

Panasonic FP7 MEWTOCOL-7 Communications Drivers

Information Sheet for Crimson v3.0+

Compatible Devices

Panasonic PLC's equipped with a serial or Ethernet port capable of being configured as a MEWTOCOL-7 slave.

Verified Device

Panasonic FP7 CPS31ES

Overview

Red Lion's communication drivers for the Panasonic MEWTOCOL-7 are master drivers available for both serial and Ethernet ports providing access to memory ranges as described within.

Serial Port Configuration

In Panasonic's Control FPWIN Pro 7 software select the desired COM port in the Serial ports folder of the project tree.

📸 Working2.pro - Control FPWIN Pro 7 - The IEC 61131-3 progr	amming sy	/stem - COM0			-				
Project Object Edit Online Monitor Debug Extras Window Help									
29日回学校 Q 31日秋 WatrAddres									
Project 🔹 🔹 #ill Program 3 🖉 System connection 3 🥜 COMD 🗙 #ill Program 2 🦷 1/00 map and unit configuration 🔎 IP addresses - #ill Program 1 🥓 Memory size 🖉 System								e [©] System c	
🐅 🐅 👌 冬 🙆 🗷 🧇	No	Item name	Data	Dime	Range	Additional inform	mation		
▲ ■ Project [U:\PADDOCK\Panasonic\FPWIN Pro 7 Files\	768	Communication mode	MEWTOCOL-7 slave		MEWTOCOL-COM master	The PLC is a ME	WTOCOL-COM slav	ve unit. The slave rece	ves c
PLC (FP7 CPS31ES)	769	Station number	1		1 to 999	Station numbers	are the numbers to	identify the different	PLC
System registers	770	Baud rate	115200	baud	230400	Specifies the bau	d rate of the port.		
- Memory size	771	Data length	8 bits		8 bits	Selects the data I	length.		
Hold on/off	772	Parity	Odd		None	Selects the parity	/ check.		
Act on error	773	Stop bits	1 bit		1 bit	Specifies the nur	mber of stop bits.		
- / lime-out	774	RS/CS control	Disable		Disable				
B CONT	775	Sending delay time	0	ms	0.0 to 100.00				
COMI	776	Start code	No-STX		No-STX	Selects the start	code.		
COM2	777	End code/reception done condition	CR		CR	Selects the end of	ode.		
4 Ten Ethernet	778	Reception done judgment time	0	ms	0.0 to 100.00				
IP addresses	779	Modem connection	Disable		Disable	Specifies if a mo	dem is connected.		
- Time synchronization									
🛗 FTP server									
🛅 FTP client									
SMTP client									
System connections									

Set the Communication mode to MEWTOCOL-7 slave. Select the desired Station number and port settings including Baud rate, Data length, Parity and Stop bits.

In Crimson's Communications category select the desired serial port in the Communications tree and click on the Pick... button.

Al New - X	Driver Selection
Communications	Driver: No Driver Selected
RS-485 Comms Port A	
=0 RS-232 Comms Port =0 RS-485 Comms Port B	Port Commands
Protocol 1	Clear Port Settings Add Additional Device
Protocol 2 Protocol 3 Driver Picker	for Serial Port
Image: Services Manufactures Image: Services Mouse Image: Services Particises Image: Services Particises	rer Driver Selected No Driver Selected No Driver Selected PP7 MEVIOCOUT-COM Master Version 1.00 Contact t Koyo er
Slot 1 Slot 2 Slot 3	Cancel Total of 171 Drivers Available.
Slot 4	

Find the Panasonic FP7 MEWTOCOL7-COM Master communications driver as shown above and click OK.

No INCON +	Driver Selection
 Communications RS-232 Program Port RS-485 Comms Port A 	Driver: Panasonic FP7 MEWTOCOL7-COM Master Pick
RS-232 Comms Port - MEWTOCOL7-COM	Port Settings
PLC1 Q PS-485 Comms Port B C Port B	Baud Rate: 115200
Protocol 1	Data Bits: Eight 👻
Protocol 1	
Protocol 2	Stop Bits: One 🔻
Protocol 4	Parity: Odd
C Ch LICE Hort Ports	Tung.
Wemory Stick	Port Sharing
Mouse	Share Port: No TCP Port: 0
🖃 🅵 Services	
Time Manager	Port Commands
Grand Contraction	Clear Port Settings
👼 Sync Manager	Add Additional Device

Modify the Baud Rate, Data Bits, Stop Bits and Parity settings such that it mirrors the port settings in the FPWIN software.

