Cortina Systems
CS600x/CS604x
Software Device Driver and API
Release 5.13
Release Notes
April 14, 2014

This archive contains the device driver and API for the Cortina Systems CS600x and CS604x Optical Transport Processor and FEC Device.

What is this release?
This release contains support for two new configurations: "40 GE Mapping into Four ODU2e/ODU1e using 40 GE Parallel Native Format" and "10G CBR (10.3125 * 836/832) BMP into ODUflex (GMP_HO) OTU3e4."

Fixed Issues
The following issues have been addressed in this release:

Bug	Issue
43359	Configuration 40 GE Mapping into Four ODU2e/ODU1e using 40 GE Parallel Native Format (Datasheet Rev 1.1 Figure 144) Adds support for this new configuration.
43573	Configuration 10G CBR (10.3125 * 836/832) BMP into ODUflex (GMP_HO) OTU3e4 Adds support for this new configuration.
42896	Remove invalid debug message from API "ten_dev_register" "T40" string was being displayed instead of "T41" even with a T41 device. This message is not needed here since the chip-id was not read yet, and was removed.
43520	ten_n10g_get_otu_framer_status does not print debug string correctly for the case "TEN_NX0G_OTNR_OFSTAT_ALL" The return value of the framer status was correct, but the debug string was not being displayed correctly. The debug message is now being displayed correctly.
42300	Fix klocwork warnings Klocwork was upgraded to Release 10.0 Build 10.0.0.5867 and some new warnings were fixed.

Open Issues

Currently, there are no planned fixes or open issues in Release 5.13.

What is included?

- There is an API User Guide in the “doc” directory that identifies all of the API functions and their parameters
- There is a Software Driver Manual in the “doc” directory that describes how to port the SW to your system. This document has not been updated significantly since Release 5.1. For additional information on using the new CS604x features please contact your Applications Engineer to obtain example configuration scripts.
- The register header file, which identifies all of the device’s registers and bit-fields, is in the “T41” directory; the register documentation will be available separately from CCS
- Source code is in the “T41/modules” directory
- Perl scripts for various configurations and board bring-up are in the “configs” directory
- Code that is common to all Cortina Systems SW drivers is in the “platform” directory; this code may need modifications for your system

What is the format of the release distribution?
This is a Unix/Linux gzipped tar file (.tar.gz). It can be extracted on a Linux system with the following command, which will create a directory called “CS6041_Release_5.13” with all of the files in it.

```
tar xzf CS6041_Release_5.13.tar.gz
```

On a Windows machine, WinZip or 7-Zip can extract the files from the archive.

What compiler options should be used?
The makefiles take a least-common-denominator approach to compiling for the different compiler versions noted above. All advanced compiler features beyond ANSI C89 have been disabled so that the code will compile for any of these compilers without changes to the makefiles. The only exception is cross-compiling on a machine with different endianness than the target machine. In that case, the endianness test in Makefile.common should be overridden and the ENDIAN variable made equal to CS_BIG_ENDIAN or CS_LITTLE_ENDIAN based on the architecture of the target processor. Refer to Section 5 at the bottom of Makefile.common.

For other compiler options, refer to Sections 2, 3, 4, and 6 at the bottom of Makefile.common. Also refer to the definition of the make variable CFLAGS in Makefile.common.

How complete is the source code?
The driver is very complete for most traffic types and is now in sustaining mode. Future updates will focus primarily on bug fixes.

What can you actually do with this?
You can begin integrating the code into your system. We recommend that you integrate the code into your system as-is. Making extensive changes will mean more pain when you have to merge in the changes in future releases.

What is this file *doc/CS604x_block_addresses.txt*?
This file documents the base address of all of the slices of all of the blocks in the CS6041.

Are there any new API functions?
The following API functions are new in this release:

ten_hl_n10g_get_ncols

ten_hl_n10g_get_npar
ten_pp40g_ctrl_tx_subblks_t41
ten_pp40g_ctrl_rx_subblks_t41
ten_pp40g_set_pcs_rx_skew_thresh_t41
ten_n10g_otnt_set_mst_fpsync
ten_n40g_gbl4x_synccfg

Are there any API functions that have changed since Release 5.13?
There are no changed API functions in this release.

Have any API functions been deleted?
There are no deleted API functions in this release.

What are the new high-level functions?
The following high-level functions are new in this release:

ten_hl_config_otu2v_40gep_t41

Are there any examples of how to call the High-Level functions to provision the CS600x/CS604x?
There are Perl scripts in the "configs" directory that call the High-Level API functions to provision the T40 into different configurations (new T41-specific mappings are not currently supported by the script environment). The main scripts end in a ".pl" suffix, as they run from Cortina's API Shell environment which will be available with evaluation platforms. These scripts will not run in a stand-alone Perl environment, they must be run under 'apish' that will be available with evaluation boards. Refer to Section 4.0 of the CS604x *Software Driver User Guide* for more information on the Perl scripts and environment.

Have any device registers changed in this release?
There were no register changes in this release.

Is the interrupt hierarchy documentation updated?
There were no changes to the interrupt documentation.

How can the code be compiled for the CS600x versus CS604x?
The driver doesn't need to be built for a specific device, it will determine which device(s) are in the system at run-time by reading the ChipID(s).

Is there any test code available?
Yes, there is an executable which links with the tenabo.a API library called "t40_testbench."

The application calls the correct initialization sequence for the driver and then calls some sample APIs and example configurations. There are also APIs called to display all the device statistics. All register read/write activity is displayed for demonstration and debugging purposes. It is a memory model only, with no chip simulation ability.

To build the driver, first edit Makefile.common and uncomment the line in Section 7 at the bottom of the file. Then build the archive and the example code with the following. You may need to change the "m" script to call the proper compiler as it currently defaults to gcc4.

```
make                        makefile to build tenabo.a library
./m                         script to build executable t40_testbench
./t40_testbench             run the test application, output will be
                            generated on standard out
```

What top-config Perl scripts are available?
Example Perl scripts for different configurations will be available from Applications Engineering within one week following the release.

The “configs/r5” directory contains the Perl scripting environment and the “full.pl” script that is used on the Evaluation Board platform to provision the device.

Has this release been through Klocwork*?
All of the Klocwork issues have been addressed in this release. The version used is: 10.0 Build 10.0.0.5867.

Who do I make feature requests or bug reports to?
Cortina Systems takes great pride in our level of customer support and satisfaction. We are dedicated to making our customers successful, and will do anything in our power to get our customers fastest to market.

We encourage you to enroll in our online support system. As a member, you will have access to documentation, software drivers, a unique "solutions" database, and our excellent support staff. If you wish to enroll, simply contact your sales representative and let them know you'd like to sign up for this service and we'll get you started right away!