This Application Note is specific to the Unidrive SP, Commander SK, Commander GP20
Unidrive Classic and Mentor II / Quantum III Drive Families

Determining the Hardware and Firmware Level of Drive Products

Scope – All of the “current” Drive Products manufactured by CT (Control Techniques) and
most of the options for these drives have both Hardware Issue (the “Iss.” number) and firmware
(software) levels associated with them that indicate the level of capabilities of these products.

Background – The present CT products were designed and introduced to the market with a
basic level of capability at an initial firmware level. Engineering and manufacturing has
continued to enhance these products both by firmware upgrade and hardware enhancement.

The labels for the products indicate the hardware and firmware levels they were manufactured
and tested at, but do not always indicate the present firmware level, as most of the CT product
is designed for ease of upgrade. In a significant number of cases, no “special” hardware is
required to perform such an upgrade.

Sometimes a main drive control board may be changed out in the field and the firmware levels
will not match the original product sticker labels. For this reason, it is advised to look at the
actual internal revision levels that are accessible via drive parameter locations.

CT Product Support will often ask for these details, or will indicate that a minimum revision level
is required for a feature to be supported or for an option to interoperate correctly with another
option (most noticeable on the SP and GP product line).

This application note will provide guidance in determining the firmware level for a CT drive
products and both the hardware Issue (Iss.) and firmware of the “SM format” options available.
This particular revision will concentrate on just the parameters that indicate the present revision,
and the hardware issue that affect the major “SM-format” options.
Instructions

The following parameters detail the actual product revisions. In cases where hardware issue has been important in the past, that revision level is noted, as well.

The present numbering system for firmware revision uses an “\textit{XX.YY.ZZ}” format, permitting a range of 00 to 99 for each group. The initial “\textit{XX.YY}” portion of this number is referred to as the “\textit{major revision}” number on all products discussed, except the oldest product, the Mentor II / Quantum III. The “\textit{ZZ}” portion of this number is referred to as the “\textit{minor}” revision number.

Note that #11.29 is read as the parameter value located at Menu 11 parameter 29

CT Drive products as of August 2008

- **Unidrive SP** (including size 0)
  - Major firmware revision # 11.29 (also available via alias at # 0.50)
  - Firmware sub-version (minor) # 11.34

- **Commander SK**
  - Major firmware revision # 11.29 (also available via alias at # 0.50)
  - Firmware sub-version (minor) # 11.34

- **Commander GP20**
  - Major firmware revision # 11.29 (also available via alias at # 0.50)
  - Firmware sub-version (minor) # 11.34

- **Unidrive Classic**
  - Major firmware revision # 11.29 (also available via alias at # 0.50)
  - Firmware sub-version (minor) # 11.34

- **Mentor II / Quantum III**
  - Firmware revision # 11.15 format XYZ, rev 4.10.00 displayed as 410
CT Solution Module Options  
(SM-format)

Determine what slot the module is in

In the case of a Solutions Module, the parameters will appear in menu 15, 16 or 17 depending on which slot the option module is installed in.

The chart and diagram below shows what menu corresponds to that specific slot.

* Warning *

Removing the Option modules while the unit is powered up will cause damage to the module.

<table>
<thead>
<tr>
<th>Menu 15</th>
<th>=</th>
<th>Slot 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu 16</td>
<td>=</td>
<td>Slot 2</td>
</tr>
<tr>
<td>Menu 17</td>
<td>=</td>
<td>Slot 3</td>
</tr>
</tbody>
</table>

Menu & Parameter Identification

The method used to determine the menu or parameter is as follows:

♦ Pr xx.01 - signifies any menu and parameter number 01.
♦ Pr MM.xx - where MM signifies the menu allocated to the solutions module (this could be 15, 16 or 17 on the Unidrive SP) and xx signifies the parameter number.
Determining what option module you have

Knowing what option modules you may have in your system is very important. The “Module ID Number” is the most accurate way to properly identify the module. Each module has an identification number; this will have a specific number that corresponds to that module—the color could be mis-interpreted! That information is located in parameter # MM.01 where MM is the slot location of that module or modules.

