



## Firmware Release Notes

### Update to 3000 Series TS2 Firmware

Peek is pleased to announce the release of Version 3.1.0 of the NEMA TS2 compatible firmware for the 3000 Series Traffic Signal Controllers. This update adds a few minor enhancements and addresses some issues previously reported by customers.

**Product** ..... **TS2 Firmware for the 3000 Series Traffic Signal Controllers**

**Version**..... **Version 3.1.0**

**Release Date** ..... **4/8/03**

#### Importance of This Update:

This is an optional update for TS2 3000 Series Traffic Signal Controllers. It provides significant, although not vital, improvements to the operation of a TS2 3000 Series controller.

#### Product Compatibility:

This firmware is designated part number 8216A version 3.1.0, and is released for use in all field and production 3000 and 3000E Traffic Controllers that have been designated NEMA TS2 units. It should not be installed in units selected to run as NEMA TS1 units, or those that communicate via the NTCIP protocol. It can be used to update either series 8216A or 5921 firmware.

This release is compatible with version 2.0.2 or higher of *CL-MATS*<sup>®</sup>, but version 2.1.4 or higher is recommended if you are planning to use the new Double Diamond<sup>™</sup> monitoring features. The firmware should not be used with versions of CL-MATS older than v2.0.2, and it is not compatible with *Smartways*<sup>®</sup>.



**Note** If this update is used to replace 5921 firmware, the controller will no longer be compatible with the Smartways software. And when upgrading from the 5921 firmware on 3000 Series controllers, all Special and Restricted Menu settings must be cleared.

**Table 1 – Proper checksums for the v3.1.0 TS2 3000 Series firmware**

EPROM	Checksum value (hex)
0	9861
1	C0D4

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## Upgrading the Firmware of a 3000 Series Traffic Controller

To upgrade a 3000 or 3000E Traffic Controller in the field, follow these instructions:

1. If you ordered updated EPROMS from Peek rather than just the firmware files, skip down to step 6.
2. Locate the following items in order to burn the updated firmware to EPROMS:
  - Two 4MB EPROMs (28 pin DIP package), these may be recycled out of field units
  - an EPROM burner capable of holding a 4MB EPROM
  - EPROM burning software
  - the two binary files containing the updated 3000E firmware
3. If the EPROMs were used previously, erase them.
4. Insert one of these blank EPROMs into the burner and burn the firmware file named **v310-0.bin** onto it. Label it '**EPROM 0**'.
5. Insert the other blank EPROM into the burner and burn the firmware file named **v310-1.bin** onto it. Label it '**EPROM 1**'.
6. Observing all safety and other municipal ordinances, place the intersection to be updated into flash.
7. Power down the 3000 Series Traffic Controller.
8. Open the front panel and remove the two EPROMs that are currently installed in the unit. Replace them with your updated versions, being sure to place the properly labeled EPROM in each socket.
9. Restore power to the unit.
10. Next, you'll need to verify that the controller is functioning correctly. Press the **SHIFT** and **MENU** buttons simultaneously to get to the Main Menu.
11. Press **1** for Dynamic Displays.
12. Press **1** for Controller Func(tions).
13. Examine the Normal Status screen for proper operation and cycling.
14. Press the **MENU** button once, and select **9.Checksum Status**. If a Checksum is present, follow the screen instructions to clear the Checksum. Checksums are latched failures; so you will need to restart the Controller to release the latched failure.
15. Press the **MENU** button once, and select **10.Comm.** (10 is selected by pressing **Shift** and **0** simultaneously.)  
If 'Overrides Active' appears on the bottom line of the Controller-Master-Comm Dynamics screen, then follow the instructions on the screen to clear the error by pressing the **1** button. The screen should now state "No Overrides Active."
16. Press the **MENU** button once, and select **1**. Examine the top line and the bottom line of the Normal Status screen for the words "ERROR" or "FAILURE." If they occur, try shutting off the unit, reseating the EPROMS, and retrying the above steps. If the error message still appears, contact your Peek customer service representative, as listed on page 5, for assistance.  
  
If these words are not present, then consider the 3000 Series unit to be a healthy, functioning controller.
17. Return the intersection to normal operation.

