
RT-PoE5 Firmware Update

Procedure for updating the RT-PoE5 Firmware

Reach Technology, Inc.

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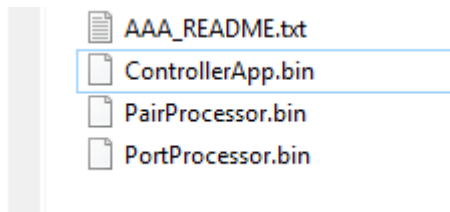
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Overview

The RT-PoE5 firmware can be upgraded using the serial console interface and the YMODEM file transfer protocol. We will be using Tera Term Version 4.80 as our terminal emulator used to communicate and transfer firmware files to the RT-PoE5. Versions of TeraTerm more recent than 4.8, including 4.99 and 4.1 may encounter problems during YMODEM file transfer. If you need a different version of TeraTerm it can be downloaded from the TeraTerm homepage at: <https://ttssh2.osdn.jp/index.html.en>.

Before beginning the update process Verify that you have the following files and that they are the correct version: ControllerApp.bin, PairProcessor.bin, and PortProcessor.bin:



There are also TeraTerm scripts provided in the Appendix of this document to automate this process.

Document Conventions

<CR> Carriage Return character, ASCII 0x0D

Input to, or output from RT-PoE5

Procedure

1. Connect your host to the RJ45/RS232 console interface as described in the RT-PoE5 manual. After powering on or hitting enter you should see the following prompt:

```
RT-PoE5>
```

2. At the prompt type the following command below.

Command:

```
RT-PoE5>*program<CR>
```

Response:

```
Resetting Ports.
```

NOTE: The bootloader baud rate is set at 115200 8-N-1. You will need to make sure your baud rate is set correctly after entering the *program command.

3. The bootloader menu will be displayed:

```
Starting application...
Reach PoE Tester Model RT-PoE5/24
PN 53-0005-11 Rev A 0/1, SW 1.01, Oct 18 2018
Copyright (C) 2018 by Reach Technology, a Novanta Company
RT-PoE5>*program
Resetting Ports.

=====
=                                     =
=   Reach Technology RT-PoE5 Controller   =
=                                     =
=   Boot Loader   <Version 0.5>          =
=                                     =
=====

===== Main Menu =====
Program Controller Card ----- 1
Program Line Card Ports ----- 2
Program Line Card Pairs ----- 3
Execute Line Card Program ----- 4
Start PoE5 ----- 6
Hit 'x' or 'X' within 1 second of power on for this menu.
=====
```

Updating Controller Card Firmware

4. To update the Controller Card firmware, select "Program Controller Card" from the bootloader menu

Command:

1

Response:

