

CTI 2500P-ACP1 Communications Coprocessor Firmware Revision History

Firmware Version 4.09 (4FEB2019)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.2 and later V1.4 required for use of TCP/UDP management functions V1.26 required for MQTT Client protocol configuration

Following is a list of enhancements and corrections included in Firmware V4.09.

New Features:

- 1269 IP Aliasing feature allowing connections to two different Ethernet sub-networks
- 1366 MQTT Client protocol

Enhancements:

- 1390 Added message for notification that module reset was required to invoke changes made to IP Address and/or Subnet Mask fields in Module Configuration web page
- 1196 Increased number of variables managed by Network Binding task to 2000 and increased the publish rate to 210 data points per cycle
- 1395 Added new error (Error 392) for detection of the Invalid Array Index accessed in user program. Included in ACP1_STATUS function and web server Error Descriptions page.
- 1398 Set 'Incompatible Application' (Error 175) status to create event log message, display on module front panel, show in Error Descriptions page, and in CTI Workbench 'Runtime' window if application program downloaded to ACP1 includes function blocks not supported by runtime.
- 1304 Increased runtime system memory limits to support 1.5MB of code and 2MB of database
- 1314 Updated runtime system to Straton V9.2 adding following features:
 - Support for Dynamic Memory Allocation and Management of Text Buffers
 - Functions to read/write arrays to file
 - Functions supporting Ethernet/IP Explicit Message command

General Operation:

- 1246 Semaphore protection error corrupting Event Log when simultaneously logging events from different code sections
- 1387 CTI Workbench connection attempts were rejected due to incorrect count of active server connections

Issues Causing Module Resets:

- 1388 Module resets when using 'Clock' function blocks in user program without setting RTC
- 1334 Module resets when CAMP Client detects a TCP socket error
- 1363 Module resets when FTP Server is unreachable when file transfer triggered (Error 412)
- 1262/1358 Module resets when EIP Tag Client encounters communication loss with server

Ethernet/IP Tag Client:

- 1262/1358 Module resets when EIP Tag Client encounters communication loss with server
- 1397 Module rejects TCP connections caused when TCP sockets were not released when EIP Tag Client connections were closed.

Embedded Network Switch Settings:

- 1283 Changed ingress and egress data rate limit settings
- 1299 Disabled 'Fast Aging' feature to prevent Ethernet unicast packets from being forwarded to all ports

2500P-ACP1 I/O:

- 1315 Change to I/O configuration takes effect only after module reset
- 1321 Removed memory inefficiencies in I/O configuration
- 1325 Module does not work in Profibus network with 2500-RBC base controller

CTI 2500 Data Cache:

- 1375 Some values not written when transfer buffers limit exceeded

Modbus Client:

- 1252 Modbus Client writes zero values on first transaction after program start
- 1298 Modbus Client UDP communications timeout not detected
- 1389 Modbus Client error status not cleared if Modbus Client was not in project configuration

Web Server:

- 1269 IP Aliasing feature allowing connections to two different Ethernet sub-networks
- 1329 IP Address validation error in Module Configuration web page
- 1390 Added message for notification that module reset was required to invoke changes made to IP Address and/or Subnet Mask fields in Module Configuration web page

Firmware Version 3.11 (1SEP2016)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.2 and later V1.4 required for use of TCP/UDP management functions

Issues Resolved:

- 1232: ACP1 resets after downloading project with unconfigured Ethernet/IP Tag Client fieldbus protocol manager.
- 1233: 2500 Data Cache interface does not reconnect to Host PLC after ACP1 project transitions from PAUSE to RUN mode. This issue was created in Firmware V3.10.

Firmware Version 3.10 (25JUL2016)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.2 and later V1.4 required for use of TCP/UDP management functions

Issues Resolved:

- 1214: ACP1 did not automatically recover from a Data Cache “Configured PLC Address Inaccessible” error (Error 330) created when a new PLC program was downloaded to the Host PLC while the ACP1 application was running with CTI Data Cache enabled.

Firmware Version 3.09 (07JUL2016)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.2 and later V1.4 required for use of TCP/UDP management functions

Issues Resolved:

- 1206: ACP1 resets and will not load project after download of certain project configurations.
- 1208: ACP1 does not allow connections to Workbench and Web Server after connections are lost when using TCP management functions.
- 1209: ACP1 TCP Management function "TcplsConnected" returns incorrect value when attempting to reconnect after lost TCP connection.
- 1212: ACP1 resets following 'System Exception' error during PLC program download if CTI 2500 Data Cache interface is active.

Firmware Version 3.08 (10MAY2016)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.2 and later V1.4 required for use of TCP/UDP management functions

Issues Resolved:

- 1071: During the firmware update process, the ACP1 generated requests via the CTI 2500P-ACP1 I/O (chassis backplane) interface that caused the CTI 2500 Series CPU to log SFIO errors to the PLC Event Log.
- 1198: Improved handling of data transfer buffers and increased the number available to Data Cache interface for PLC communications from 16 to 30. This significantly increases amount of data that can be written to CPU on each PLC scan.
- 1200: The "Data Cache Transfer Error" (Bit 3) was not correctly reported by the CTI_ACP1_STATUS function when no data transfer buffers were available.
- 1201: The "CAMP Client Error" (Bit 15) was not correctly reported by the CTI_ACP1_STATUS function.

