



DOCSIS® Firmware Upgrade Notice

Broadcom Firmware 4.0



PURPOSE

The purpose of this document is to provide information about Broadcom firmware version 4.0.0 b9 for both 3348 and 3349 based DOCSIS transponders. For the 3348 based products, this is a Broadcom only firmware update. None of the Dallas code has been updated.

Product Personalities Affected (3349 Processor)

| Personality | Part Number | Description |
|-------------|-------------|-------------------------------|
| 1650 | 66900-0659 | HMS022 Internal |
| 1651 | 66900-0659 | HMS022 Internal Dual IP |
| 1652 | 66900-0677 | CMD-P+ HMS022 |
| 1653 | 66900-0677 | CMD-P+ HMS022 Dual IP |
| 1654 | 66900-0677 | CMD-P+ Alpha XM2 120v |
| 1655 | 66900-0677 | CMD-P+ Alpha XM2 120v Dual IP |
| 1656 | 66900-0677 | CMD-P+ APC 120v |
| 1657 | 66900-0677 | CMD-P+ APC 120v Dual IP |
| 1658 | 66900-0677 | CMD-P+ Alpha XM |
| 1659 | 66900-0677 | CMD-P+ Alpha XM Dual IP |
| 1660 | 66900-0677 | CMD-P+ ZTT+ Pre-98 |
| 1661 | 66900-0677 | CMD-P+ ZTT+ Pre-98 Dual IP |
| 1662 | 66900-0677 | CMD-P+ ZTT+ Post-98 |

REV. A
Dec. 31,
2009

Product Personalities Affected (3349 Processor)

| Personality | Part Number | Description |
|-------------|-------------|----------------------------------|
| 1663 | 66900-0677 | CMD-P+ ZTT+ Post-98 Dual IP |
| 1664 | 66900-0677 | CMD-P+ APC SM7 240v |
| 1665 | 66900-0677 | CMD-P+ APC SM7 240v Dual IP |
| 1668 | 66900-0677 | CMD-P+ Citation II |
| 1669 | 66900-0677 | CMD-P+ Citation II Dual IP |
| 1670 | 66900-0677 | CMD-P+ Alpha XM2 240v |
| 1671 | 66900-0677 | CMD-P+ Alpha XM2 240v Dual IP |
| 1812 | 66900-0702 | ECMM Vecima |
| 1820 | 66900-0680 | CMD-EL (End-of-Line) |
| 3600 | 66900-0657 | CMD-N-HLN3x4x - Orange Single IP |
| 3601 | 66900-0657 | CMD-N-HLN3x4x - Orange Dual IP |
| 3602 | 66900-0665 | CMD-N Motorola SG4000 |
| 3603 | 66900-0665 | CMD-N Motorola SG4000 Dual IP |
| 3604 | 66900-0657 | CMD-N-HLN3x4x - Green Single IP |
| 3605 | 66900-0657 | CMD-N-HLN3x4x - Green Dual IP |
| 3612 | 66900-0722 | CMD-N Cisco GS7000 |
| 3613 | 66900-0722 | CMD-N Cisco GS7000 DUAL IP |

Product Personalities Affected (3348 Processor)

| Personality | Part Number | Description |
|-------------|-------------|-------------------------------|
| 1600 | 900-0571 | Alpha Embedded Dual IP |
| 1601 | 900-0620 | Alpha External Dual IP |
| 1602 | 900-0528 | Alpha Embedded Single IP |
| 1603 | 900-0617 | Alpha External Single IP |
| 1605 | 900-0568 | Lectro CPR External Single IP |
| 1608 | 900-0618 | CMD-P |
| 1800 | 900-0595 | CMD-E |



