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**QSI Quantum Product IDs**

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Tue Apr 12, 2005 1:03 pm

Show Message Info

**"innkeeper354"**  
**<innkeeper354@yahoo.co**  
innkeeper354  
Offline  
Send Email

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 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 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

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**QSI 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...

Author Sort by Date

innkeeper354 Apr 12, 2004 1:03 pm

**Re: QSI Quantum Product IDs**

model = "P2K E6" Version ID="6" product ID="107" Build "2" "8/26/2004" model = "USRA 2-8-8-2" Version ID="6" product ID="8" Build "8" "11/11/2004" Conrad ...

Conrad & Zeus Apr 13, 2004 3:14 am

**Re: QSI Quantum Product IDs**

Thanks for all the response I have received. A lot has been private. I now have a great deal of information regarding this posting. Everyone that uses JMRL...

innkeeper354 Apr 19, 2004 9:11 pm

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**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

Model #	Name	Mfg	Most recent production release
ho100	E7 BLI	ho100e01	(11-Mar-04)
ho101	SW7/NW2 BLI	ho101f17	(4-Feb-05)

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 J4-8-4	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)

Gas Turbine

Model #	Name	Mfg	Most recent production release
ho500	Veranda	Lionel	ho500d04 (16-Feb-04)

**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](mailto:hpenny@nc.rr.com) (this is my primary email addr.)

--- g\_pruss <[g\\_pruss@yahoo.com](mailto:g_pruss@yahoo.com)> wrote:

- >
- > Howard,
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- > I read your message 2276, "QSI Quantum Product IDs",
- > posted to the
- > QSI Yahoo group.
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- > I am the principal software engineer for the QSI
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- > 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",
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- > I do ask that you NOT give out my email address to
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- > individual or group.
- >
- > Regards,
- > Gerry Pruss
- > QSI
- >
- >

---

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**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

RGJ\_HP.00000009

8/14/2009 6:15 PM

--- Howard Penny <[innkeeper354@yahoo.com](mailto: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  
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> 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](mailto:hpenny@nc.rr.com) (this is my primary email addr.)

> --- g\_pruss <[g\\_pruss@yahoo.com](mailto:g_pruss@yahoo.com)> wrote:

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>> I am the principal software engineer for the QSI  
>> Quantum products, and  
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> information  
>> regarding QSI  
>> firmware.  
>>  
>> See below for a complete list of all HO Quantum  
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>>

RGJ\_HP.00000010

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>> JMRI to support  
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>> feel free to contact me at my email address,  
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>> I do ask that you NOT give out my email address to  
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>> Regards,  
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**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.  
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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](mailto:hpenny@nc.rr.com)

---

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**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:

<http://qsindustries.com/New%20Train%20Page/quantum%20dcc%20manual%20version%203.0.pdf>

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](mailto:innkeeper354@yahoo.com)> wrote:

> Gerry,  
>  
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> It still creates the hair pulling situations though  
> ;-).

>



> Thanks,

>

> Howard G. Penny

> [hpenny@nc.rr.com](mailto:hpenny@nc.rr.com)

>

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## Released Quantum HO Engines

