
Data I/O Device Support FAQ

Glossary of Terms

DSR: Device Support Request, for recording the device request

BBM: Bad Block Management

Master device: Master device is a device programmed by customer's development tools. The Master device must be verified by the customer as a correctly configured sample. Data I/O recommends that the person who validates the master device content have software and hardware capabilities to avoid any memory write operations to the Master device during the validation process. Please note that in some environments, boot operations to the device can change image content. If the image content is changed during the validation of the image of a Master Device, development of the BBMS can have a higher risk of failure.

Documents

Documents should be sent to the following e-mail address with the DSR# number in subject.

Specs&SamplesDepartment@DataIO.com

If files are too large to e-mail, they can be uploaded to Data I/O at the following FTP site URL:

<http://ftp.dataio.com/FileUpload/Default.asp?EmailTo=Specs&SamplesDepartment@DataIO.com>

Q1. What knowledge base is needed to create a correct Task on DATA I/O programming system?

To program devices correctly with Data I/O's programming system, capable **engineer(s)** with below knowledge is expected to create/modify Task(s):

- Trained by Data I/O and knows how to work with Data I/O's programming system including hardware and software
- Device specification to be programmed
- End application's specific requirement in detail
- Read the footnotes of the target device and other needed materials (below linked address, etc.)

<http://ftp.dataio.com/FCNotes/Footnote/>

<http://ftp.dataio.com/FCNotes/BBM/>

<http://www.dataio.com/TLHelp/FP/TasklinkforFlashPAK.htm>

Q2. Where do I submit my Device Support Request (DSR)?

You can submit a separate Device Support Request for each device at the following link:

<http://www.dataio.com/Support/DeviceSupport/NewDeviceSupportRequest.aspx>

Please note to include your Data I/O programming system serial number

Q3. What information do I need to provide for a new DSR?

Data I/O requires the following items to create a new algorithm:

- Device specification from the semiconductor manufacturer which should include the following:
 - Ordering information scheme from the device manufacturers specification (for example: device family, pin/package decoding)
 - memory map
 - mechanical package drawing
 - device/package pin mapping
 - waveforms

- AC & DC programming parameters
- samples (>=8pcs or, >=20pcs in case OTP to be supported)
- Data I/O programming system Serial Number

For a Roadrunner DSR Data I/O requires >=20 pcs of taped samples (100pcs for QFP) will be required for mechanical test, or we can't provide the mechanical test result.

Besides the above items, Data I/O may require some extra information and samples for some specific devices.

- **NAND Device:**
 - ✚ Known working existing Bad Block Management (BBM)
 - ✓ BBM name
 - ✚ New BBM development or not sure
 - ✓ Materials listed in the following document.

http://ftp.dataio.com/FCNotes/BBM/Materials_Required_for_BBM_Development.pdf
- **MCU (Microcontroller), Logic Device (especially if a new family)**
 - ✚ Master device and customer data file is very helpful
 - ✚ Technical person contact information
 - ✚ Please indicate in case it's a customized device

Q4. Where should I ship the sample devices for my Device Support Request?

Data I/O will notify you via email where your support for your device will occur. Please ship the master device and blank samples to the address listed in your specific device support request. Our Device Support office addresses are:

| | | |
|--|-------------------------------------|----------------------------|
| To: Data I/O Corporation | Data I/O Electronics (China) | Data I/O GmbH |
| Samples Department | Samples Department | Samples Department |
| Attn: DSR##### | Attn: DSR##### | Attn: DSR### |
| 6645 185 th Ave NE, Suite 100 | 6F, Building #3 | Lochhamer Schlag 5 |
| Redmond, WA 98052 | 188 PingFu Road | 82166 Graefelfing, Germany |
| | Shanghai, China PRC 200231 | |

Remember to specify the DSR number on the package as shown by: DSR#####

Please note that Data I/O considers all materials submitted for DSR as consumables; therefore, Data I/O is not able to return them upon completion of the DSR.

Q5. How will customers know when they will receive their algorithm and/or adapter?

Automated emails will be sent to customers when a DSR is submitted and when the status is changed. The email is sent to the email address filled out on the Device Support Request Form and will contain the DSR web link as below.

http://semi.dataio.com/Semi/DSR_Show.asp?KEY=XXXXXXXXXXXXXXXXXXXX

You may use the link to trace the status of your DSR.

- Check commit date
- Check DSR current status
- Check Adapter name
- Add comments to communicate with Data I/O engineer



Q6. Why is my DSR delayed?

