Support files for the Examining Hiachi Camera Protocol

1 May 2009

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1 Various files/programs/scripts for examining Hitachi Protocol

1. FLEX filters

   1.1 BLDCE is used to put a blank line before each DCE line.

   1.2 BLDTE is used to put a blank line before each DTE line.

   1.3 BUILDD is used to generate D Protocol commands for the GLASSKEYBOARD given only `CMND1`, `CMND2`, `DATA1` and `DATA2`. It always generates commands for camera 1 and adds a sync byte and calculates a checksum. It is assumed that each input byte is in hexidecimal and is two ASCII characters long. There must be one blank between each byte. All lines starting with a pound sign (`#`) will be copied to the output with a blank inserted on the line. Additionally this program's name, a configuration control line and date/time of processing are added in with a blank pound line.

   1.4 DC_S654 is used to decode Hitachi camera commands and replies. It is part of Hitachi camera protocol processing and is normally run in the JJAQ.BAT script file.

   1.5 DLTIMEQX is used to process files generated by MSX to get the delta between items in the total seconds collumn. The data may have been processed by FIXD.L first if desired. This is the version of MS that is intended for use with long files. The input file must not have been processed with MS first.

   1.6 DTOP is used to translate D Protocol commands into P Protocol commands. It only works on the "extended" commands. It requires that the D commands be addressed to D Protocol camera 1. It then changes that address to P Protocol camera 1. It is assumed that the input format comes from the GLASSKEYBOARD "direct command" mode where each command consists of hexadecimal bytes. All commands that are not understood, are copied directly through to the output.

   "`:print(`" statements are deleted, but "`:print␣(`" statements are not deleted. This is because DTOP is smart enough to generate `:print` commands for each command that is sent automatically.

   No attempt is made to see if the resulting P Protocol command is valid, or even makes any sense. I.e. query commands generate multibyte replies and P Protocol only allows single byte responses, etc.

[1] `$Header: d:/Binder7/CamCheck/RCS/Support.tex,v 1.2 2009-05-01 09:38:24-07 Hamilton Exp Hamilton $`
[2] `$Header: d:/Binder7/CamCheck/RCS/PgmDesc.inc,v 1.2 2009-05-01 09:44:31-07 Hamilton Exp Hamilton $`

1.7 GresTime is used to get the response time to commands from files that have delta times in them.

1.8 HitDecod is used to decode Hitachi camera commands and replies. It is part of Hitachi camera protocol processing and is normally run in the JJAQ.bat script file.

1.9 HTL is used to read a Hitachi camara protocol captures and display the data in time relationships.

1.10 HitDecod is used to decode Hitachi camera commands and replies. It is part of Hitachi camera protocol processing and is normally run in the JJAQ.bat script file.

1.11 HitachiA is used to break down raw MakeSecs processed Hitachi camera messages into something more readable. It has an ASCII output.

1.12 HitachiC is used to partially decode Hitachi camera commands. It is essential that each partially decoded line end with a blank. The trailing blank is used by HitDecod

1.13 HitachiH is used to break down raw MakeSecs processed Hitachi camera messages into something more readable. It has a hexadecimal output.

1.14 Narrow is used to reduce the length of the line of data capture dumps.

1.15 TimeBetn is used to get the response time to commands from files that have delta times in them.

1.16 TimeTag is used to insert the current time in a file. It is preceeded with a # mark.

2. C Files

2.1 Table5F is used to generate a set of commands to test `OpCode 0x5F`. It generates many commands in small argument steps to thoroughly exercise the OpCode. When the table has been generated, the result must be run through BuildD to get a script of commands for the GlassKeyboard to execute.

3. Misc data files.

3.1 Header This is a "header" file for inclusion in a generated command file for the GlassKeyboard. It is anticipated that the resulting file will be processed with Build, or similar, before letting the GlassKeyboard use it.

```
 1  $Header: d:/Binder7/CamCheck/RCS/Header,v 1.2 2009-03-03 11:20:49-08 Hamilton Exp Hamilton $
 2
 3  :SET_DELTA(0)
 4  :set_baud(2400)
 5
 6  :print ("Stop")
 7  00 00 00 00
 8  :delay(1000)
 9
10  :print ("Query with sub opcode of 0x00")
11  00 45 00 00
12  :delay(1000)
13
14  :print ("Query with sub opcode of 0x01")
15  01 45 00 00
16  :delay(1000)
17
18  :print ("Query with sub opcode of 0x02")
19  02 45 00 00
20  :delay(1000)
21
22  :print ("Query with sub opcode of 0x03")
23  03 45 00 00
24  :delay(1000)
25
26  :print ("Query with sub opcode of 0x04")
27  04 45 00 00
```

```
:delay(1000)

:print ("Query with sub opcode of 0x05")
05 45 00 00
:delay(1000)

:print ("Query with sub opcode of 0x06")
06 45 00 00
:delay(1000)

:print ("Query version ID")
00 73 00 00
:delay(1000)

:print ("Query Bulid ID")
02 73 00 00
:delay(1000)

:print ("08OCT01 Query Mini Spectra Version ID")
00 6F 00 00
:delay(1000)

:print("09MAR03 Go to Cal0")
00 07 00 22
:delay(4000)

:print("09MAR03 Set Zero Position at Cal0")
00 49 00 00
:delay(1000)

:print("09MAR03 Zoom wide")
00 00 40 00
:delay(10000)