## Enhancements Included in this Release

These are new features and improvements that have been made to the 3000 Series TS2 firmware.

**Table 2** — New features and enhancements

Enhancement	Description	Enhancement ID
Ability to clear all memory and log files inside a 3000 series controller	A Memory Clear feature is now available. Contact your Peek Customer Service Center if you wish to use this capability.	PR2003-5076
Enable/Disable custom Third Car Detection detector pairs using a Time of Day circuit	TOD circuit #132 can be used to activate custom Third Car Detector pairs: 1:2, 3:4, 5:6, 7:8, as opposed to the default Third Car detector pairs of 1:13, 3:14, 5:15, and 7:16. The TOD circuit was previously labeled 'N/U', but is now labeled 'PHX'.	ECR-3595
Ability to retrieve data logs from a Double Diamond MMU via CL-MATS	The communications handling routines of the 3000 series controller were modified to pass the Double Diamond MMU protocol.	PR2003-5283-387
The TS2 3000 series controllers now log the "Local Flash Active" bit from an MMU.	The bit is now detected on "Local Flash Bit" #79 in the Type 129 Response Frame from an MMU, and the information is logged.	PR2003-5474-404

## Issues Addressed in this Release

The following are known issues that existed in previous releases of the 3000 Series Traffic Signal Controllers TS2 Firmware which have been rectified in the 3.1.0 version:

**Table 3** — Issues fixed in this release

Issue	Resolution	Issue ID
'Not-PED' Overlaps programmed as Double-Clearing did not double-clear. Acted as Standard Overlaps only.	Modified overlap logic to process Not-PED overlaps properly when programmed as Double-Clearing	PR2002-1127-7
Controller did not allow proper programming of Adaptive Split Inhibits. Any selection of Offsets 2 through 5 resulted in a Cycle/Split combination being saved into Offset 1.	Modified database input logic to properly accept and store Split Inhibits.	PR2001-1269-81
When 4 SPLITS/CYCLE => Y, the Phase Allocations screen did not reflect the correct Cycle number in the upper left hand corner.	Corrected display routine for Phase Allocation screen.	PR2002-4659-352
Diagnostics Menu did not launch properly when the user selected "4. Diagnostics" from the Main Menu.	Added logic to correctly send the controller into Red Rest and then launch the Diagnostics Menu once Red Rest had been reached.	PR2003-5007
Controller Dynamic Screen didn't indicate MX2 when the MAX 2 timer was being used- Instead, "MX1" was always displayed.	Made simple logic correction to indicate that MAX2 was in use.	PR2002-4723-357
If the Preemption Exit method was set to Exit to Coordination, the PEDs on the CNA Coordinated phases were never serviced. Their PED Perms were closed and never reopened.	Added logic to ensure that Ped Perms on Coordinated phases are checked and opened if necessary every pass through the coordination code.	PR2002-4239
Walk Rest did not work properly during Coordinated operation when CNA was not applied.	Rewrote Walk Rest and WRM logic to function properly.	PR2002-3890
Cycle Failures were reported prematurely when in Short Route Offset seeking. Due to the nature of Short Route, it is expected that some phases may be skipped while the Coordinator is attempting to get into sync.	Disabled the Cycle Fail logic while the controller is offset seeking in Short Route.	PR2002-4837