381 Mansfield Ave
Pittsburgh, PA 15220

**DOCSIS® Firmware Upgrade Notice
Broadcom 4.0.0 (3348 & 3349)**

REV
A


SCALE

NONE

SHEET 2 of 7

Feature Enhancement and PTR Table
(Changes from 3.12.0 to 4.0.0)

| Description | DOCSIS Cable Modem | CMD-P+ | CMD-EL | CMD-N Cisco | CMD-N HLN | CMD-N Moto | OEM eCMM | Emb eCMM Txpndr |
|---|--------------------|--------|--------|-------------|-----------|------------|----------|-----------------|
| Feature - Support for optical amps for the GS7000 node. | | | | ✓ | | | | |
| Rebranding with Cheetah company name. See details below. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| PTR 9250, 9257 – Corrected minor issues when the power level on both receivers was below the switching threshold. | | | | ✓ | | | | |
| PTR 9246 – Eliminated a delay in switching times. | | | | ✓ | | | | |
| 9237 9278 9275- Corrected various display issues on the MTA web pages. | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ |
| 9245 – Corrected EVM, CER, and MER traps so that they function in all transponders instead of EL only. | | ✓ | | ✓ | ✓ | ✓ | ✓ | ✓ |
| PTR 9178 Limited values for EL SLM and Bar graph to fall within range of graph. | | | ✓ | | | | | |
| PTR 9244, 9254 Internal improvements for manufacturing support. No personality impacts. | | | | | | | | |
| 9236 Made force path “x” setting display properly after transponder power cycle. | | | | | ✓ | | | |
| 9280 Corrected possible sequence mismatch error on ping web page | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| 9318 Mapping of receivers through the forward control module was reversed | | | | ✓ | | | | |

| | | | |
|---|---|------|-----------------|
|  381 Mansfield Ave Pittsburgh, PA 15220 | DOCSIS® Firmware Upgrade Notice Broadcom 4.0.0 (3348 & 3349) | | REV A |
| | SCALE | NONE | SHEET 3 of 7 |

NEWLY SUPPORTED OR UPDATED MIB'S

Support for optical amps and switches for the GS7000 node required addition of the following:

SCTE-HMS-HE-OPTICS-MIB
SCTE-HMS-HE-OPTICAL-AMPLIFIER-MIB
SCTE-HMS-HE-OPTICAL-SWITCH-MIB

The previous MIB's require the following in order to compile.

SCTE-HMS-HEADENDIDENT-MIB
SCTE-HMS-HE-OPTICAL-TRANSMITTER-MIB

RECOMMENDATION


Cheetah Technologies highly recommends that all versions of the Cheetah DOCSIS Transponders (both 3348 and 3349 based) be upgraded to this latest firmware. For assistance with upgrading, contact Technical Assistance Center (TAC) at 866-944-1482

IMPORTANT NOTES REGARDING BROADCOM FIRMWARE VERSION 4.0 AND LATER

Starting with version 4.0 the Broadcom firmware has been modified to reflect the new Company name. The changes include new web page logo's, new default usernames and passwords for logins, replacement of the Tollgrade name in some SNMP OID's, and changes to company related information in option 43 of the devices DHCP requests.

In addition to the code changes, Cheetah Technologies has been issued a new MAC address OUI, new BPI and PacketCable Manufacturers Certificates, and a new CVC (Code Verification Certificate). The new MAC addresses, BPI, and Packet Cable certificates will be phased in when the existing certificates and associated MAC addresses are exhausted. These changes are not expected to cause operational issues.

The CVC change will eventually require a change to your CM config file to replace the Tollgrade CVC currently in use. Version 4.0 is the first firmware version that will be compatible with the new CVC. We will gradually be transitioning to the new CVC over the course of 2010. There is no immediate action required for the transition with this release; however we are asking that all fielded product be upgraded to version 4.0 or later by the end of 2010. For 2010 we will continue to provide 4.x code signed with the Tollgrade CVC. Starting in 2011 we will only provide code signed with the Cheetah CVC. Once code signed with the Cheetah CVC is downloaded the new Cheetah CVC will be required in the CM config file. Firmware versions 4.0 and later will accept either CV (see limitations below).

| | | | |
|---|---|------|-----------------|
|  381 Mansfield Ave Pittsburgh, PA 15220 | DOCSIS® Firmware Upgrade Notice Broadcom 4.0.0 (3348 & 3349) | | REV A |
| | SCALE | NONE | SHEET 4 of 7 |