Next select the PLC device and set the Station Number to the same value as configured in the FPWIN software in the first step of this section.

Navigation Pane X	Communications - RS-232 Comms Port - PLC1		
Kew Kew Communications One Rs-232 Program Port One Rs-485 Comms Port A One Rs-485 Comms Port B Pc1 Ps-485 Comms Port B Pc	Device Settings Enable Device: Yes Device Identification Station Number: 1		
Protocol 1 Protocol 2 Protocol 3 Protocol 4 USB Host Ports Memory Stick Keyboard Keyboard Mouse	Advanced settings Spanning Reads: Transactional Writes: Enabled Preempt Other Devices: No Favor UI Writes:		

Ethernet Port Configuration

In Panasonic's Control FPWIN Pro 7 software select the IP addresses item in the Ethernet Folder of the project tree.

m Working2pro - Control FPWIN Pro 7 - The IEC 61131-3 programming system - IP addresses									
Project Object Edit Online Monitor Debug Extras Window Help									
③ ■ 9 2 2 3 3 WStarAddres - ▲ 3 3 3 0 0 2 2 2 2 3 4									
Project 👻 🖡 🗙	🛤 Prog	jram_3 🖉 System connection 3 🖌	🗲 COM0 🛯 🛤 Program_2	🚺 I/O m	ap and unit configuration	IP addresses × Program_1	🎤 Memory size	🖉 System	
😵 🗣 👌 🥹 ڬ 년 🧇	No	Item name	Data	Dime	Range	Additional information			
A 📰 Project [U:\PADDOCK\Panasonic\FPWIN Pro 7 Files\	846	Use IPv4 address	Yes		Yes				
PLC (FP7 CPS31ES)	847	Automatically obtain IPv4 address	Disable		Disable				
4 🦫 System registers	857	IPv4 address	10.10.0.5						
Je Memory size	859	IPv4 subnet mask	255.255.255.0						
Hold on/off	861	IPv4 default gateway	0.0.0.0						
Act on error	846	Use IPv6 address	No		Yes				
/2 Time-out	847	Automatically obtain IPv6 address	Disable		Disable				
A Serial ports	881	IPv6 address	fe80::1234:5678:1234:5678						
	873	IPv6 subnet prefix length	64		4 to 128				
	897	IPv6 default gateway	fe80::1						
Ethernet	921	Automatically obtain DNS server IP add	Disable		Disable				
	925/922	Preferred DNS server IPv4/IPv6 addres	s 0.0.0.0						
Time synchronization	933	Alternate DNS server IPv4/IPv6 addres	s 0.0.0.0						
FTP server									
SMTP client									

Configure an appropriate IPv4 address according to the network requirements. Please consult your IT department for assistance if needed.

Next select an unused System connection found in the Ethernet folder of the project tree.



After enabling this System connection, set the Communication mode to MEWTOCOL-7 slave and the Communication method to TCP/IP. Set a Source port number available for use.

In Crimson's Communications category select an available protocol in the Network element of the Communications tree and click on the Pick... button.

🕒 🔿 🗋 🏊 🔒 🖻 🖬 🔌 🖨 🍅	
Navigation Pane X	Communications - Network - Protocol 1
Sk New - 🗙	Driver Celestian
Communications	
RS-232 Program Port	Driver: No Driver Selected Pick
RS-485 Comms Port A	
- RS-232 Comms Port	Port Commands
RS-485 Comms Port B	Delete Network Port
Protocol 1	Clear Port Settings
Protocol 2	Add Additional Device
👸 Protocol 3	Add Additional Device
Protocol 4	
USB Host Ports	r Picker for Ethernet Port
Keyboard	anufacturer C Driver
2 Mouse	lizzarszp
E Services	FP7 MEVFOCOL7-COM TCP/IP Master Version 1.00
Time Manager	lodbus la
OPC Proxy	i-iron mni Flow
ETP Server C	Dmron
Sync Manager	
	nasonic - Matsushita
E The Comms Modules	arker
Slot 1	
Slot 2	
🚺 Slot 3	
Slot 4	Total of 99 Drivers Available.
Slot 5	
Slot 6	

Find the Panasonic FP7 MEWTOCOL7-COM Master communications driver as shown above and click OK.

Next select the PLC device and configure the Primary IP Address and the TCP Port such that it matches the IPv4 address and the Source port number in FPWIN configuration respectively.