**Table 3** (continued)— Issues fixed in this release

Issue	Resolution	Issue ID
Data entry on COS to Lead/Lag screen did not work due to problem with Reverse Video.	Corrected the COS to Lead/Lag routine.	PR2002-4839
When running Coordination- Lead/Lag with C.N.A enabled: if the coord phases returned early, Walk did not start with green, but was delayed. Instead it came on at the normal time had all phases been Forced-Off.	Modified Coord/LeadLag/C.N.A logic to apply the appropriate PED calls to bring up the walk at the correct point in the cycle.	PR2002-4703
The Ring 1 NEMA Input functions affected Ring 3 and Ring 2 affected Ring 4.	Removed logic assigning Ring1 functions to Ring3 and Ring2 to Ring4.	PR2002-4719
Controller sometimes did not enter or exit Preemption correctly while in Soft Flash.	Modified Flash and Preempt Logic to allow smooth transition in and out of Soft Flash when Preemption occurs.	PR2003-5089
Ped Override Mode did not function properly on Actuated phases during Coordination. If the Ped time is greater than the time allocated for the phase, the Ped Perms would close too soon.	Modified the Ped Perm logic to check for the Ped Override mode scenario on Actuated Coord Phases, so Ped Perms can be opened appropriately.	PR2002-3508
Intermittent problem of the controller restarting while CL-MATS polling. A related issue was that the controller dropped CVM w/Event Log retrieval and the controller reported a "PORT 1 FAILURE"	Removed obsolete code which inappropriately reinitialized PORT 1 during the PORT 2 interrupt	IR#A7 IR#A8
A Preemption run with a yellow Dwell interval caused the 3000E to lock up in all red.	Added logic to flag a Preempt Run as Invalid if a yellow Dwell interval is programmed.	IR#A13
Repeated warm restarts initiated from the controller's menu resulted in a BUS ERROR.	Removed Dynamic Memory allocations from Mainline scheduler.	PR2003-5618-411
If a user attempted to erase a Preempt Run but pressed "ENTER" before pressing the "Y/N" key, the controller gave a BUS ERROR	Corrected the keyboard logic.	PR2003-5635-414

## Known Issues in this Release

The following issues are currently known to exist in the Version 3.1.0 firmware:

**Table 4** — Known issues in this release

Issue	Workaround	Issue#
Additional 'undefined events' in Event Logs when retrieved by older versions of CL-MATS.	The new firmware includes new items that are recorded to the Event Log. Some of these events will be reported as 'undefined' if you are using versions of CL-MATS lower than v2.1.4.	n/a
Changing CENTRAL PORT from '2' to '3' and then back again to '2' disrupts the communications processor, at which point the controller will no longer respond to CL-MATS commands.	Avoid this sequence of CENTRAL PORT configuration changes. If it occurs, you will need to restart the controller to again get access via CL-MATS.	IR#A14
Missing 3000 DSP Modem User's Manual	The DSP modem user's manual has been unavailable. A new release of this document is planned for later in 2003.	n/a
Numerous errors in the 3000 Operating Manual	A completed revamped and updated operating manual will be available in the near future.	n/a

\* When the controller is programmed for Lead-Lag phasing with CNA Coordinated phases and an active Walk Rest Modifier (WRM), the Walk Rest parameter must also be set ON. Keep in mind that the Walk Rest parameter is not the same thing as the WRM. Walk Rest can be accessed by going to Main menu > Change Data > Controller > Phase Recalls/Modes and then paging down. (i.e. **MM>3>1>2>PgDn**) If Walk Rest is not required for Free running mode, Timing Plan 2 can be used (with wildcard values) for Coordinated operation. In this case, Timing Plan 1 should be identical to Timing Plan 2 except for the Walk Rest enabled phases, and could then be used in Free mode.

## Additional Guidance on the 3000 Series Traffic Signal Controllers

These are some other sources of information on Peek's 3000 Series of Traffic Controllers.

### Additional Documentation

These documents provide useful information about 3000 controllers and other products often used with them:

Document	Part Number
<i>3000 Series Operating Manual</i> .....	8204C
<i>3000 Series TS1 Firmware Release Notes</i> .....	99-331
<i>3000 Series NTCIP Firmware Release Notes</i> .....	99-333
<i>CL-MATS Installation Manual</i> .....	81-858
<i>CL-MATS Operating Manual</i> .....	81-883
<i>Double Diamond MMU Operating Manual</i> .....	8314B
<i>M3000 Operating Manual</i> .....	5928
<i>M3000 Firmware Release Notes</i> .....	99-329

Some information is also available at the Peek website: <http://www.peekglobal.com/>.

### Technical Support

All of these phone numbers and email addresses will connect you with Peek Corporation, however we recommend that you contact the United States office first if you require additional help concerning 3000 Series Traffic Controllers in general, or this firmware update in particular.

#### Primary Customer Service Center

##### Traffic Signal Controllers

Peek Traffic U.S. -- Customer Service Center  
 2511 Corporate Way  
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