During the transition you should be aware of the following limitations:

1. Versions of firmware prior to version 4.0.0 will not accept the new Cheetah CVC. Any devices running code older than 4.0.0 require the Tollgrade CVC to enable secure downloads. Therefore the easiest transition path will be to upgrade all firmware to version 4.0.0 or later before using the new Cheetah CVC.
2. Once an existing transponder downloads the new Cheetah CVC, or code signed by the new Cheetah CVC, it will no longer accept the Tollgrade CVC due to the signing start times of the CVC's. This means it will not be possible to downgrade firmware to a version prior to version 4.0.0 once the new Cheetah CVC is put into use.
3. The version 4.0.0 firmware will accept the Tollgrade CVC, and all previous versions of the Tollgrade firmware for downgrades as long as the Tollgrade CVC remains in use, and no Cheetah signed code is downloaded to the device.
4. The version 4.0.0 firmware will also accept the new Cheetah CVC, but will only accept 4.0.0 firmware and later afterwards.

Cheetah Technologies will provide Tollgrade signed images for the 2010 firmware releases. Customers should continue using the Tollgrade CVC with these images. At the end of the transition period, customers should verify that the following two conditions are met and then switch to the new CVC and Cheetah signed images.

1. All transponders in the operator's possession are upgraded to a minimum of version 4.0.0 firmware
2. Any transponders in the customers' possession but not deployed are also version 4.0 or later.


The yearlong transition period is meant to ensure there is adequate time for customers to verify that these conditions are met. Cheetah Manufacturing will be switching to 4.0 firmware early in 2010.

The following file naming conventions are used to identify the firmware versions and corresponding signature.

| CVC/signature | 3349 Based Transponder Filename | 3348 Based Transponder Filename |
|---------------|----------------------------------|----------------------------------|
| Cheetah | ctlp-302-n-us-4-0-0-bx_sto-S.bin | ctlp-300-n-us-4-0-0-bx_sto-S.bin |
| Tollgrade | tlgd-302-n-us-4-0-0-bx_sto-S.bin | tlgd-300-n-us-4-0-0-bx_sto-S.bin |

Cheetah recommends verifying the transition process in a lab setting prior to widespread deployment of the new CVC. Customers that meet the above conditions before the end of 2010 and want access to Cheetah signed images and the new CVC should contact customer support.

New customers that do not have any 3.x firmware in their system can use the Cheetah CVC from the start.


| | | | | |
|---|---|---|------|-----------------|
|  | 381 Mansfield Ave Pittsburgh, PA 15220 | DOCSIS® Firmware Upgrade Notice Broadcom 4.0.0 (3348 & 3349) | | REV A |
| | | SCALE | NONE | SHEET 5 of 7 |

The following list details version 4.0 rebranding changes resulting from the company name change from Tollgrade to Cheetah.

1. All web page logos changed from Tollgrade to Cheetah.
2. All web page copyrights changed from Tollgrade to Cheetah.
3. Help links on web pages changed to point to CheetahTechnologies web page.
4. Code changed to accept either Tollgrade or Cheetah organization name in incoming CVC files.
5. Vendor Id constant changed to 00:26:97
6. The OUI 00:26:97 will show up in option 43 of our DHCP requests on all units running version 4.0 and later firmware.
7. Changed default telnet & ssh login from Tollgrade edarglloT to cheetah cheetah. At boot time if old defaults are still in use they are converted to new defaults.
8. Changed default http user login from Tollgrade Tollgrade to cheetah cheetah. At boot time if old defaults are still in use they are converted to new defaults.
9. Changed default admin http login from edarglloT aDm1n\$TR8r to admin cheetah. At boot time if old defaults are still in use they are converted to new defaults.
10. Changed version banner at console to use Cheetah instead of Tollgrade.
11. Changed Tollgrade to Cheetah on the Transponder configuration web page.
12. Changed hms web page help button to point to cheetahtech web site.
13. For ECOMM (3349) based transponders, changed default values for sysName and sysContact for 2nd IP address from Tollgrade Communications, Inc. and Tollgrade Communications to Cheetah Technologies, L.P. and Cheetah Technologies respectively. At boot time if old defaults are still in use they are converted to new defaults.

