 66 bytes



Example of Generic Ethernet Module Setup on RSLogix5000 for use with 4 antennas and 4 counters

**Module Properties: LocalENB (ETHERNET-MODULE 1.1)**

General | Connection | Module Info

Type: ETHERNET-MODULE Generic Ethernet Module  
Vendor: Allen-Bradley  
Parent: LocalENB  
Name: KPort\_EIP\_MB  
Description:   
Comm Format: Data - SINT  
Address / Host Name  
☒ IP Address: 192 . 168 . 0 . 254  
☐ Host Name:   
Connection Parameters  
Input: 101 130 (8-bit)  
Output: 102 34 (8-bit)  
Configuration: 128 0 (8-bit)  
Status Input:   
Status Output:   
Status: Running  
OK Cancel Apply Help

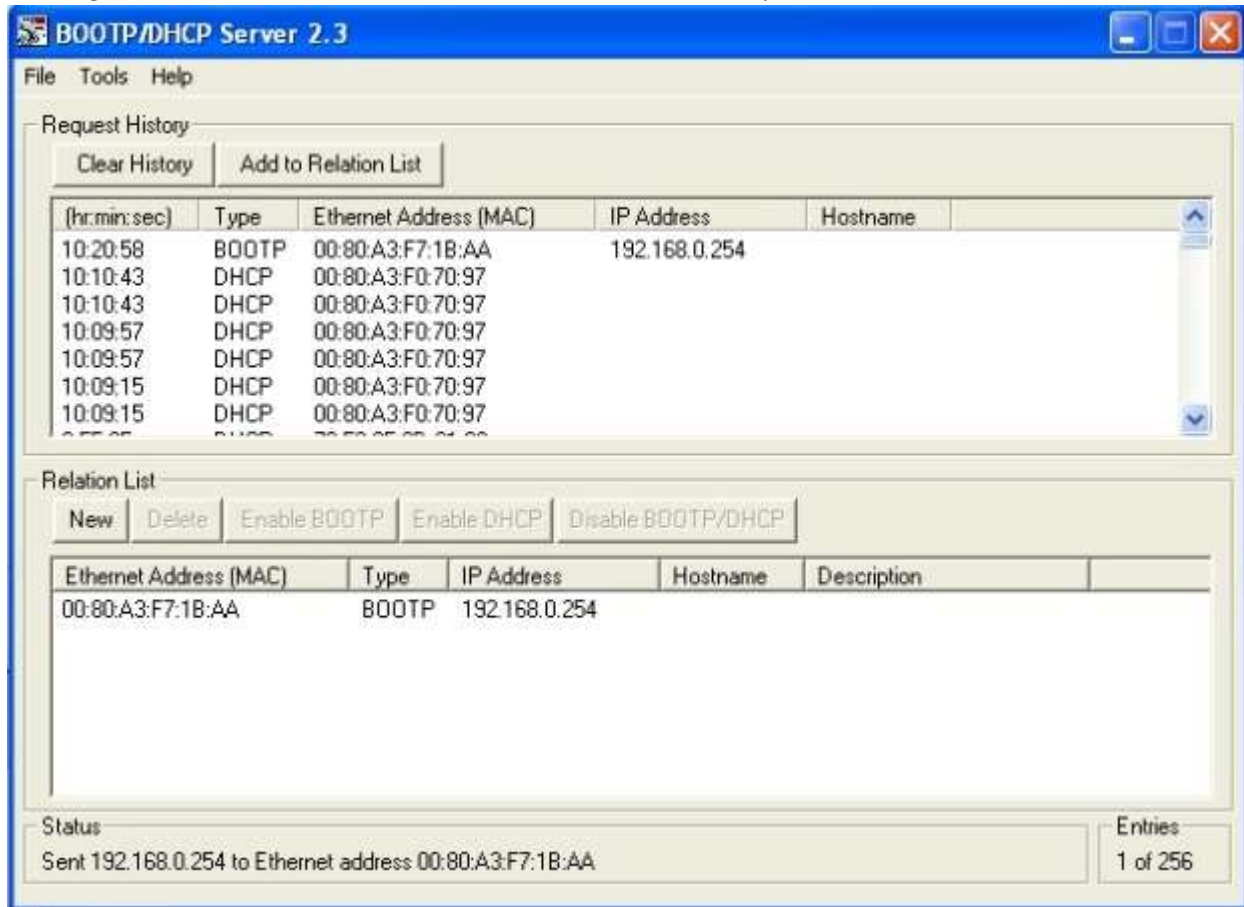
Example of Generic Ethernet Module of one antenna with single antenna mode

**Module Properties Report: LocalENB (ETHERNET-MODULE 1.1)**

General | Connection | Module Info

Type: ETHERNET-MODULE Generic Ethernet Module  
Vendor: Rockwell Automation/Allen-Bradley  
Parent: LocalENB  
Name: KPORT\_EIP  
Description:   
Comm Format: Data - SINT  
Address / Host Name  
☒ IP Address: 192 . 168 . 0 . 253  
☐ Host Name:   
Connection Parameters  
Input: 101 34 (8-bit)  
Output: 102 34 (8-bit)  
Configuration: 128 0 (8-bit)  
Status Input:   
Status Output:   
Status: Running  
OK Cancel Apply Help

To assign an IP address to the reader use BOOTP as in the example below



NOTE: readers will be preconfigured before shipping to the number of antennas requested, if only one antenna is used it will be preconfigured to single antenna mode. So, all the end user needs to do is configure an IP address with BOOTP and add a Generic Ethernet Module to their RSLogix5000 project with the proper number of ins and outs

## Example of Controller tags for counter 1 and antenna 1

Controller Tags - Controller1(controller)

Scope: Controller1 Shgw... Show All

Name	Value	Force Mask	Style	Data Type	Description
- XPort_EIP_MB.1.Data	(...)	(...)	ASCII	SINT[130]	
+ XPort_EIP_MB.1.Data[0]	16#00		Hex	SINT	XPORT-EIP control word, ignore
+ XPort_EIP_MB.1.Data[1]	16#00		Hex	SINT	
+ XPort_EIP_MB.1.Data[2]	16#00		Hex	SINT	
+ XPort_EIP_MB.1.Data[3]	16#03		Hex	SINT	Antenna 1 Counter
+ XPort_EIP_MB.1.Data[4]	'3'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[5]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[6]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[7]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[8]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[9]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[10]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[11]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[12]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[13]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[14]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[15]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[16]	'0'		ASCII	SINT	Antenna 1 tag data
+ XPort_EIP_MB.1.Data[17]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[18]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[19]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[20]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[21]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[22]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[23]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[24]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[25]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[26]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[27]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[28]	'4'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[29]	'2'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[30]	'0'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[31]	'6'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[32]	'6E'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[33]	'61'		ASCII	SINT	
+ XPort_EIP_MB.1.Data[34]	16#00		Hex	SINT	

Monitor Tags Edit Tags