<table>
<thead>
<tr>
<th>Par # MM.01</th>
<th>Module</th>
<th>Color ID</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No module Fitted</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>101</td>
<td>SM-Resolver</td>
<td>Light Blue</td>
<td>Feedback</td>
</tr>
<tr>
<td>102</td>
<td>SM-Universal Encoder Plus</td>
<td>Light Green</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>SM-Encoder Plus</td>
<td>Brown</td>
<td></td>
</tr>
<tr>
<td>201</td>
<td>SM-I/O Plus</td>
<td>Yellow</td>
<td>Automation</td>
</tr>
<tr>
<td>203</td>
<td>SM-I/O Timer</td>
<td>Dark Red</td>
<td></td>
</tr>
<tr>
<td>204</td>
<td>SM-PELV</td>
<td>Turquoise</td>
<td></td>
</tr>
<tr>
<td>206</td>
<td>SM-I/O 120V</td>
<td>Olive</td>
<td></td>
</tr>
<tr>
<td>207</td>
<td>SM-I/O Lite</td>
<td>Dark Yellow</td>
<td></td>
</tr>
<tr>
<td>301</td>
<td>SM-Applications,Apps Plus</td>
<td>Dark Green</td>
<td></td>
</tr>
<tr>
<td>302</td>
<td>SM-Applications Lite</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>303</td>
<td>SM-EZ Motion</td>
<td>Dark Blue</td>
<td></td>
</tr>
<tr>
<td>403</td>
<td>SM-PROFIBUS-DP</td>
<td>Purple</td>
<td>Fieldbus</td>
</tr>
<tr>
<td>404</td>
<td>SM-Interbus</td>
<td>Dark Grey</td>
<td></td>
</tr>
<tr>
<td>406</td>
<td>SM-CAN</td>
<td>Pink</td>
<td></td>
</tr>
<tr>
<td>407</td>
<td>SM-DeviceNet</td>
<td>Medium Grey</td>
<td></td>
</tr>
<tr>
<td>408</td>
<td>SM-CANopen</td>
<td>Light Grey</td>
<td></td>
</tr>
<tr>
<td>409</td>
<td>SM-SERCOS</td>
<td>Red</td>
<td></td>
</tr>
<tr>
<td>410</td>
<td>SM-Ethernet</td>
<td>Beige</td>
<td></td>
</tr>
<tr>
<td>501</td>
<td>SM-SLM</td>
<td>Orange</td>
<td></td>
</tr>
</tbody>
</table>
Process / Fieldbus Module

- SM-Ethernet
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51
  - Hardware issue is silkscreened onto the pc boards
  - Issue 2 available, but Issue 1 works with a Commander SK

- SM-Proﬁbus
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51
  - Hardware issue is silkscreened onto the pc boards
  - Issue 2 available, but Issue 1 works with a Commander SK

- SM-DeviceNet
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51
  - Hardware issue is silkscreened onto the pc boards
  - Issue 2 available, but Issue 1 works with a Commander SK

- SM-CANopen
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51
  - Hardware issue is silkscreened onto the pc boards
  - Issue 2 available, but Issue 1 works with a Commander SK

- SM-CAN
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51
  - Hardware issue is silkscreened onto the pc boards
  - Issue 2 or greater needed for use with a SK

- SM-Interbus
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- SM-LON
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

Second Processor Products

- SM-Apps
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- SM-Apps Plus
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- SM-Apps Lite
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- SM-Apps Lite V2
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- SM-EZMotion
  - Firmware revision # MM.02
  - EZmotion uses a different numbering scheme than the other SM-format products.
**Additional Input / Output Products**

- **SM-I/O 120V**
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- **SM-I/O Plus**
  - Major firmware revision # MM.02

- **SM-I/O Timer**
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- **SM-I/O Lite**
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- **SM-PELV**
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- **SM-I/O 24V Protected**
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

- **SM-I/O 32**
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51

**Specialty Feedback options**

- **SM-Universal Encoder Plus**
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51
  - Hardware issue is silkscreened onto the pc boards
  - Older issue 3 has different capabilities than the newer Issue 4
  - The latest version 4.xx.xx firmware can only be used with Issue 4 hardware

- **SM-SERCOS**
  - Major firmware revision # MM.02
  - Firmware sub-version # MM.51
Hardware issue detail for a SM-Ethernet Module

The following figures illustrate the location for the issue details silkscreened onto the SM-Ethernet UT72 PC board. Other SM-Format options are similar.

SM-Ethernet issue 1.00 and issue 2.00

Location of the hardware Issue detail