"Waiting for the Control Card file to be sent ... (press 'a' to abort)"

```
Starting application...
Reach PoE Tester Model RT-PoE5/24
PN 53-0005-11 Rev A 0/1, SW 1.01, Oct 18 2018
Copyright (C) 2018 by Reach Technology, a Novanta Company
RT-PoE5>*program
Resetting Ports.

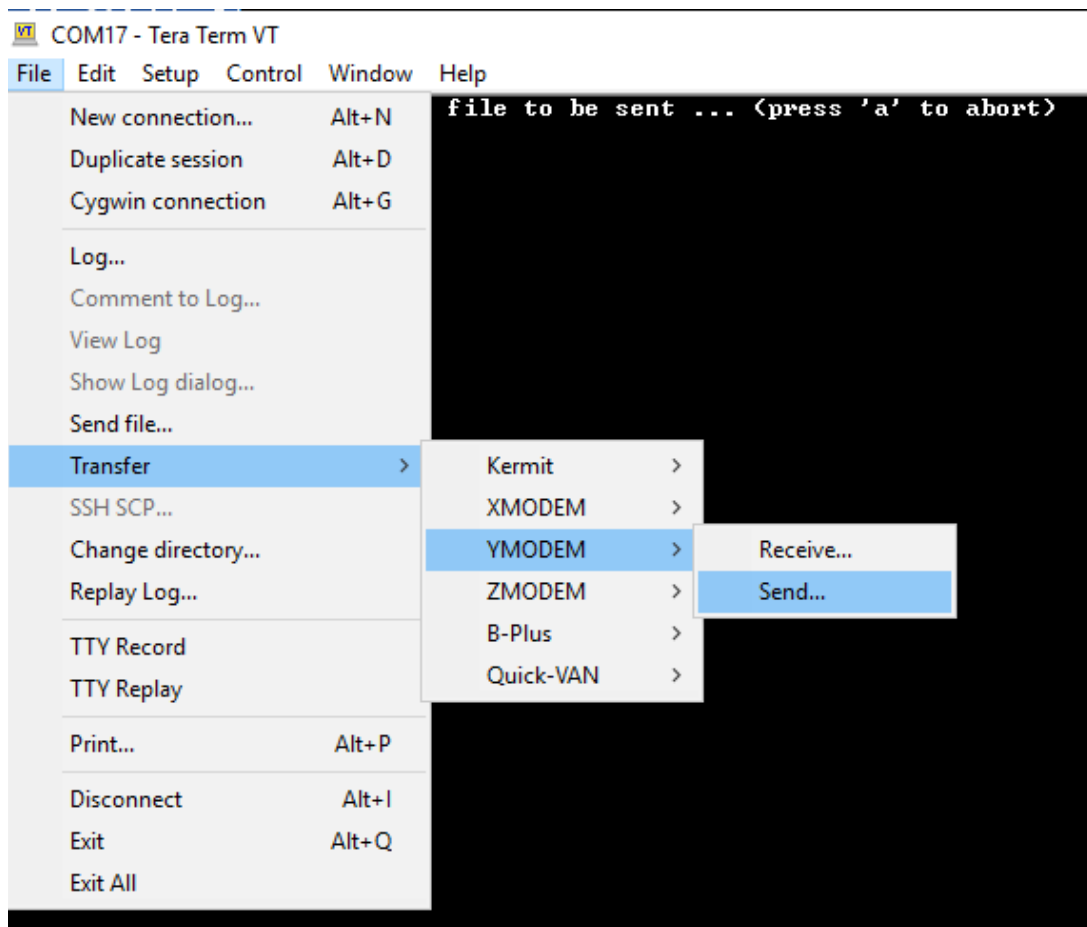
=====
=                                     =
=   Reach Technology RT-PoE5 Controller   =
=                                     =
=   Boot Loader   (Version 0.5)         =
=                                     =
=====

===== Main Menu =====
Program Controller Card ----- 1
Program Line Card Ports ----- 2
Program Line Card Pairs ----- 3
Execute Line Card Program ----- 4
Start PoE5 ----- 6
Hit 'x' or 'X' within 1 second of power on for this menu.
=====

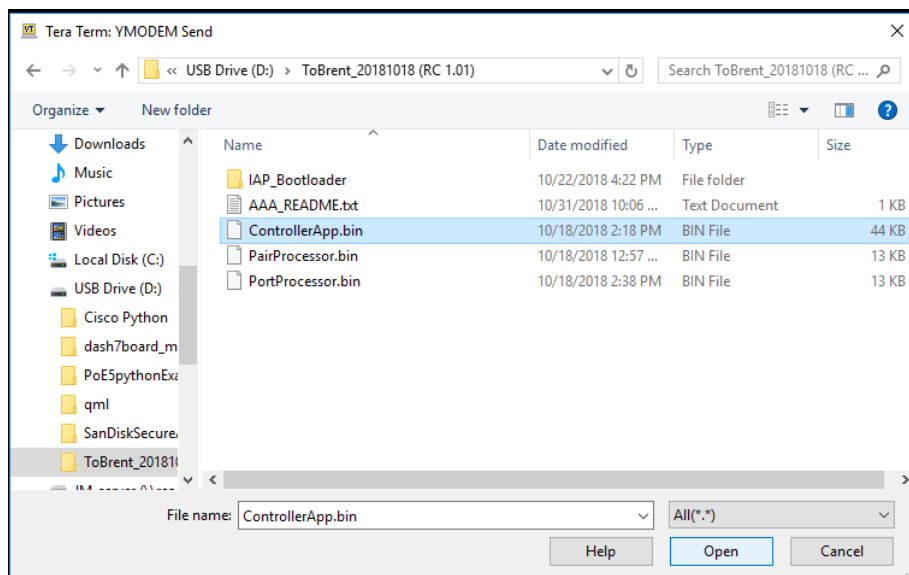
Waiting for the Control Card file to be sent ... (press 'a' to abort)
C
```

The RT-PoE5 will intermittently print "C" characters while waiting for the file transfer to begin.