Navigation Pane X	Communications - Network	- Protocol 1 - PLC1
🙈 New 👻 🗙	Device Settings	
dommunications	Device Settings	
RS-232 Program Port	Enable Device: Yes	•
RS-485 Comms Port A		
•① RS-232 Comms Port	Device Identification	
•① RS-485 Comms Port B	Brimany ID Address	10 10 0 5
Potwork	Finiary IF Address.	10.10.0.5
Protocol 1 - MEWTOCOL7-COM	Fallback IP Address:	0.0.0.0
PLC1	TCD Parts	32769
Frotocol 2	ICP Pole	32703
p Protocol 5	Protocol Options	
G Protocor4	Protocol Options	
Mamony Stick	Link Type:	Use Dedicated Socket
Keyboard		
Mouse	ICMP Ping:	Disabled 🔻
E 🥵 Services	Connection Timeout:	5000 ms
Time Manager		
🙀 OPC Proxy	Connection Backoff:	200 ms
🕒 FTP Server	Transaction Timeout:	2500 ms
ᇕ Sync Manager	nanjacion nincoati	
🔁 Mail Manager	Advanced Settings	
SQL Sync	Advanced Settings	
Comms Modules	Spanning Reads:	Enabled 💌
I Slot 1		
In Stat 2	mansactional writes:	Enabled
slot 4	Preempt Other Devices	No 🔻
Is Slot 5		
Slot 6	Favor UI Writes:	No
Slot 7	Comms Delay:	0 ms
Slot 8		

Note - Only configure the Fallback IP Address if there is a secondary FP7 IP address for redundancy communications.

Also ensure that the Red Lion device's Ethernet Port Settings are configured – please refer to the **NETWORK CONFIGURATION** section within the Crimson manual.

Ethernet User Access

Ethernet configuration access is provided to the Red Lion device's UI by using the DevCtrl function:

INT **DEVCTRL(**DEVICE, FUNCTION, DATA)

For DEVICE use the Device Number shown in Crimson's lower Toolbar when the MEWTOCOL7-COM PLC is selected in the Communications tree.



For FUNCTION reference the codes below.

Function Code	Operation Performed
1	Set Primary IP Address
5	Set Fallback IP Address
2	Set TCP Port
4	Get Primary IP Address
6	Get Fallback IP Address
7	Get Fallback Status $(1 = Fallback active, 0 = Primary active)$

DATA is defined as a string containing write data.

Note returned data is always a number.

For demonstration purposes consider the following functions within a user program accessing Device Number 1:

Progr	ams - EthernetConfig_1						
500	Properties						
Data	a Types						
	Prototype: void EthernetConfig_1(void)						
Prog	gram Code						
	// Set Primary IP Address to 10.10.0.5						
	DevCtrl(1, 1, "10.10.0.5");						
	// Set Fallback IP Address to 10.10.0.2						
	DevCtrl(1, 5, "10.10.0.2");						
	// Set TCP Port to 32769						
	Par(r + 1) (1 - 2 - 1) (2 - 2 - 2) (1 - 2)						
	Devoti((, 2, 52/05),						
	// Get Primary IP						
	$P_{\text{min}} = P_{\text{min}} + 1 (1 - 4 - 1)$						
	Filmalyr - Deveti(1, 4,);						
	// Get Fallback IP						
	<pre>FallbackIP = DevCtrl(1, 6, "");</pre>						
	// Get Fallback Status (1 = Fallback active, 0 = Primary active)						
	FallbackStatus = DevCtrl(1, 7, "");						
	•						

Data Access

The "Select Address for MEWTOCOL7-COM" dialog box can be found by selecting the device representing the Panasonic FP7 device in the Source drop down box of a Tag created in the Data Tag category in Crimson.

G 🔿 🗋 🚵 🖬 🖻 🖬 🐁 🖻 🖺 🏷 🖉 🗇	
Navigation Pane X	Data Tags - Tag1
🧠 New 👻 🛱 🔀 🎤	Data Format Colors Alarms Triggers Plot Security
😼 Data Tags 😿 Tag1	Data Source
	Source: 🔍 Internal
	Extent: Internal
	Manipulation: Complex
	Treat As:
	Access: New Tag
	Read Mode: Next 👻
	Storage: Master
	PLC1 Data Scaling
I I I I I I I I I I I I I I I I I I I	
Select Address for MEWTOCOL7-COM	
Data Item	nt
None> No Selection	
LD Link Data Register	
SD System Data Register	
WX External Input Words Detail:	s II
WR Internal Relay Words Type:	
WL Link Relay Words WS System Relay Words Mini	mum:
WI Direct Input Words T Maxi	mum:
Radi	c di

The following FP7 address memory registers are available for access.