```

4. Script files

4.1 GetData.bat Gets various data files from RCS.

4.2 JJHdx.bat Decode large Hitachi files. (Current version.)

```
 @echo off
echo For use with large files
rem $Header: d:/Binder7/CamCheck/RCS/JJHdx.bat,v 1.3 2009-05-01 08:56:48-07 Hamilton Exp Hamilton $
msxq        original\%1.txt %1.out
getdceq -x  %1.out %1.dce
hitachia    %1.dce %1.c
getdteq -x  %1.out %1.dte
hitachia    %1.dte %1.t
copy        %1.t+%1.c %1.all
qsort       %1.all %1.srt /31:99 /1:30
dltimeqx -x %1.srt %1.dl
bldceq -x   %1.dl  %1.ast
hitachic    %1.ast %1.cst
//hitdecod    %1.cst %1.dcd
hd -t654    %1.cst %1.dcd
l           %1.dcd
if exist %1.all del %1.all
if exist %1.ast del %1.ast
if exist %1.c   del %1.c
if exist %1.cst del %1.cst
if exist %1.dce del %1.dce
if exist %1.dl  del %1.dl
if exist %1.dte del %1.dte
if exist %1.out del %1.out
if exist %1.rev del %1.rev
if exist %1.srt del %1.srt
if exist %1.t   del %1.t
```

4.3 JJJKill.bat Delete old temp files when needed. Such as after a debug session.

4.4 JJRx.bat Decode large reversed Hitachi files. (Old version may be obsolete.)

4.5 JJlist.bat For debugging.

4.6 JJx.bat Used for Hitachi protocol large files. (Old version, may be obsolete.)

4.7 JustPlot.bat Process a capture file to generate a plot file of reply times.
Delta plot times are in `%1.PDC`
Protocol commands and responses are in `%1.DC`

```
 1  @echo off
 2  echo Process a capture file in original to generate a plot file of reply times
 3  rem $Header: d:/Binder7/CamCheck/RCS/JustPlot.bat,v 1.5 2009-05-01 08:56:48-07 Hamilton Exp Hamilton $
 4  msxq -x     original\%1.txt %1.out
 5  getdceq -x  %1.out %1.dce
 6  hitachia    %1.dce %1.c
 7  dltimeqx -x %1.c   %1.dc
 8  timebetn -x %1.dc  %1.pdc
 9  call plotter  %1
10  echo Delta plot times are in %1.pdc
11  echo Protocol commands and responses are in %1.dc
```

4.8 MakeNar.bat Run narrow on a full width data `.DCD` file

```
1  @echo off
2  rem $Header: d:/Binder7/CamCheck/RCS/MakeNar.bat,v 1.1 2009-03-05 09:14:55-08 Hamilton Exp Hamilton $
3  rem Run narrow on a full width data .dcd file
4  narrow %1.dcd %1.nar
```

4.9 PTest.bat Plot a response time file using Gnuplot

4.10 Plotter.bat Plot a response time file using Gnuplot

```
 1  @echo off
 2  echo Plot a response time file using Gnuplot
 3  rem $Header: d:/Binder7/CamCheck/RCS/Plotter.bat,v 1.4 2009-03-05 07:12:31-08 Hamilton Exp Hamilton $
 4  echo # $Header: d:/Binder7/CamCheck/RCS/Plotter.bat,v 1.4 2009-03-05 07:12:31-08 Hamilton Exp Hamilton $ >  %1.gpc
 5  echo set grid                  >> %1.gpc
 6  echo set yrange[0:.166]        >> %1.gpc
 7
 8  echo set ytics .017            >> %1.gpc
 9  echo plot "%1.pdc"             >> %1.gpc
10  echo set ytics .020            >> %1.gpc
11  echo plot "%1.pdc"             >> %1.gpc
12
13  echo set term latex            >> %1.gpc
14  echo set ytics .01666          >> %1.gpc
15  echo set output "%1N.inc"      >> %1.gpc
16  echo plot "%1.pdc" with dots   >> %1.gpc
17
18  echo set ytics .020            >> %1.gpc
19  echo set output "%1P.inc"      >> %1.gpc
20  echo plot "%1.pdc" with dots   >> %1.gpc
21  rem  echo plot "%1.pdc" with dots smooth bezier >> %1.gpc
22
23  gnuplot %1.gpc
24
```

4.11 PutData.bat Returns data files to RCS.

4.12 PutHead.bat Prepends a standard header file to a decoded Hitachi Protocol file.

4.13 S654.bat For use with large VK-S654 Hitachi Camera Protocol capture files

4.14 TT.bat Use MakTabl to generate a test file for the GlassKeyboard

```
1  @echo off
2  echo Use MakTabl to generate a test file for the GlassKeyboard
3  rem $Header: d:/Binder7/CamCheck/RCS/TT.bat,v 1.1 2009-03-03 11:03:17-08 Hamilton Exp Hamilton $
4  MakTabl %1
5  copy header+%1 x99
6  BuildD x99 %1.txt
```

Index