Data I/O Device Support FAQ

Glossary of Terms

DSR: *Device Support Request*

SR: *Service 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

Please send documents to the following e-mail address with the DSR##### number in the subject line:
Specs&SamplesDepartment@DataIO.com
If file(s) are too large for e-mail, then please upload to Data I/O secure share:
https://www.dataio.com/upload/ (fill the employee field as specs&SamplesDepartment@DataIO.com)
Or alternatively, please upload to Data I/O public share (non-secure):
http://ftp.dataio.com/FileUpload/Default.asp?EmailTo=*Specs&SamplesDepartment@DataIO.com*

Q1. What knowledge do I need to properly create Tasks on a DATA I/O programming system?

To properly create a programming job or task with Data I/O's programming system, you should have/be:

- Trained by Data I/O and knows how to work with Data I/O's programing system including hardware and software
- 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
- Thorough familiarity with device specification of the chip to be programmed
- Thorough familiarity with end application's specific requirement in detail

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

Please submit a separate DSR for each device on one platform (FlashPAK III, PSV3000/3500/5000/7000(FCIII/LX) at:
http://www.dataio.com/Support/DeviceSupport/NewDeviceSupportRequest.aspx
Please note the DSR cannot progress without the Data I/O programming system serial number (SN).

Q3. What materials should I provide for a new DSR?

Data I/O needs the following items to support a new device:

- 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
- command table, waveforms
- AC & DC programming parameters, etc.

- Samples (>=8pcs or, >=20pcs in case OTP/HIC to be supported)
  - >=20 pcs of taped samples (100pcs for QFP) for RoadRunner support, else cannot complete mechanical performance test.
  - >=40 pcs of taped samples for PSV2800 support
- Data I/O programming system Serial Number

For some specific devices, Data I/O may require extra information and samples.

- **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_Developement.pdf
- **MCU (Microcontroller), Logic Device, etc. (especially if a new family)**
  - Master device and the data file
  - Technical contact window
  - Specific information if anything special (ex. custom device)

Q4. Where should I ship samples for my DSR?

Data I/O emails you the DSR development region/location. **Please ship them to the address listed in your specific DSR to avoid delays** or, you can also ship to our office corresponding to your continent:

To: Data I/O Corporation
Samples Department
Attn: DSR#####
6645 185th Ave NE, Suite 100
Redmond, WA 98052
Tel: +1 425-881-6444

Data I/O Electronics (China)
Samples Department
Attn: DSR#####
6F, Building #3
188 PingFu Road
Shanghai, China PRC 200231
Tel: +86 (0)21-58827686

Data I/O GmbH
Samples Department
Attn: DSR#####
Am Haag 10
D-82166 Graefelfing, Germany
Tel: +49 (0)89-85 85 8-0

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. Why do I need to send samples for support or troubleshooting?

To ensure expected behavior and optimal performance, Data I/O must reproduce the exact same environment that you are currently using. For a new DSR, Data I/O uses the samples for solution evaluation and support validation (even supported devices may have variation in dimensions or capacity compared to other samples of the same part number).

Q6. What is a programming spec?

A programming specification is the document that includes all the required information to access & operate the internal non-volatile memory. It covers the hardware connection, interface, communication protocol, command(s), operation parameter(s), memory address, waveform, etc. in detail for Data I/O to implement the hardware & software accordingly. Programming spec may be included within a datasheet or separate document, or the combination of several documents.

Q7. What file format(s) can be supported?

For supported file formats, please refer to TaskLink -> Help -> Documentation -> File Formats Reference Document. Data I/O assumes the data file is provided within the supported format. If other file format(s) require support during development, then Data I/O must add extra charge and lead time. For file format(s) not supported yet, Data I/O requires detailed documents on the file format with sample data file(s).

Q8. How will I know when I can receive the algorithm and/or adapter?

When a DSR is submitted (and when status changes), Data I/O sends an automated email to the address provided on the DSR Form with the DSR web link as below.

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

Use the link to trace DSR status and communicate with Data I/O.

- Check commit date
- Check DSR current status
- Check Adapter name, etc.
- Check comments
- Add comments to communicate with us directly

Q9. Why is my DSR delayed?

Occasionally Data I/O needs to revise its planned schedule due to vendor schedule change (ex. socket arrived late); technical questions needing further clarification from customer or semi-vendor, device samples not working as expected; engineer encountered unexpected difficulty in algorithm debugging; response latency; or other. Data I/O engineer will explain in the comments and inform customer as early 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
- Answer technical questions ASAP (if any).
- Feedback ASAP.
- Track the DSR status and put a comment in DSR if anything special

Q10. How can I expedite my urgent DSR?

- Contact Data I/O's sales team or local distributor for help
  https://www.dataio.com/Contact-Us/Representative-Search
- Inquire if it's possible to pay priority fee to expedite lead time

Q11. How can I get help if there is an issue with my Data I/O system, e.g. programming failure?

Please contact your local channel or issue a SR within our MAX system to contact service team for help. Data I/O needs:

- Exact description (yield, scenario, etc.) of the issue and steps to duplicate
- Eventlog.txt that includes the error message
- Data file and exported Task (depends on your platform)
- FDRROOT (if possible)
- Fresh new devices, failed devices, and passed devices (if any); 4 pieces each typically
- Contact information and best time to reach you
- Open a new DSR if none is currently active

Q12. What can I do if the programed devices don't pass functional test (e.g. boot up fail onboard)?

