Hall Declaration
Exhibit M
QSI industries: Quantum Product IDs

Someone at the JMRI Users list suggested I post this message here as well. Thanks for any help.

I am working on adding functionality to JMRI to support the QSI Quantum CV.PI.SI format for indexed CVs. When using the "Ident" button in Decoder Pro, the program now uses the manufacturer's ID (CV8) and the version number (CV7) to determine the decoder on the service track. This will put you at the first decoder that matches these two IDs, not necessarily the correct model.

QSI also uses a product ID (CV 56.245.4) to further identify the decoder model. I have the version number of several QSI decoders, as this information is in the current QSI_Quantum decoder file. But I only have two of the product IDs. One is for the BLI PRR M1a/b that I am using for development and the Atlas Dash 8 thanks to Jim Quarles.

Below is the current QSI decoder list I have:

Twk Apr 12, 2005 1:03 pm

Show Message Info

"innkeeper354"
<innkeeper354@yahoo.com
innkeeper354
Offline
Send Email
model="Atlas Dash 8-40CW" lowVersionID="6"
productID="103"
model="BLI Hudson 4-6-4" lowVersionID="1"
model="BLI Class A" lowVersionID="2"
model="BLI E7A/B" lowVersionID="5"
model="BLI On30 Consolidation 2-8-0" lowVersionID="5"
model="BLI PRR M1a/b 4-8-2" lowVersionID="5"
productID="302"
model="BLI USRA Heavy Mikado 2-8-2" lowVersionID="5"
model="BLI AC5 Cab Forward" lowVersionID="5"
model="Lionel Challenger" lowVersionID="4"
model="Lionel Gas Turbine" lowVersionID="4"
model="Lionel Veranda Turbine" lowVersionID="4"

This list obviously does not cover all the models that are equipped with QSI decoders, so any information that I can get to fill out this list would be appreciated.

To get the version number, just read CV8.

There are two methods to retrieve the product ID:

Method one:
Write "254" to CV49
Write "4" to CV50
Read CV56 and write it down (High_Byte)
Write "5" to CV50
Read CV56 and write it down (Low_Byte)
The Product number = (High_Byte * 256) + Low_Byte

The result of all this would be something like 302

Method two: (easy by comparison)

In Ops mode!
Write "255" to CV49
Write "0" to CV56
Listen to the product identifier spoken.

Further, I am working on an "exclude" attribute for a decoder model so that the panes (tabs) of the programmer window will be customized for the particular model. For example, the PRR M1 a does not have ditch lights and any attempt to read or write CV 55.110.5 (Ditch Light Strobe Hold Time) will result in a timeout from the programmer. This information is a bit involved in determining, but if anyone cares to do it I would love to have it.
Several people are aware that I have been working on this functionality and I want to thank them for their help and support.
Also, I would like to thank those at QSIIndustries that have helped clarify some of the information in the QSI reference manual version 3.0.

Howard G. Penny
From: g_pruss (g_pruss@yahoo.com)
To: innkeeper354
Date: Tuesday, April 12, 2005 6:53:19 PM
Subject: re: QSI Quantum Product IDs

Howard,

I read your message 2276, "QSI Quantum Product IDs", posted to the QSI Yahoo group.

I am the principal software engineer for the QSI Quantum products, and therefore can provide you with accurate information regarding QSI firmware.

See below for a complete list of all HO Quantum releases to date.

Because you are "working on adding functionality to JMRI to support the QSI Quantum CV.Pi.SI format for indexed CVs", feel free to contact me at my email address, g_pruss@yahoo.com, if you have any questions regarding Quantum firmware.

I do ask that you NOT give out my email address to any other individual or group.

Regards,
Gerry Pruss
QSI

----------------------------------------
Quantum 1 HO Engines
As of 8-April-05

NOTE: The production release file name, which is printed on each ROM chip, contains the Product Model Number (or Product Identification Number), the Version Number, and the Build Number. The Version Number is indicated as a alphabetic character ('a'...'z'), where 'a'=1,'b'=2, etc.