Occasionally Data I/O will need to revise our commit. The reasons may include: vendor schedule change (example: socket arriving late), technical questions need further clarification from either customer or semi-vendor, device samples not working as expected, engineer encountered unexpected difficulty in debugging algorithm, response latency or other. Data I/O's engineer will provide the reason in the comments and inform customer as soon as possible.

To help maintain the schedule and avoid any impact on your production, please

- Provide required materials in time, esp. NAND, MCU and Logic devices
- Provide answer to the technical questions (if any) ASAP.
- Feedback ASAP.
- Track the DSR status and put a comment in DSR if anything special

Q7. How do I expedite my urgent DSR?

- Contact Data I/O's sales team or local distributor for help
- Inquire whether it's possible to pay priority fee to expedite lead time

Q8. How can I get help if there is an issue with my Data I/O system, e.g. programming failure?

Please contact our service team or your local channel for help. Data I/O will need the information listed below:

- Description of the issue and steps to duplicate it
- Eventlog.txt what includes the error message
- Fresh new device, failed device and passed device (if any); 4 pieces each typically
- Data file and exported Task (depends on your platform)
- FDRROOT (if possible)
Could be uploaded at below link if huge
<http://ftp.dataio.com/FileUpload/Default.asp?EmailTo=>
- Contact information and best times to contact you
- Open a new DSR if no one is currently open

Q9. How can I retrieve the event log?

The event log is a txt file stored on the CF card of FlashCORE to record system event/behavior during system operating.

The **EVENTLOG.TXT** file is stored under...\\FDRROOT\\SYSTEM\\

- On FlashPAKIII/RR, it could be gotten from the CF card directly, but note to double press the pause button (||) before unplugging the CF card
- On PS/PSV machine, you can retrieve the EVENTLOG.TXT file by using the tool CollectLog.

Q10. Why does the READ task not work correctly?

There are different possibilities including:

- The device doesn't support read function (the 'Master Device' option is gray)
- Check footnote of the algorithm for any specific information
- The device is secured by password and it needs to be set properly
- The device had been locked out for read
- The TaskLink setting is not set properly. Try the steps listed below:
 - Make a new READ task, enable "Use Special Features from Data Source" if applicable
 - Load this task from TaskLink to CF card/machine

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- Reboot the machine and run the READ task

If this doesn't solve the problem, please send the FDRROOT or Exported the Task to Data I/O.

Q11. What should be noted while making a read Task?

- Check all the program checkbox(s) under "Sectors" tab
- Check the checkbox "Use Special Features from Data Source" if applicable
- Select the option "Verify" process if applicable
- Retrieve the data via TLWin software, instead of directly check image.bin what could be on the CF card

Q12. How to make sure only selected sectors will be programmed?

- Uncheck the checkbox "Transfer data only for sectors to be programmed during Job loading operation" within TLWin options
- Check the checkbox(s) only for the selected sectors within the task and uncheck the other(s)
- Read through the footnotes to see if anything to be noted

Q13. Why does Device ID error happen?

The algorithm and the device are not a match. A different version of the device could have a different ID, even with the same part number. Please following

- Check the device mark and the device specification about the ID
- Confirm the device is properly inserted. Check to make sure the pin1 location is in the right direction in the socket
- Check the event log. Most of the time the expected and real ID will be reported there.

Q14. Why does TLWin's Checksum not match the customer's expectation?

Data I/O and the customer may have a different way to calculate the checksum. The default way Data I/O calculates the checksum can be found in the document listed below:

http://ftp.dataio.com/FCNotes/Footnote/Data_IO_CS_Calculate_Method_AppNote.pdf

There can be special calculations for some dedicated devices, e.g. some Microchip devices. You can contact Data I/O for help.

Q15. What can I do if my programmed devices don't pass functional test (e.g. boot up fail onboard)?

Data I/O does our best to make sure the data is programmed into the device according to the specification. If there is an issue, please check the following items to narrow the root cause:

- Check the data file
- Check the data file content if possible
- Check all settings in TaskLink
- Read the footnotes of this device and BBM user manual in case for NAND device
- Test several other devices and other PCBs, etc.

If this doesn't solve the failure, please send the materials listed below to Data I/O for help

- A new DSR (if no opening DSR yet)
- Master device and the data file
- Failure samples and fresh new samples
- FDRROOT (if possible) or Export the Task (depending on your platform)
- Contact information and times

Q16. When can I get the adapter name for a DSR?