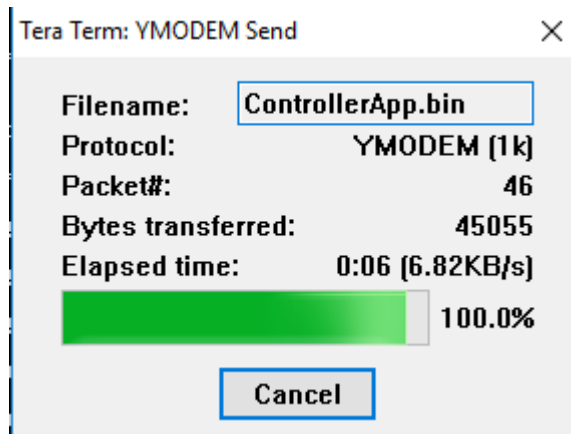
5. Transfer the Control Card firmware using the YMODEM protocol by selecting Transfer→YMODEM→Send from the TeraTerm “File” menu:



Browse to the Control Card firmware “ControllerApp.bin”, select the file to send, and press OK.



TeraTerm will display a progress dialog box which will disappear when the transfer is complete:



NOTE: If there is not a slight delay after the progress reaches 100% the transfer may have failed and you will have to start over at step 5. After the transfer is complete, verify that you have received an acknowledgement of programming success:

Programming Completed Successfully!

Name: ControllerApp.bin
Size: 45055 Bytes

```
Programming Completed Successfully!
-----
Name: ControllerApp.bin
Size: 45055 Bytes
-----

===== Main Menu =====

Program Controller Card ----- 1
Program Line Card Ports ----- 2
Program Line Card Pairs ----- 3
Execute Line Card Program ----- 4
Start PoE5 ----- 6

Hit 'x' or 'X' within 1 second of power on for this menu.
=====
```

If transfer is not successful, repeat steps 4 and 5

Updating Line Card Port Processor Firmware

- To update the port processor firmware on the RT-PoE5 line cards select "Program Line Card Ports" from the bootloader menu.

Command:

2

Response:

Waiting for the Line Card Port file to be sent ... (press 'a' to abort)

Follow the instructions in step 5 to transfer the line card port processor firmware "PortProcessor.bin". After the transfer completes, the control card will program all of the port processors on all line cards installed in the system, one per physical RJ45 port:

```
Download Completed Successfully!
-----
Name: PortProcessor.bin
Size: 12898          Bytes
-----
Wrote and verified Ch 1 LC 1
Starting execution at address 0x08000000... done
Wrote and verified Ch 1 LC 2
Starting execution at address 0x08000000... done
Wrote and verified Ch 1 LC 3
Starting execution at address 0x08000000... done
Wrote and verified Ch 2 LC 1
Starting execution at address 0x08000000... done
```

Response after successful file transfer:

```
Download Completed Successfully!
-----
Name: PortProcessor.bin
Size: 12898          Bytes
-----
Wrote and verified Ch 1 LC 1

Starting execution at address 0x08000000... done.

Wrote and verified Ch 1 LC 2

Starting execution at address 0x08000000... done.

Wrote and verified Ch 1 LC 3

Starting execution at address 0x08000000... done.
```


Wrote and verified Ch 2 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 2 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 2 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 3 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 3 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 3 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 4 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 4 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 4 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 5 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 5 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 5 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 6 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 6 LC 2
Starting execution at address 0x08000000... done.

Wrote and verified Ch 6 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 7 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 7 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 7 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 8 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 8 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 8 LC 3
Starting execution at address 0x08000000... done.

Verify that all ports have programmed successfully and that you have been returned to the bootloader menu.

Note: While 8 port variants of RT-PoE5 will produce a slightly different output during programming, it will follow the same general pattern.

Programming Line Card Pair Processor Firmware

7. To update the pair processor firmware on the RT-PoE5 line cards select “Program Line Card Pairs” from the bootloader menu.