For example, ho100e01 refers to
  Model Number = 100
  Version = 5
  Build Number = 1

Diesel

<table>
<thead>
<tr>
<th>Model #</th>
<th>Name</th>
<th>Mfg</th>
<th>Most recent production release</th>
</tr>
</thead>
<tbody>
<tr>
<td>ho100</td>
<td>E7</td>
<td>BLI</td>
<td>ho100e01 (11-Mar-04)</td>
</tr>
<tr>
<td>ho101</td>
<td>SW7/NW2</td>
<td>BLI</td>
<td>ho101f17 (4-Feb-05)</td>
</tr>
</tbody>
</table>
ho102  SD40  BLI  ho102f18 (18-Feb-05)
ho103  DASH 8-40CW,C  Atlas  ho103f18 (14-Feb-05)
ho105  FM with Mars Light  Atlas  ho105f17 (31-Jan-05)
ho106  FM without Mars Light  Atlas  ho106f17 (31-Jan-05)
ho107  E6 with Mars Light  Life Like  ho107f02 (26-Aug-04)
ho108  E6 without Mars Light  Life Like  ho108f02 (26-Aug-04)
ho111  SD24/26  Atlas  ho111f18 (14-Feb-05)
ho112  GP9  Life Like  ho112f17 (31-Jan-05)
ho113  RS 10  CHC  ho113f18 (14-Feb-05)
ho115  E3/E6 with Mars Light  BLI  ho115f17 (31-Jan-05)
ho116  E3/E6 without Mars Light  BLI  ho116f17 (31-Jan-05)
ho119  E7 with Mars Light  BLI  ho119f17 (4-Feb-05)
ho120  E7 without Mars Light  BLI  ho120f17 (4-Feb-05)
ho121  E3/E6 with Mars Light  BLI  ho121f09 (22-Nov-04)
ho122  E3/E6 without Mars Light  BLI  ho122f09 (22-Nov-04)
ho123  RS 18  CHC  ho123f18 (14-Feb-05)
ho124  U28B  Life Like  ho124f18 (14-Feb-05)
ho125  RSD-15  BLI  ho125f18 (14-Feb-05)
ho126  DASH 8-40BW,B  Atlas  ho126f17 (30-Jan-05)

Electric

Model #  Name  Mfg  Most recent production release
ho200  GG-1  BLI  ho200f19 (18-Mar-05)

Steam

Model #  Name  Mfg  Most recent production release
ho300  Hudson  BLI  ho300e15 (19-Jul-04)
ho301  Mikado  BLI  ho301e05 (26-Mar-04)
ho302  M1A Mountain  BLI  ho302e06 (8-Mar-04)
ho303  ON30-C/16 standard  BLI  ho303e03 (27-Oct-03)
ho304  ON30-C/16 with Xmas PFA  BLI  ho304e03 (27-Oct-03)
ho305  ATSF 3751  BLI  ho305e10 (6-July-04)
ho306  PRR-J1  BLI  ho306e10 (29-June-04)
ho307  UP 4-8-2 Mountain  BLI  ho307f20 (8-Apr-05)
ho309  PRR K4  BLI  ho309f01 (14-Aug-04)
ho310  C&O T1, Texas  BLI  ho310f08 (11-Nov-04)
ho312  N&W J 4-8-4  BLI  ho312f18 (14-Feb-05)
ho313  NYC S1b Niagara 4-8-4  BLI  ho313f17 (30-Jan-05)

Articulated Steam

Model #  Name  Mfg  Most recent production release
ho400  N&W Class A  BLI  ho400e01 (9-Oct-03)
ho401  Pensy Duplex T1  BLI  ho401e06 (25-Nov-03)
ho402  Challenger Lionel  ho402d03 (1-Oct-03)
ho403  Cab Forward AC4,AC5  BLI  ho403e08 (29-Jun-04)
ho404  USRA 2-8-8-2  Life Like  ho404f18 (14-Feb-05)

RGJ_HP.00000005
Gas Turbine

<table>
<thead>
<tr>
<th>Model #</th>
<th>Name</th>
<th>Mfg</th>
<th>Most recent production release</th>
</tr>
</thead>
<tbody>
<tr>
<td>ho500</td>
<td>Veranda</td>
<td>Lionel</td>
<td>ho500d04 (16-Feb-04)</td>
</tr>
</tbody>
</table>
From: Howard Penny (innkeeper354@yahoo.com)
To: g_pruss
Date: Thursday, April 14, 2005 10:56:10 AM
Subject: re: QSI Quantum Product IDs

Thanks so much for the information. This helps out a lot.