The adapter will be selected before quotation. But in case a new adapter is needed, the name will be generated only after the PO received.

Q17. How can I contact a Data I/O device support engineer?

You may leave comments in your DSR. The corresponding engineers will be notified automatically. The Device Support Engineer can also reply in the comments section of the DSR and you will be notified via email.

Q18. Why is most of the BBM in grey and can't be selected?

A BBM license is needed to unlock them. Please contact your local distributor, Channel or service team.

Q19. How do I work with the TaskLink File I/O tab setting?

The File I/O tab allows you to configure the special translation options for data file, please refer to the related part of below help file.

<http://www.dataio.com/TLHelp/FP/TasklinkforFlashPAK.htm>

Q20. What is the super header?

The eMMC standard 4.3+ feature set introduces new boot area and partitioning features. To use these features a specially formatted image file must be provided and a set of special features values must be correctly set for TLWin. Please refer to below document for further details.

The super header Organization:

<http://ftp.dataio.com/FCNotes/Footnote/Super%20Partition%20Organization.pdf>

1M super header example:

http://ftp.dataio.com/FCNotes/Footnote/1MB_Super_Partition_Header.zip

Super Header Editor Tool:

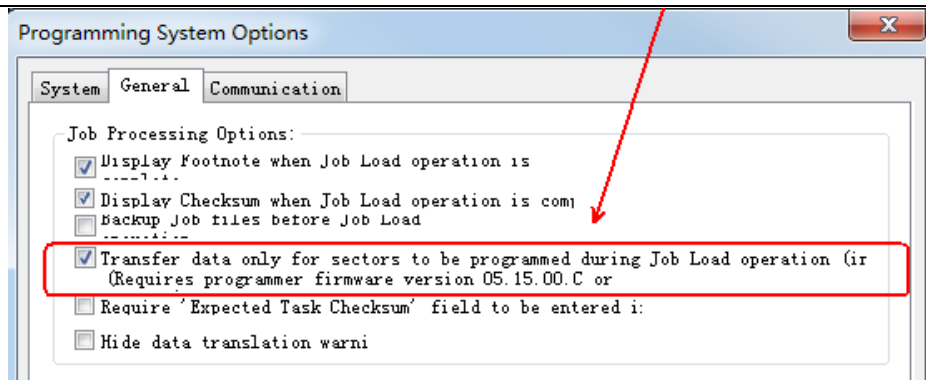
<http://ftp.dataio.com/FCNotes/Footnote/SuperHeaderEditor.zip>

Q21. What is the meaning of "Address to be programmed is over user size B!!!"?

An eMMC sector table has a reserved space for user area, boot partition and the Data I/O super header. The algorithm does the border check and will throw an error if you are trying to program the non-existed area, E.g. trying to program the address over the user.

Once this happen, please

- Check the data file. If the data file size is over the user area size (in case no super header)
- The 'automatic RAM fill' within 'File I/O' table should be kept as 'Default'
- Check TaskLink Setting. If the compression (also called partial downloading) is checked

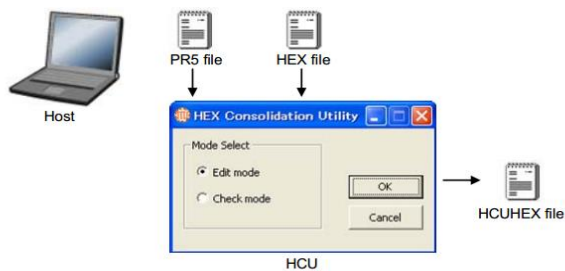


Q22. Are there any special notes needed for Renesas/NEC devices?

Typically Data I/O will write a note about these devices. Please check the footnotes listed under the device support on our website or in TLWin. The footnote instructions should be followed to make sure the devices will be programmed correctly.

- Please use NEC's HEX Converter utility to generate Consolidated HEX file. The tool requires the device parameter file (pr5) and the customer file (HEX) as input.
(<http://www.renesas.com/products/tools/downloads.jsp> , search for HCU_GUI).
- Search for a pr5 file. Input your device name under window: Device-/Parameter-/Library file finder.
(<http://www2.renesas.eu/products/micro/download/>).

The algorithm could use the option settings from the data file and but not the options set on the special feature.



| Date | History |
|------------|----------------------|
| 2015/09/24 | Initial release V1.0 |
| 2016/05/20 | V3.0 |
| 2016/05/24 | V4.0 |
| 2016/08/09 | V4.1 |
| 2016/09/22 | V4.2 |