The contents of the following CM OID's were modified as part of the rebranding effort.

| <i>OID</i> | <i>Name</i> | <i>Old Default Value</i> | <i>New Default Value</i> |
|----------------------------------|-------------------|--------------------------------------|------------------------------------|
| 1.3.6.1.4.1.5591.1.3.1.2.0 | commonVendor | TOLLGRADE | CHEETAH TECHNOLOGIES |
| 1.3.6.1.4.1.4413.2.2.2.1.1.1.2.0 | telnetUserName | Tollgrade | cheetah |
| 1.3.6.1.4.1.4413.2.2.2.1.1.1.3.0 | telnetPassword | edarglloT | cheetah |
| 1.3.6.1.4.1.4413.2.2.2.1.1.3.1.0 | httpAdminId | edarglloT | admin |
| 1.3.6.1.4.1.4413.2.2.2.1.1.3.2.0 | httpAdminPassword | aDm1n\$TR8r | cheetah |
| 1.3.6.1.4.1.4413.2.2.2.1.1.3.3.0 | httpUsedId | Tollgrade | cheetah |
| 1.3.6.1.4.1.4413.2.2.2.1.1.3.4.0 | httpUserPassword | Tollgrade | cheetah |
| 1.3.6.1.2.1.1.1.0 | sysDesc | VENDOR: Tollgrade Communications Inc | VENDOR: Cheetah Technologies, L.P. |

| | | | |
|---|---|------|-----------------|
|  381 Mansfield Ave Pittsburgh, PA 15220 | DOCSIS® Firmware Upgrade Notice Broadcom 4.0.0 (3348 & 3349) | | REV A |
| | SCALE | NONE | SHEET 6 of 7 |

| | | | |
|--|------------------------|--------------------------------|----------------------------|
| 1.3.6.1.2.1.10.127.6.1.4.3.0 | docsBpi2CodeMfgOrgName | Tollgrade Communications, Inc. | CHEETAH TECHNOLOGIES, L.P. |
| 1.3.6.1.4.1.4413.2.2.2.1.9.1.1.5.1.2.6 | bfcAppName | Tollgrade VoIP Extension | Cheetah VoIP Extension |

The contents of the following MTA OID's were modified as part of the rebranding effort.

| <i>OID</i> | <i>Name</i> | <i>Change</i> |
|-------------------|-------------|---|
| 1.3.6.1.2.1.1.1.0 | sysDesc | Changed Tollgrade to Cheetah |
| 1.3.6.1.2.1.1.4.0 | sysContact | Default changed from Tollgrade to Cheetah |
| 1.3.6.1.2.1.1.5.0 | sysName | Default changed from www.tollgrade.com to www.cheetahtech.com |
| 1.3.6.1.2.1.1.6.0 | sysLocation | Default changed from Cheswick, PA USA to Pittsburgh, PA USA |

The contents of the following DUAL IP stack OID's were modified as part of the rebranding effort.

| <i>OID</i> | <i>Name</i> | <i>Change</i> |
|-------------------|-------------|---|
| 1.3.6.1.2.1.1.4.0 | sysContact | Changed from Tollgrade Communications, Inc. to Cheetah Technologies, L.P. |
| 1.3.6.1.2.1.1.5.0 | sysName | Changed from Tollgrade Communications to Cheetah Technologies |

TECHNICAL SUPPORT

For questions, contact the **Cheetah Technologies Technical Support Center** at:


1-866-944-1482

cheetahsupport@cheetahtech.com

www.cheetahtech.com

© 2009 Cheetah Technologies, L.P. All Rights Reserved.

All trademarks and registered trademarks are the property of their respective owners

| | | | | |
|---|---|---|------|-----------------|
|  | 381 Mansfield Ave Pittsburgh, PA 15220 | DOCSIS® Firmware Upgrade Notice Broadcom 4.0.0 (3348 & 3349) | | REV A |
| | | SCALE | NONE | SHEET 7 of 7 |