Your list included the "Most recent production release", we use can two attributes to determine a range for versions, lowVersionID and highVersionID. If we use just the lowVersionID, it is assumed that this is the only version for a particular decoder. Do you have a list of products that have a range of versions?

There are some CVs that are not supported by a particular decoder model, such as dynamic brake volume for the M1 a/b. Does each group, ie. "steam", support the same CVs, or does it break down to individual models? The supported CVs, or nonsupported (maybe a smaller list), would be great to have as well.

BTW: your address is safe with me.

Thanks again,

Howard G. Penny
hpenny@nc.rr.com (this is my primary email addr.)

--- g_pruss <g_pruss@yahoo.com> wrote:

> Howard,
> I read your message 2276, "QSI Quantum Product IDs",
> posted to the
> QSI Yahoo group.
> I am the principal software engineer for the QSI
> Quantum products, and
> therefore can provide you with accurate information
> regarding QSI
> firmware.
> See below for a complete list of all HO Quantum
> releases to date.
> Because you are "working on adding functionality to
> JMRI to support
> the QSI Quantum CV.P.I.SI format for indexed CVs",
> feel free to contact me at my email address,
> g_pruss@yahoo.com, if
> you have any questions regarding Quantum firmware.
>
> I do ask that you NOT give out my email address to
> any other
> individual or group.
>
> Regards,
> Gerry Pruss
> QSI

Do you Yahoo!?  
Yahoo! Small Business - Try our new resources site!  
http://smallbusiness.yahoo.com/resources/
From: Gerry Pruss (g_pruss@yahoo.com)  
To: Howard Penny  
Date: Thursday, April 14, 2005 8:24:43 PM  
Subject: re: QSI Quantum Product IDs

Howard,

> Do you have a list of products that have a range of
> versions?

I will send you such a list Saturday or Sunday.

> Does each group, ie. "steam", support
> the same CVs, or does it break down to individual
> models?

In general, all Diesel models support the same
basic features common to Diesels. All Steam models
support the same basic features common to Steam
engines.

The exception to the above is lighting.
Some models support a Mars Light, others do not.
The same goes for Ditch Lights, Number Board Lights,
and Cab Lights. Due to hardware limitations,
models which support a Mars Light can not have
a dimmable headlight (the headlight is either
bright or off).

The firmware for all models supports both a
headlight (bright,dim,off or bright,off) and
a reverse light (bright,off), even though some
models do not have a physical reverse light wired up.

Due to hardware (I/O pin) limitations, we were not able
to support Ditch Lights, Number Board Lights
and Cab lights for all models regardless of whether
or not these lights existed physically.

> The supported CVs, or nonsupported (maybe a
> smaller list), would be great to have as well.

This list will take a little longer to prepare.
But I will start work on it Saturday.

Gerry Pruss
Howard Penny <innkeeper354@yahoo.com> wrote:

Thanks so much for the information. This helps out a lot.

Your list included the "Most recent production release", we use can two attributes to determine a range for versions, lowVersionID and highVersionID.

If we use just the lowVersionID, it is assumed that this is the only version for a particular decoder.

Do you have a list of products that have a range of versions?

There are some CVs that are not supported by a particular decoder model, such as dynamic brake volume for the M1 a/b. Does each group, ie. "steam", support the same CVs, or does it break down to individual models? The supported CVs, or nonsupported (maybe a smaller list), would be great to have as well.

BTW: your address is safe with me.

Thanks again,

Howard G. Penny

hpenny@nc.rr.com (this is my primary email addr.)

--- g_pruss <g_pruss@yahoo.com> wrote:

> Howard,

> I read your message 2276, "QSI Quantum Product IDs",

> posted to the QSI Yahoo group.

> I am the principal software engineer for the QSI Quantum products, and therefore can provide you with accurate information regarding QSI firmware.

> See below for a complete list of all HO Quantum releases to date.
Because you are "working on adding functionality to JMRI to support the QSI Quantum CV.PL.SI format for indexed CVs", feel free to contact me at my email address, g_pruss@yahoo.com, if you have any questions regarding Quantum firmware.

I do ask that you NOT give out my email address to any other individual or group.