OK Cancel

Prefix	Description	Data Types	Format	Range	Access
DT	Data Register	Word, Long, Real	Decimal	0-589823	R/W
LD	Link Data Register	Word, Long, Real	Decimal	0-16383	R/W
SD	System Data Register	Word, Long, Real	Decimal	0-255	RO
WX	External Input Words	Word, Long, Real	Decimal	0-511	R/W
WY	External Output Words	Word, Long, Real	Decimal	0-511	R/W
WR	Internal Relay Words	Word, Long, Real	Decimal	0-2047	R/W
WL	Link Relay Words	Word, Long, Real	Decimal	0-1023	R/W
WS	System Relay Words	Word, Long, Real	Decimal	0-223	R/W
Х	External Inputs	Bit	Mixed*	0 – 511F	R/W
Y	External Outputs	Bit	Mixed*	0 – 511F	R/W
R	Internal Relays	Bit	Mixed*	0 – 2047F	R/W
L	Link Relays	Bit	Mixed*	0 – 1023F	R/W
S	System Relays	Bit	Mixed*	0 – 233F	RO
Т	Timer Flags	Bit	Decimal	0 – 4095	RO
С	Counter Flags	Bit	Decimal	0 - 1023	RO
E	Error Alarm Relays	Bit	Decimal	0 – 4095	RO
Ι	Index Register	Long, Real	Hexadecimal	0 – 0xE	R/W
TSV	Timer Set Value	Long, Real	Decimal	0 - 4095	R/W
TEV	Timer Elapsed Value	Long, Real	Decimal	0 - 4095	R/W
CSV	Counter Set Value	Long, Real	Decimal	0 - 1023	R/W
CEV	Counter Elapsed Value	Long, Real	Decimal	0 - 1023	R/W

*Mixed format is defined as a decimal number with the least significant nibble (4 bits) in hexadecimal format. This is consistent with FPWIN/FP7 access.

In addition, registers noted below are accessible but require Slot designation. Slots are specified in the format of Sxxx where xxx represents the position of the FP7 module to be accessed.

Prefix	Description	Data Types	Format	Range	Access
UM	Unit Memory Words	Word, Long, Real	Hexadecimal	Sxxx:0-0x7FFFF	R/W
WI	Direct Input Words	Word	Decimal	Sxxx:0-62	RO
WO	Direct Output Words	Word	Decimal	Sxxx:0-62	R/W

Note since the driver maintains a mapping list of Slot designated data it is necessary to rebuild communications blocks after references have been manipulated/deleted. The Rebuild Comms Block utility can be found in the Utilities submenu of Crimson's File menu.

-c	දළං Untitled File - G12 - Crimson 3.0							
	<u>F</u> ile	Edit View Go Link Help						
ſ	-	New Ctrl+N	1 🐢 🖃 🔎					
1	2	Open Ctrl+O	Communications - RS-232 Program Port					
		Import						
	H	Save Ctrl+S	Driver Selection					
		Save <u>A</u> s	Driver: No Driver Selected Pick					
		Save Con <u>v</u> ersion	Port Commands					
		Save I <u>m</u> age	- Clear Port Settings					
		Prot <u>e</u> ction	Add Additional Device					
		<u>U</u> tilities	Recompile Database					
	×	E <u>x</u> it	Rebuild Comms Blocks					

The following items have also been provided for debugging purposes and will contain information received from the latest FP7 error response. Current values can be cleared by a data write.

Prefix	Description	Tag Mapping
LER	Latest Error Request	String of 60 character length
LEC	Latest Error Code	Number in hexadecimal format

FP7 Error Codes definitions are as follows.

Code	Description
0x41	Received command is in the wrong format.
0x42	Received command is unsupported.
0x60	Parameter does not exist or cannot be used.
0x61	Error in data area of request.
0x62	Registration limit exceeded.
0x63	Command cannot be executed in RUN mode.
0x71	Command in process error.
0x81	CRC error.
0x91	Slot access does not exist.

Serial Cable Information

Red Lion RS232 RJ12 Port	FP7 COM Port
Pin 2 - Rx	SD
Pin 5 - Tx	RD
Pin 3 - COMM	SG

Ethernet Cable Information

Standard Ethernet Cable

Revision History

08/16/17 – Created. 12/22/17 – Clarification in Data Access section. 01/05/18 – Modified supported Data Access details. 01/19/18 – Formatting improvements.