Data I/O does its best to ensure data is programmed into devices according to specification. For issues, please check:

- Check the data file
- Check the data file content (if possible)
- Check all TaskLink settings
- Read the device footnotes and BBM user manual (if NAND device)
- Test several other devices and other PCBs, etc.

If this doesn't solve the failure, please issue a SR within MAX and provide materials listed below

- Exact description (yield, scenario, etc.) of the issue
- Eventlog.txt that includes the programming log
- Data file for programming and exported Task (depends on your platform)
- FDRROOT (if possible)
- Fresh new devices, failed devices, and passed devices (if any); 4 pieces each typically
  - You can read the passed & failed samples on our programmer and send the read-out data in advance
  - Use "BBM_ReadBack" for NAND device reading
    http://ftp.dataio.com/FCNotes/BBM/BBM_ReadBack%20User%20Manual.pdf
- Contact information and available time window
- A new DSR (if no active one)

Q13. 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. It's named as **EVENTLOG.TXT** what 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.

Q14. Why does the READ task not work?

- The device doesn't support read function (the 'Master Device' option is disabled/gray)
- Check algorithm footnote for any specific information
- The device is secured by password and needs to be set properly
- The device is locked 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
  - Reboot the machine and run the READ task

Q15. 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 TaskLink, instead of directly check image.bin that could be on the CF card

Q16. How to make sure only selected sectors are programmed?

- In TaskLink options, uncheck "Transfer data only for sectors to be programmed during Job loading operation"
- Enable the checkbox(es) only for the selected sectors within the task; uncheck the other(s)
- Read through the footnotes to see if anything is to be noted

Q17. Why does Device ID error happen?

Typically the algorithm and device don't match (ex. a different version of the device may have a different ID, even with the same part number). Please check the following:

- Check the device mark and the device specification about the ID
- Confirm device is properly inserted. Check to ensure pin1 location is in the proper direction in the socket
- Check the event log. The expected and real ID are typically reported there.

Q18. Why does TaskLink's Checksum not match my expected value?

You may calculate the checksum differently from TaskLink. The default way that Data I/O calculates a checksum is described in the following document:
http://ftp.dataio.com/FCNotes/Footnote/Data_IO_CS_Calculate_Method_AppNote.pdf
Some dedicated devices may have special calculations (ex. some Microchip devices). Please contact Data I/O for help.

Q19. When can I get the adapter name for a DSR?

The adapter is selected before quotation. If a new adapter is needed, the name is generated after the PO is received.

Q20. How can I contact a Data I/O device support engineer?

Please leave comments in your DSR. The corresponding engineer(s) are notified automatically. The Device Support Engineer can also reply in the comments section of the DSR and you will be notified via email.

Q21. 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, Sales Channel, or service team.

Q22. How do I work with the TaskLink File I/O tab setting?

The File I/O tab allows you to configure special translation options for a data file, please refer to the following help file:
http://www.dataio.com/TLHelp/FP/TasklinkforFlashPAK.htm

Q23. What is the super header?

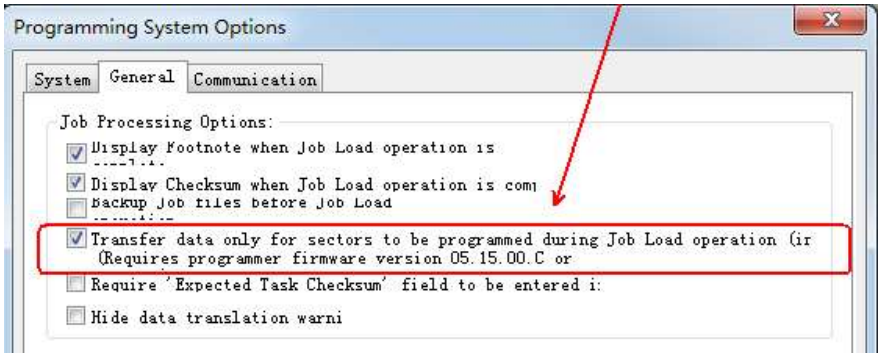
The eMMC standard 4.3+ feature set introduces new boot area and partitioning features. To use these features, a specially formatted image file must be provided and a set of special features values must be correctly set for TLWin. Please refer to below document for further details.

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

Q24. 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 throws an error if you are trying to program the non-existed area (ex.. trying to program the address over the user). Once this happens, please:

- Check the data file: if the size exceeds the user area size (if 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

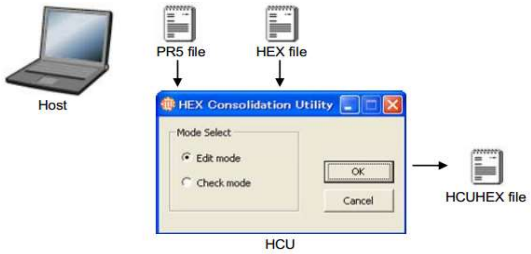


Q25. Are there any special notes needed for Renesas/NEC devices?

Typically Data I/O includes a note about these devices. Please check the footnotes listed under the device support on our website or in TaskLink. Follow the footnote instructions to ensure devices are 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, 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
2018/03/22	V4.3
2020/06/12	V4.4
2020/10/27	V4.5
2021/11/24	V4.6
2025/05	V4.7, Added the telephone number, etc.