Regards,

Gerry Pruss
QSI

Do you Yahoo!?
Yahoo! Small Business - Try our new resources site!
http://smallbusiness.yahoo.com/resources/

Do you Yahoo!?
Yahoo! Small Business - Try our new resources site!
http://smallbusiness.yahoo.com/resources/
From: Howard Penny (innkeeper354@yahoo.com)
To: Gerry Pruss
Date: Thursday, April 14, 2005 10:10:10 PM
Subject: re: QSI Quantum Product IDs

Gerry,

>>> Do you have a list of products that have a range
>>> of versions?
>
>>> I will send you such a list Saturday or Sunday.

That would be a great help.

>>> Does each group, ie. "steam", support
>>> the same CVs, or does it break down to individual
>>> models?
>
>>> In general, all Diesel models support the same
>>> basic features common to Diesels. All Steam models
>>> support the same basic features common to Steam
>>> engines.

This is good to know, and may help reduce the
importance of a new "exclude" attribute for the
particular model. I have now broken the "QSI_Quantum"
decoders into separate families, such as steam,
diesel, etc. This way each family is in a separate
file and can include just those CVs that the family
supports. This in turn makes it possible to customize
the programmer interface for the particular group. I
have already had to include an "infoOnly" attribute
for certain CVs that can not be changed such as CV
53.1.0. My experience shows that not only can it not
be changed, but it can't be read as well, causing a
timeout from the programmer. This attribute allows
the programmer to skip CVs that can not be read during
a "read all CVs" operation.

>>> The supported CVs, or nonsupported (maybe a
>>> smaller list), would be great to have as well.
>
>>> This list will take a little longer to prepare.
>>> But I will start work on it Saturday.
>
Wow, that would be fantastic! I really appreciate
your help.
Like a lot of software endeavors, this has proven to be a bigger effort than I initially thought. It has now reached about 3200 lines of code and lot of new classes. But is has been an interesting challenge that I have almost finished, ready for beta testing. From the feedback that I am getting, a lot of people are anxiously awaiting this functionality.

Most of my software background is in real-time embedded code so this has been a refreshing change. It still creates the hair pulling situations though ;-).

Thanks,

Howard G. Penny
hpenny@nc.rr.com

---

Do you Yahoo!??
Yahoo! Small Business - Try our new resources site!
http://smallbusiness.yahoo.com/resources/
From: Gerry Pruss (g_pruss@yahoo.com)  
To: Howard Penny  
Date: Monday, April 18, 2005 10:17:15 PM  
Subject: re: QSI Quantum Product IDs

Howard,

>>> Do you have a list of products that have a range
>>> of versions?
>>> 

See attached file.

> I
> have already had to include an "infoOnly" attribute
> for certain CVs that can not be changed such as CV
> 53.1.0. My experience shows that not only can it
> not
> be changed, but it can't be read as well, causing a
> timeout from the programmer.

This has been changed for version 6 firmware.
All CV 53 values can now be changed. See
the Version 3 Quantum DCC Reference Manual:


I will have to remember to include this in
the list of supported features which I will
send you later.

Gerry Pruss

--- Howard Penny <innkeeper354@yahoo.com> wrote:
> Gerry,
> 
>>> Do you have a list of products that have a range
>>> of versions?
>>> 
>>> I will send you such a list Saturday or Sunday.
> 
>>> That would be a great help.
>
>>> Does each group, ie. "steam", support
>>> the same CVs, or does it break down to
>>> individual
>>> models?
>>> 

RGJ_HP.00000014
In general, all Diesel models support the same basic features common to Diesels. All Steam models support the same basic features common to Steam engines.

This is good to know, and may help reduce the importance of a new "exclude" attribute for the particular model. I have now broken the "QSI_Quantum" decoders into separate families, such as steam, diesel, etc. This way each family is in a separate file and can include just those CVs that the family supports. This in turn makes it possible to customize the programmer interface for the particular group.

I have already had to include an "infoOnly" attribute for certain CVs that can not be changed such as CV 53.1.0. My experience shows that not only can it not be changed, but it can't be read as well, causing a timeout from the programmer. This attribute allows the programmer to skip CVs that can not be read during a "read all CVs" operation.

