

Updating ULE (CMBS) Hub Firmware

Document Objective

This document describes a method for updating a UART or USB CMBS FW image using the `cmbs_tcx.exe` running on a Windows PC. This method of FW update is useful for an on-site manual update of SW. The `cmbs_tcx` host SW package includes reference code for invoking this upgrade remotely via `cmbs_tcx_host` or via the HAN Client-Server API (see 4.3.27 & 28 in the [cmbs-han-server-protocol document](#)). This method presumes that a CMBS FW is already resident on the DHAN-M or Dongle to be upgraded.

Step by Step

- Download the [cmbs_tcx.exe](#)
- Download the `DCX81_DEV_UART.bin` (or `DCX81_DEV_USB`) from the release folder to the folder where the “`cmbs_tcx.exe`” has been placed
- Run “`cmbs_tcx.exe -com <portNum>`”, e.g. `cmbs_tcx.exe -com 6`
 - Note that the current Target image in this case is *4.11 Build 5*

```
| Enter COM port number: 6
COMPORT: 6
TDM configuration is:0
Open Port: \\.\COM6 Baud Rate 115200
\\.\COM6 opened

14:19:21.315 Host ->> CMBS  CMBS_CMD_HELLO [0x1, 14 bytes, #0]: 01 03 03 ff ff 00

14:19:21.329 Host <<- CMBS  CMBS_CMD_HELLO_RPLY [0x2, 13 bytes, #0]: 11 04 05 00 00
TARGET API version: 04.11
TARGET BUILD      : 00.05
TARGET mode       : 0
```

- Press ‘f’ for firmware upgrade you get window below

```
CMBS Host
# t => RTP Test Menu
# T => TDM Test Menu
# g => Checksum Error Test Menu
# h => HAN Test Menu
# U => Audio Test Menu
#
# -----
# w => Incoming wideband CLI: 1234, CNAME: Call WB
#       Active Call >>> Codec change to wideband
# n => Incoming narrow band CLI: 6789, CNAME: Call NB
#       Active Call >>> Codec change to narrow band
# a => Incoming wideband aLaw CLI: 3456, CNAME: Call WB aLaw
#       Active Call >>> Codec change to wideband aLaw
# o => Incoming NB Linear PCM with G.711 A-law used OTA
#       Active Call >>> Codec change to NB with G.711 A-law OTA
# r => Release call
#
# -----
# p => PNCAP Menu
#
# -----
# q => Quit
#
#####
Choose:f-----
1 => Start FW update
2 => Start stress tests
3 => Start FW update (application-booter mismatch, [not for DCX81])
4 => Start Booter stress tests
-----
q => Return to Interface Menu
```

- Select “1 Start FW update”, you get the window below

```

CMBS Host
#      g => Checksum Error Test Menu
#      h => HAN Test Menu
#      U => Audio Test Menu
#
#-----
#      w => Incoming wideband CLI: 1234, CNAME: Call WB
#      Active Call >>> Codec change to wideband
#      n => Incoming narrow band CLI: 6789, CNAME: Call NB
#      Active Call >>> Codec change to narrow band
#      a => Incoming wideband aLaw CLI: 3456, CNAME: Call WB aLaw
#      Active Call >>> Codec change to wideband aLaw
#      o => Incoming NB Linear PCM with G.711 A-law used OTA
#      Active Call >>> Codec change to NB with G.711 A-law OTA
#      r => Release call
#-----
#      p => PNCAP Menu
#-----
#      q => Quit
#
#####
Choose:f-----
1 => Start FW update
2 => Start stress tests
3 => Start FW update (application-booter mismatch, [not for DCX81])
4 => Start Booter stress tests
-----
q => Return to Interface Menu
1
Enter firmware binary file name:

```

- Enter the binary file name *DCX81_DEV_UART.bin* (or *DCX81_DEV_USB.bin* if updating a USB image), then enter 4 to Select Packet Size, then answer “y” to insure preservation of EEPROM settings

```

CMBS Host
Enter firmware binary file name:
DCX81_MOD_UART.bin
14:24:42.781 Host ->> CMBS CMBS_EV_DSR_FW_VERSION_GET [0x17, 15 bytes, #
  <CMBS_IE_FW_VERSION(20)>:
    Booter version
    VER_0000
14:24:42.799 Host <<- CMBS CMBS_EV_DSR_FW_VERSION_GET_RES [0x18, 20 byte
  <CMBS_IE_FW_VERSION(20)>:
    Booter version
    VER_0012
  <CMBS_IE_RESPONSE(22)>:
    Response: OK
** Booter Version: 12
Enter packet size, possible options listed below :
press 0 for - 32
press 1 for - 64
press 2 for - 128
press 3 for - 256
press 4 for - 512
press 5 for - 1024
press 6 for - 2048

```

- The update process should begin running. Will take a few minutes. Upon completion, the successful result will be displayed as below.

Note that the new version is 4.11.1 Build 1!!

```
14:33:06.035 Host <<- CMBS CMBS_EV_DSR_TARGET_UP [0x7d, 8 bytes, #0]:
CPhysicalPort::Finish
CPhysicalPort::close
Open Port: \\.\COM6 Baud Rate 115200
\\.\COM6 opened

14:33:06.582 Host ->> CMBS CMBS_CMD_HELLO [0x1, 14 bytes, #0]: 01 03 03 ff ff 00

14:33:06.595 Host <<- CMBS CMBS_CMD_HELLO_RPLY [0x2, 13 bytes, #0]: 11 41 01 00 00
TARGET API version: 4.11.1
TARGET BUILD      : 00.01
TARGET mode       : 0

14:33:06.597 Host ->> CMBS CMBS_CMD_CAPABILITIES [0xa, 13 bytes, #0]: 04 00 00 00 01

14:33:06.611 Host <<- CMBS CMBS_CMD_CAPABILITIES_RPLY [0xb, 13 bytes, #0]: 04 00 00 00 01

14:33:06.632 Host ->> CMBS CMBS_EV_DSR_SYS_START [0x19, 8 bytes, #0]:

14:33:07.329 Host <<- CMBS CMBS_EV_DSR_SYS_START_RES [0x1a, 13 bytes, #0]: 16 00 01 00 00
<CMBS_IE_RESPONSE(22)>:
Response: OK

EEPROM data set successfully!...
```

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