EtherNet/IP™ Scanner

Mitsubishi Electric offers an EtherNet/IP™ Scanner for the Q Series platform. The EIP4CCPU allows the Q Series to talk with other EtherNet/IP™ connected third party CPUs, such as ControlLogix™ or CompactLogix™, to share data and to directly control EtherNet/IP™ distributed devices such as I/O (Block or Point), Drives and other devices.

Model Number		EIP4CCPU
Stocked Item		S
Certification		UL • cUL • CE
Number of Client TCP Connections		32 (*1)
Number of Server TCP Connections		8
PLCs Supported on Backplane		1 to 3
Changing Configuration During Operation		Yes (*2)
Client Class 1 Implicit (I/O) Messaging	CIP Connections	60 (*3)
	Total Combined Input and Output Data Size	Up to 14KB (high speed shared memory limitation)
	Max Data Size	511 bytes
	Connection Type (Target to Originator)	Multicast (*4)
	Transport Trigger	Cyclic
	Data Type	SINT, USINT
	RPI	1 to 8388ms
	Minimum Timeout Time	128ms (timeout multiplier is adjusted according to the RPI)
Client Explicit Messaging	Class 3 CIP Connections (Connected)	16 (*3, *5)
	UCMM (Unconnected)	16 outstanding requests (*5)
	Max Data Size	120 words
	Connection Type (Target to Originator)	Point-to-Point
	Cache Type	Un-cached
	Transport Trigger	Application
	Data Type	INT, UINT
	RPI	7500ms
	Timeout Multiplier	4x
	Tag Access Methods	Data table read/write, Typed read/write, CIP generic
	PLC Implementation	Based on populating internal PLC registers with a predefined messaging structure
Server Class 3 Explicit Messaging	CIP Connections	16
	Max Data Size	250 words
	Connection Type (Target to Originator)	T->O Point-to-Point
	Transport Trigger	Application
	Data Type	INT, UINT
	RPI	1 to 8388ms
	Timeout Multiplier	4x to 512x
	Tag Access Methods	Data table read/write, Typed read/write, CIP generic
	PLC Implementation	Predefined device mappings

Notes:

1. The client TCP and CIP connections share a common resource pool. The number of TCP and CIP connections is dependent upon one another and must satisfy the following formulas:
   1. (Number of TCP connections * 4) + (Number of CIP connections) <= 160
   2. (Number of CIP connections) <= 60
2. If configuration is changed via EtherNet/IP by editing the Connection Configuration objects (RSNetWorx for EtherNet/IP method), the configuration will take effect immediately without rebooting the device. If the configuration is transferred as an XML file via FTP to the device (Windows® Configuration Utility method), a reboot is required for the configuration to take effect.
3. The number of simultaneous class 1 connections lists the total number of simultaneous I/O connections that can be made to remote devices, regardless of whether or not those devices are being served by a single adapter at one IP address (modular devices such as Flex I/O and Point I/O will consume one class 1 connection for each module attached to the chassis/adapter). Because the scanner supports up to 128 TCP connections (sockets), up to 128 simultaneous physical remote devices (adapters) can be attached to. At the same time, the scanner contains a pool of 256 class 1 CIP connections and 16 class 3 CIP connections. So, for example, if the scanner is configured to target one Flex I/O adapter with three modules on the chassis, then it will use the following internal resources: one TCP connection and three class 1 CIP connections. Additionally, if the user wants a connected explicit messaging request to target (for example) module #2 on the chassis, then this will consume one of the 16 class 3 CIP connections (so in total, one TCP connection, three class 1 CIP connections, and one class 3 CIP connection will be in use). During configuration, the user can keep adding connections until they run out of either TCP connections or 17 ICC class 1 connections. For example, if the network contains a large number of modular devices with multiple modules on each adapter, then it is likely that the pool of class 1 CIP connections will be exhausted first. On the other hand, if the network does not contain any modular devices, then only one class 1 CIP connection will be required for each TCP connection, and it is therefore likely that the number of TCP connections will be exhausted first.
4. Up to 20 unique multicast addresses are supported per TCP connection.
5. Both connected and unconnected explicit messaging requires the use of interrupts. Each interrupt can only service one outstanding explicit message at any given time. Since there are only 16 interrupts, the total number of outstanding connected and unconnected explicit messages cannot exceed 16.