The supported CVs, or nonsupported (maybe a smaller list), would be great to have as well.

This list will take a little longer to prepare. But I will start work on it Saturday.

Wow, that would be fantastic! I really appreciate your help.

Like a lot of software endeavors, this has proven to be a bigger effort than I initially thought. It has now reached about 3200 lines of code and lot of new classes. But is has been an interesting challenge that I have almost finished, ready for beta testing.

From the feedback that I am getting, a lot of people are anxiously awaiting this functionality.

Most of my software background is in real-time embedded code so this has been a refreshing change. It still creates the hair pulling situations though.

;-).
> Thanks,

> Howard G. Penny
> hpenny@nc.rr.com

> Do you Yahoo!?
> Yahoo! Small Business - Try our new resources site!
> http://smallbusiness.yahoo.com/resources/

---

Do you Yahoo!?
Plan great trips with Yahoo! Travel: Now over 17,000 guides!
http://travel.yahoo.com/p-travelguide
### Released Quantum HO Engines

As of 11-April-05

#### Diesel

<table>
<thead>
<tr>
<th>Model #</th>
<th>Name</th>
<th>Mfg</th>
<th>Production Releases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ho100</td>
<td>E7</td>
<td>BLI</td>
<td>ho100d00 (4-Aug-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho100e00 (7-Oct-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho100e01 (11-Mar-04)</td>
</tr>
<tr>
<td>ho101</td>
<td>SW7 / NW2</td>
<td>BLI</td>
<td>ho101f12 (21-Dec-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho101f17 (4-Feb-05)</td>
</tr>
<tr>
<td>ho102</td>
<td>SD40</td>
<td>BLI</td>
<td>ho102f07 (4-Nov-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho102f18 (18-Feb-05)</td>
</tr>
<tr>
<td>ho103</td>
<td>DASH 8-40CW,C</td>
<td>Atlas</td>
<td>ho103f05 (20-Oct-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho103f06 (25-Oct-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho103f18 (14-Feb-05)</td>
</tr>
<tr>
<td>ho105</td>
<td>FM with Mars Light</td>
<td>Atlas</td>
<td>ho105f00 (14-July-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho105f17 (31-Jan-05)</td>
</tr>
<tr>
<td>ho106</td>
<td>FM without Mars Light</td>
<td>Atlas</td>
<td>ho106f00 (14-July-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho106f17 (31-Jan-05)</td>
</tr>
<tr>
<td>ho107</td>
<td>E6 with Mars Light</td>
<td>Life Like</td>
<td>ho107f02 (26-Aug-04)</td>
</tr>
<tr>
<td>ho108</td>
<td>E6 without Mars Light</td>
<td>Life Like</td>
<td>ho108f02 (26-Aug-04)</td>
</tr>
<tr>
<td>ho111</td>
<td>SD24/26</td>
<td>Atlas</td>
<td>ho111f04 (14-Oct-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho111f09 (2-Dec-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho111f18 (14-Feb-05)</td>
</tr>
<tr>
<td>ho112</td>
<td>GP9</td>
<td>Life Like</td>
<td>ho112f03 (10-Sept-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho112f17 (31-Jan-05)</td>
</tr>
<tr>
<td>ho113</td>
<td>RS 10</td>
<td>CHC</td>
<td>ho113f10 (2-Dec-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho113f12 (22-Dec-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho113f18 (14-Feb-05)</td>
</tr>
<tr>
<td>ho114</td>
<td>C-Liner</td>
<td>CHC</td>
<td>ho115f03 (10-Sept-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho115f17 (31-Jan-05)</td>
</tr>
<tr>
<td>ho115</td>
<td>E3/E6 with Mars Light</td>
<td>BLI</td>
<td>ho116f03 (10-Sept-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho116f17 (31-Jan-05)</td>
</tr>
<tr>
<td>ho116</td>
<td>E3/E6 without Mars Light</td>
<td>BLI</td>
<td>ho119f09 (22-Nov-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho119f17 (4-Feb-05)</td>
</tr>
<tr>
<td>ho119</td>
<td>E7 with Mars Light</td>
<td>BLI</td>
<td>ho120f09 (22-Nov-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho120f17 (4-Feb-05)</td>
</tr>
<tr>
<td>ho120</td>
<td>E7 without Mars Light</td>
<td>BLI</td>
<td>ho121f09 (22-Nov-04)</td>
</tr>
<tr>
<td>ho121</td>
<td>E3/E6 with Mars Light</td>
<td>BLI</td>
<td>ho122f09 (22-Nov-04)</td>
</tr>
<tr>
<td>ho122</td>
<td>E3/E6 without Mars Light</td>
<td>BLI</td>
<td>ho123f11 (5-Dec-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho123f12 (22-Dec-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho123f18 (14-Feb-05)</td>
</tr>
<tr>
<td>ho123</td>
<td>RS 18</td>
<td>CHC</td>
<td>ho124f13 (12-Jan-05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho124f15 (24-Jan-05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho124f18 (14-Feb-05)</td>
</tr>
<tr>
<td>ho124</td>
<td>U28B</td>
<td>Life Like</td>
<td>ho125f14 (18-Jan-05)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho125f18 (14-Feb-05)</td>
</tr>
<tr>
<td>ho125</td>
<td>RSD-15</td>
<td>BLI</td>
<td>ho126f17 (30-Jan-05)</td>
</tr>
<tr>
<td>ho126</td>
<td>DASH 8-40BW,B</td>
<td>Atlas</td>
<td>ho128f21 (11-Apr-05)</td>
</tr>
<tr>
<td>ho128</td>
<td>GE C30-7</td>
<td>BLI</td>
<td>ho128f21 (11-Apr-05)</td>
</tr>
</tbody>
</table>
### Electric