As of 11-April-05

### Diesel

Model #	Name	Mfg	Production Releases
ho100	E7	BLI	ho100d00 (4-Aug-03) ho100e00 (7-Oct-03) ho100e01 (11-Mar-04)
ho101	SW7 / NW2	BLI	ho101f12 (21-Dec-04) ho101f17 (4-Feb-05)
ho102	SD40	BLI	ho102f07 (4-Nov-04) ho102f18 (18-Feb-05)
ho103	DASH 8-40CW,C	Atlas	ho103f05 (20-Oct-04) ho103f06 (25-Oct-04) ho103f18 (14-Feb-05)
ho105	FM with Mars Light	Atlas	ho105f00 (14-July-04) ho105f17 (31-Jan-05)
ho106	FM without Mars Light	Atlas	ho106f00 (14-July-04) 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	ho111f04 (14-Oct-04) ho111f10 (2-Dec-04) ho111f18 (14-Feb-05)
ho112	GP9	Life Like	ho112f03 (10-Sept-04) ho112f17 (31-Jan-05)
ho113	RS 10	CHC	ho113f10 (2-Dec-04) ho113f12 (22-Dec-04) ho113f18 (14-Feb-05)
ho114	C-Liner	CHC	
ho115	E3/E6 with Mars Light	BLI	ho115f03 (10-Sept-04) ho115f17 (31-Jan-05)
ho116	E3/E6 without Mars Light	BLI	ho116f03 (10-Sept-04) ho116f17 (31-Jan-05)
ho119	E7 with Mars Light	BLI	ho119f09 (22-Nov-04) ho119f17 (4-Feb-05)
ho120	E7 without Mars Light	BLI	ho120f09 (22-Nov-04) 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	ho123f11 (5-Dec-04) ho123f12 (22-Dec-04) ho123f18 (14-Feb-05)
ho124	U28B	Life Like	ho124f13 (12-Jan-05) ho124f15 (24-Jan-05) ho124f18 (14-Feb-05)
ho125	RSD-15	BLI	ho125f14 (18-Jan-05) ho125f18 (14-Feb-05)
ho126	DASH 8-40BW,B	Atlas	ho126f17 (30-Jan-05)
ho128	GE C30-7	BLI	ho128f21 (11-Apr-05)

**Electric**

Model #	Name	Mfg	Production Releases
ho200	GG-1	BLI	ho200c01 (6-July-03) ho200e02 (10-Oct-03) ho200e03 (9-Mar-04) ho200c02 (14-Apr-04) ho200f19 (18-Mar-05)

**Steam**

Model #	Name	Mfg	Production Releases
ho300	Hudson	BLI	ho300a01 (4-Sep-02) ho300a02 (24-Sep-02) ho300e01 (9-Oct-03) ho300e02 (7-July-04) ho300e15 (19-Jul-04,)
ho301	Mikado	BLI	ho301e04 (29-Oct-03) ho301e05 (26-Mar-04)
ho302	M1A Mountain	BLI	ho302e05 (31-Oct-03) 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	ho305e08 (28-Apr-04) ho305e09 (29-Jun-04) ho305e10 (6-July-04)
ho306	PRR-J1	BLI	ho306e08 (28-Apr-04) ho306e09 (1-June-04) 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	Production Releases
ho400	N&W Class A	BLI	ho400b01 (15-Apr-03) ho400e01 (9-Oct-03)
ho401	Pensy Duplex T1	BLI	ho401e06 (25-Nov-03)
ho402	Challenger	Lionel	ho402d01 (17-Sep-03) ho402d02 (26-Sep-03) ho402d03 (1-Oct-03)
ho403	Cab Forward AC4,AC5	BLI	ho403e07 (31-Jan-04) ho403e08 (29-Jun-04)
ho404	USRA 2-8-8-2	Life Like	ho404f08 (11-Nov-04) ho404f18 (14-Feb-05)

**Gas Turbine**

<b>Model #</b>	<b>Name</b>	<b>Mfg</b>	<b>Production Releases</b>
ho500	Veranda	Lionel	ho500d04 (16-Feb-04)

**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](mailto: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. Is this not true any longer?

Thanks,

Howard G. Penny  
[hpenny@nc.rr.com](mailto:hpenny@nc.rr.com)

---

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**From:** Michael Mosher (mjm1@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.PI.SI 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 QSI industries that have help clarify some of the  
> information in the QSI reference manual version 3.0.  
>  
> Howard G. Penny  
>  
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>  
>  
> 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:

RGJ\_HP.00000022

> [jmriusers-unsubscribe@yahoogleroups.com](mailto:jmriusers-unsubscribe@yahoogleroups.com)  
>  
> <\*> Your use of Yahoo! Groups is subject to:  
> <http://docs.yahoo.com/info/terms/>  
>  
>  
>  
>



**From:** Gerry Pruss ([g\\_pruss@yahoo.com](mailto: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](mailto:innkeeper354@yahoo.com)> wrote:

> Thanks very much for the file.

>

>

> --- Gerry Pruss <[g\\_pruss@yahoo.com](mailto:g_pruss@yahoo.com)> wrote:

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>>> attribute for certain CVs that can not be

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> true

> any longer?

>

> Thanks,

>

> Howard G. Penny

> [hpenny@nc.rr.com](mailto:hpenny@nc.rr.com)

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