Command:

3

Response:

Waiting for the Line Card Pair file to be sent ... (press 'a' to abort)

Follow the instructions in step 5 to transfer the line card pair processor firmware “PairProcessor.bin”. After transfer completes, all of the pair processors in the system will program, there are two pair processors per RJ45 port in the system, but only one programming step is displayed:

```
Download Completed Successfully!
-----
Name: PairProcessor.bin
Size: 12544          Bytes
-----
Wrote and verified Ch 1 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 1 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 1 LC 3
Starting execution at address 0x08000000... done.
```

Response after successful file transfer:

```
Download Completed Successfully!
-----
Name: PairProcessor.bin
Size: 12544          Bytes
-----
Wrote and verified Ch 1 LC 1

Starting execution at address 0x08000000... done.

Wrote and verified Ch 1 LC 2

Starting execution at address 0x08000000... done.

Wrote and verified Ch 1 LC 3

Starting execution at address 0x08000000... done.
```

Wrote and verified Ch 2 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 2 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 2 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 3 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 3 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 3 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 4 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 4 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 4 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 5 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 5 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 5 LC 3
Starting execution at address 0x08000000... done.
Wrote and verified Ch 6 LC 1
Starting execution at address 0x08000000... done.
Wrote and verified Ch 6 LC 2
Starting execution at address 0x08000000... done.
Wrote and verified Ch 6 LC 3

Starting execution at address 0x08000000... done.

Wrote and verified Ch 7 LC 1

Starting execution at address 0x08000000... done.

Wrote and verified Ch 7 LC 2

Starting execution at address 0x08000000... done.

Wrote and verified Ch 7 LC 3

Starting execution at address 0x08000000... done.

Wrote and verified Ch 8 LC 1

Starting execution at address 0x08000000... done.

Wrote and verified Ch 8 LC 2

Starting execution at address 0x08000000... done.

Wrote and verified Ch 8 LC 3

Starting execution at address 0x08000000... done

Verify that all pairs have programmed successfully and that you have been returned to the bootloader menu.

Note: While 8 port variants of RT-PoE5 will produce a slightly different output during programming, it will follow the same general pattern.

Once all files have been transferred successfully, start the main application.

Command:

6

Response:

Starting application...
Reach PoE Tester Model RT-PoE5/24
PN 53-0005-11 Rev A 0/1, SW 1.01, Oct 18 2018
Copyright (C) 2018 by Reach Technology, a Novanta Company
RT-PoE5>

Verify that the software version matches the version provided in the AAA_README.txt file provided with your firmware update.

Appendix

The following script will automate updating the firmware of the RT-PoE5. To use it copy the following text and paste it into an empty text file. Alter the **lines highlighted in yellow** below to reflect the location of your firmware update files and save the file as "programBothLineCardControlCard.ttl ". To use the script boot the RT-PoE5 up and make sure you are at the RT-PoE5> prompt. Use the Control→Macro menu in in TeraTerm to open the macro then press <CR> After each YMODEM transfer a dialog box will appear asking if each step programmed correctly, do not click "yes" or "no" until the programming described in steps 5,6, and 7 have completed or failed.

```
:: Tera Term Macro
::
::
=====
:: file  programBothLineCardControlCard.ttl
::
::
:: desc  Programs the PoE5 Line Card and Control card. Start the script then hit enter to
::        start programming.
::
::
=====
:: HISTORY
::
::
::    2013-12-16          Brent Larson
::    2018-11-18          Eric Garner
::
::
=====

::
::
=====
:: DEFINITIONS
::
::
=====

:: Firmware file locations.
srcfileCntlCrd = 'D:\ControllerApp.bin'
srcfileLineCrdPort = 'D:\PortProcessor.bin'
srcfileLineCrdPair = 'D:\PairProcessor.bin'

::
::
:: Main Menu
::
::
PromptMainMenu          =
'=====

::
::
=====
:: EXECUTION
::
::
=====
```

```

::
;;
;; General configuration
;;
sendln '*program'
wait PromptMainMenu
goto SendCtrlCard
goto SendPortProc
goto SendPairProc
sendln '6'

end

:SendCtrlCard
sendln '1'
ymodemsend srcfileCntrlCrd
if result=1 then
    messagebox 'File transfer success ' 'Send'
else
    messagebox 'File transfer failure ' 'Send'
endif
yesno box 'Did control card program program correctly?' 'Tera Term'
if result=0 goto SendCtrlCard

:SendPortProc
sendln '2'
ymodemsend srcfileLineCrdPort
if result=1 then
    messagebox 'File transfer success ' 'Send'
else
    messagebox 'File transfer failure ' 'Send'
endif

yesno box 'Did port processors program correctly?' 'Tera Term'
if result=0 goto SendPortProc

:SendPairProc
sendln '3'
ymodemsend srcfileLineCrdPair
if result=1 then
    messagebox 'File transfer success ' 'Send'
else
    messagebox 'File transfer failure ' 'Send'
endif

yesno box 'Did pair processors program correctly?' 'Tera Term'
if result=0 goto SendPairProc
sendln '6'

```