<table>
<thead>
<tr>
<th>Model #</th>
<th>Name</th>
<th>Mfg</th>
<th>Production Releases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ho200</td>
<td>GG-1</td>
<td>BLI</td>
<td>ho200c01 (6-July-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho200e02 (10-Oct-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho200e03 (9-Mar-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho200e02 (14-Apr-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho200f19 (18-Mar-05)</td>
</tr>
</tbody>
</table>

### Steam

<table>
<thead>
<tr>
<th>Model #</th>
<th>Name</th>
<th>Mfg</th>
<th>Production Releases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ho300</td>
<td>Hudson</td>
<td>BLI</td>
<td>ho300a01 (4-Sep-02)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho300a02 (24-Sep-02)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho300e01 (9-Oct-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho300e02 (7-July-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho300e15 (19-Jul-04,)</td>
</tr>
<tr>
<td>ho301</td>
<td>Mikado</td>
<td>BLI</td>
<td>ho301e04 (29-Oct-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho301e05 (26-Mar-04)</td>
</tr>
<tr>
<td>ho302</td>
<td>M1A Mountain</td>
<td>BLI</td>
<td>ho302e05 (31-Oct-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho302e06 (8-Mar-04)</td>
</tr>
<tr>
<td>ho303</td>
<td>ON30-C/16 standard</td>
<td>BLI</td>
<td>ho303e03 (27-Oct-03)</td>
</tr>
<tr>
<td>ho304</td>
<td>ON30-C/16 with Xmas PFA</td>
<td>BLI</td>
<td>ho304e03 (27-Oct-03)</td>
</tr>
<tr>
<td>ho305</td>
<td>ATSF 3751</td>
<td>BLI</td>
<td>ho305e08 (28-Apr-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho305e09 (29-Jun-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho305e10 (6-July-04)</td>
</tr>
<tr>
<td>ho306</td>
<td>PRR-J1</td>
<td>BLI</td>
<td>ho306e08 (28-Apr-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho306e09 (1-June-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho306e10 (29-June-04)</td>
</tr>
<tr>
<td>ho307</td>
<td>UP 4-8-2 Mountain</td>
<td>BLI</td>
<td>ho307f20 (8-Apr-05)</td>
</tr>
<tr>
<td>ho309</td>
<td>PRR K4</td>
<td>BLI</td>
<td>ho309f01 (14-Aug-04)</td>
</tr>
<tr>
<td>ho310</td>
<td>C&amp;O T1, Texas</td>
<td>BLI</td>
<td>ho310f08 (11-Nov-04)</td>
</tr>
<tr>
<td>ho312</td>
<td>N&amp;W J 4-8-4</td>
<td>BLI</td>
<td>ho312f18 (14-Feb-05)</td>
</tr>
<tr>
<td>ho313</td>
<td>NYC S1b Niagara 4-8-4</td>
<td>BLI</td>
<td>ho313f17 (30-Jan-05)</td>
</tr>
</tbody>
</table>