Firmware Version 3.07 (28APR2016)

Note: This was a limited-release version.

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.2 and later V1.4 required for use of TCP/UDP management functions

New Features Added:

- 1162, 1174: Change format of IP Address shown in front panel display to remove leading zeros and add the subnet mask in CIDR format (count of leading 1's in the subnet mask).
- 1170: Added functions for management of ports/sockets for building client and/or server applications for TCP/UDP communications using custom (user generated) protocols. Use of these functions requires CTI Workbench V1.4 or later.

Issues Resolved:

- 1143: Modify sequence numbering used to track order of Ethernet/IP IO data packets to ensure sequence count advances with each new generated data packet.
- 1145: Corrected "Device Compatibility Verification" operation that performs version checks between CTI Workbench and ACP1 firmware. Firmware version is now displayed in DD.DD (Major.Minor Revision) format.
- 1155: Task that checked for "Duplicate IP Address" caused an error condition when both Ethernet Port connections were restored at the same time.
- 1166: Improve Data Cache interface so that all variables designated as "Write to PLC" are updated in the PLC once at startup and when the PLC link is restored following a loss of communications.
- 1178: Add option to isolate front panel Ethernet Port 1 from Port 2 when User Switch 4 is set to CLOSED position. This setting blocks forwarding of all Ethernet packets between front panel ports and allows ACP1 modules to be used in redundant network topologies without creating network loops.
- 1194: Corrected cases where large Data Cache configurations and rapid variable state changes by application logic or Ethernet/IP connections could cause System Exception errors

Firmware Version 3.04 (01SEP2015)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.2 and later

Issues Resolved:

1149: Ethernet/IP Scanner could not connect to more than 16 unique IP-addressed adapters. This was corrected so that EIP connections now count as one of 40 possible server connections to the ACP1.

Firmware Version 3.03 (28JUL2015)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.2 and later

New Features Added:

The following interfaces for Ethernet/IP communications:

- I/O Scanner
- I/O Adapter
- Explicit Message Adapter (User Specified Vendor Object)
- Tag Client

Increased maximum number of Data Cache elements to 4096.

Issues Resolved:

1134: Removed the “reset FPGA” event from being logged as it was sometimes confusing in problem diagnosis

1142: The network stack queue size was increased from 32 to 128 to resolve a problem where a heavy burst of "non - TCP" message traffic could cause dropped packets.

Firmware Version 2.07 (30APR2015)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.1 and later

Issues Resolved:

- 1133: Data Cache requests failed because one or more message buffers were unavailable. Corrected problem with code that should have emptied the Data Cache message input queue on each Straton startup

Firmware Version 2.06 (27APR2015)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.1 and later

Issues Resolved:

- 1067: Attempts to make TCP connections to Modbus Server and Binding Publisher ports are rejected and/or closed incorrectly, causing the Client to initiate replacement connections.
- 1076: System Exception Error (and module reset) occurs while attempting to upload project source files from target into CTI Workbench.
- 1111 Corrected problem with an internal system timer that causes all time-based operations to stop working after a period of approximately 49.7 days.
NOTE: This resolves the issue described in the 2500-ACP1 Technical Advisory published 3/13/2015 on the CTI web site.
- 1114 System Exception Error (and module reset) occurs when connection to external device is interrupted and then reestablished. Corrected deficiencies in the TCP/IP “select” call for managing data input on various Ethernet sockets.

New Features and Improvements:

- 1087: Improved strategy for clearing the ARP cache. Added code to flush the ARP cache when it is detected that the Ethernet link has been lost. This will force any TCP packets waiting to be transmitted to be preceded by an ARP to determine the MAC address for the packet's destination.
- 1092 Added “CTI Workbench Version” to information displayed on ACP1 web server *Product Information* page. This field displays correct data only when used with CTI Workbench Version 1.2 or later.
- 1122, 1123, 1126: Improved Event Log to include addition of ACP1 Project name and CTI Workbench Version number after each module startup and project download. Also added reporting of product serial number on each module startup.
- 1124 Enabled “Host Real Time Clock Synchronization” as default setting. This automatically synchronizes the ACP1 RTC to PLC clock when ACP1 Data Cache is used.
- 1125 Changed ACP1 Data Cache Error Code priority so that Error Code 210 is displayed on front panel when connection to Host PLC is declared “off-line” and re-registration with Host PLC is required. This matches Error Code priority implemented in 2500P-ECC1.

Firmware Version 2.05 (23JAN2015)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.1 and later

New Features and Improvements:

Update MPC8309 memory timing registers for DDR2 memory – slight improvement in performance

Firmware Version 2.03 (02OCT2014)

Compatibility Table		
2500-Cxxx Processor	SIMATIC® 505 Controller	CTI Workbench (Product No. 2500-WB-USB)
I/O Interface: Any Data Cache: Firmware V7.05 and later	I/O Interface: Any Data Cache: Not supported	V1.1 and later

Original Production Release