### Articulated Steam

<table>
<thead>
<tr>
<th>Model #</th>
<th>Name</th>
<th>Mfg</th>
<th>Production Releases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ho400</td>
<td>N&amp;W Class A</td>
<td>BLI</td>
<td>ho400b01 (15-Apr-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho400e01 (9-Oct-03)</td>
</tr>
<tr>
<td>ho401</td>
<td>Pensy Duplex T1</td>
<td>BLI</td>
<td>ho401e06 (25-Nov-03)</td>
</tr>
<tr>
<td>ho402</td>
<td>Challenger</td>
<td>Lionel</td>
<td>ho402d01 (17-Sep-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho402d02 (26-Sep-03)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho402d03 (1-Oct-03)</td>
</tr>
<tr>
<td>ho403</td>
<td>Cab Forward AC4,AC5</td>
<td>BLI</td>
<td>ho403e07 (31-Jan-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho403e08 (29-Jun-04)</td>
</tr>
<tr>
<td>ho404</td>
<td>USRA 2-8-8-2</td>
<td>Life Like</td>
<td>ho404f08 (11-Nov-04)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ho404f18 (14-Feb-05)</td>
</tr>
</tbody>
</table>

### Gas Turbine
<table>
<thead>
<tr>
<th>Model #</th>
<th>Name</th>
<th>Mfg</th>
<th>Production Releases</th>
</tr>
</thead>
<tbody>
<tr>
<td>ho500</td>
<td>Veranda</td>
<td>Lionel</td>
<td>ho500d04 (16-Feb-04)</td>
</tr>
</tbody>
</table>
From: Howard Penny (innkeeper354@yahoo.com)
To: Gerry Pruss
Date: Tuesday, April 19, 2005 1:15:49 PM
Subject: re: QSI Quantum Product IDs

Thanks very much for the file.

--- Gerry Pruss <g_pruss@yahoo.com> wrote:
>>> I have already had to include an "infoOnly"
>>> attribute for certain CVs that can not be changed
>>> such as CV 53.1.0. My experience shows that not
>>> only can it not be changed, but it can't be read
>>> as well, causing a timeout from the programmer.
>>>
>>> This has been changed for version 6 firmware.
>>> All CV 53 values can now be changed, See
>>> the Version 3 Quantum DCC Reference Manual:

My version 3 copy of the manual and the link you sent
me still indicated that the first four outputs are
pre-assigned and can not be changed. It this not true
any longer?

Thanks,

Howard G. Penny
hpenny@nc.rr.com

Do you Yahoo!?
Yahoo! Mail - Find what you need with new enhanced search.
http://info.mail.yahoo.com/mail_250
From: Michael Mosher (mjmx1@comcast.net)
To: innkeeper354@yahoo.com
Date: Tuesday, April 19, 2005 1:37:54 PM
Subject: Re: [jmriusers] QSI Quantum decoder product IDs

BLI SD40-2 Ver=6, ID=102 (chip maked HO102f07)
BLI SF 3751 class 4-8-4 Ver=5, ID=305 (chip maked HO305e10) Note this is
with the replacement chip for four chuffs per wheel revolution.

Michael Mosher

----- Original Message -----  
From: "innkeeper354" <innkeeper354@yahoo.com>
To: <jmriusers@yahoogroups.com>
Sent: Tuesday, April 12, 2005 9:26 AM
Subject: [jmriusers] QSI Quantum decoder product IDs

> 
> > I am working on adding functionality to JMRI to support the QSI
> > Quantum CV PLS format for indexed CVs. When using the
> > "Ident" button in DP, the program now uses the
> > manufacture's ID (CV8) and the version number (CV7) to determine
> > the decoder on the service track. This will put you at the first
> > decoder that matches these two IDs, not necessarily the correct model.
> > 
> > QSI also uses a product ID (CV 56.245.4) to further identify the
> > decoder model. I have the version number of several QSI decoders, as
> > this information is in the current QSI_Quantum decoder file. But I
> > only have two of the product IDs. One is for the BLI PRR M1 a/b that
> > I am using for development and the Atlas Dash 8 thanks to Jim Quarles.
> > 
> > Below is the current QSI decoder list I have:
> > 
> > model="Atlas Dash 8-40CW" lowVersionID="6" productID="103"
> > model="BLI Hudson 4-6-4" lowVersionID="1"
> > model="BLI Class A" lowVersionID="2"
> > model="BLI E7A/B" lowVersionID="5"
> > model="BLI On30 Consolidation 2-8-0" lowVersionID="5"
> > model="BLI PRR M1a/b 4-8-2" lowVersionID="5" productID="302"
> > model="BLI USRA Heavy Mikado 2-8-2" lowVersionID="5"
> > model="BLI AC5 Cab Forward" lowVersionID="5"
> > model="Lionel Challenger" lowVersionID="4"
> > model="Lionel Gas Turbine" lowVersionID="4"
> > model="Lionel Veranda Turbine" lowVersionID="4"
> > 
> > This list obviously does not cover all the models that are equipped
> > with QSI decoders, so any information that I can get to fill out this
list would be appreciated.

To get the version number, just read CV8.

There are two methods to retrieve the product ID:

Method one:

Write "254" to CV49
Write "4" to CV50
Read CV56 and write it down (High_Byte)
Write "5" to CV50
Read CV56 and write it down (Low_Byte)
The Product number = (High_Byte * 256) + Low_Byte

The result of all this would be something like 302

Method two: (easy by comparison)

In Ops mode!
Write "255" to CV49
Write "0" to CV56
Listen to the product identifier spoken.

Further, I am working on an "exclude" attribute for a decoder
model so that the panes (tabs) of the programmer window will be
customized for the particular model. For example, the PRR M1 a does
not have ditch lights and any attempt to read or write CV 55.110.5
(Ditch Light Strobe Hold Time) will result in a timeout from the
programmer. This information is a bit involved in determining, but if
anyone cares to do it I would love to have it.

Several here are aware that I have been working on this functionality
and I want to thank them for their help and support. Also, I would
like to thank those at QSIindustries that have help clarify some of the
information in the QSI reference manual version 3.0.

Howard G. Penny

Yahoo! Groups Links

To visit your group on the web, go to:
http://groups.yahoo.com/group/jmriusers/

To unsubscribe from this group, send an email to:
jmriusers-unsubscribe@yahooogroups.com

<*> Your use of Yahoo! Groups is subject to:
http://docs.yahoo.com/info/terms/

>
From: Gerry Pruss (g_pruss@yahoo.com)
To: Howard Penny
Date: Tuesday, April 19, 2005 3:03:54 PM
Subject: re: QSI Quantum Product IDs

Howard,

Oops. The documentation is incorrect. The part about "outputs 1...4 being preassigned and cannot be changed" is no longer correct.

This incorrect statement slipped through my own several iterations of proofreading this manual.

Gerry Pruss

--- Howard Penny <innkeeper354@yahoo.com> wrote:
> Thanks very much for the file.
>
> --- Gerry Pruss <g_pruss@yahoo.com> wrote:
> >>> "I have already had to include an "infoOnly"
> >>> attribute for certain CVs that can not be
> >>> changed
> >>> such as CV 53.1.0. My experience shows that not
> >>> only can it not be changed, but it can't be read
> >>> as well, causing a timeout from the programmer.
> 
> >>>
> >>> This has been changed for version 6 firmware.
> >>> All CV 53 values can now be changed. See
> >>> the Version 3 Quantum DCC Reference Manual:
> >
> >> My version 3 copy of the manual and the link you
> >> sent
> >> me still indicated that the first four outputs are
> >> pre-assigned and can not be changed. It this not
> >> true
> >> any longer?
> >
> > Thanks,
> >
> > Howard G. Penny
> > hpenny@nc.rr.com
> 
> >
Do you Yahoo!?
Yahoo! Mail - Find what you need with new enhanced search.
http://info.mail.yahoo.com/mail_250

---

Yahoo! Mail Mobile
Take Yahoo! Mail with you! Check email on your mobile phone.
http://mobile.yahoo.com/learn/mail