

Technical Specification

Meteor Print Controller Card

- All printhead-independent electronics is located on a Meteor Print Controller Card (PCC).
- Eurocard size (100mm x 160mm).
- Suitable for supplying print data to large arrays of printheads. Each PCC can support 6 heads.
- Any number of Meteor cards can be synchronised (sub pixel timing accuracy between all outputs).
- A head driver card is required for interface to each printhead.
- Each PCC receives all print and communication data through USB.
- USB is easy to expand. Many Meteor cards can share one USB controller when USB hubs are used. A USB cable must be less than 5m long but USB hubs can extend this up to 5 times (25m total)
- Most PCs have at least one USB 2.0 controller as standard capable of <50 Mbytes/sec continuously variable data to a rack of Meteor PCCs. PCs with two or more USB2 controllers are capable of 60Mbytes.sec continuously variable data to a rack of Meteor PCCs. A rack of Meteor PCCs can be supplied by multiple PCs whilst maintaining synchronisation of printing.



5 connectors on PC side of PCC shown above from left to right:

- Blue synchronisation connector for daisy chain to other Meteor PCCs
- Peripheral I/O: 4 input, 4 output
- Encoder and Product Detect / Home signal
- USB 2.0 (with LEDs beneath to indicate PCC status)
- Power: 48V DC (amount of current depends on number and type of heads powered)



6 connectors on print head side of PCC shown above:

- Ethernet Cat 5 cables (used to supply power, peripheral I/O and print data to Meteor Head Driver Cards).

Meteor Head Driver Cards

- All printhead-specific electronics is located on a Meteor Head Driver Card (HDC).
- Usually the head driver card connects directly to the printhead and supplies one printhead only.
- Head driver cards for small jetting assemblies (128 nozzles each for example) may support multiple jetting assemblies.
- Sometimes a flexible adapter is practical, separating the head driver card from the printhead to improve mounting options. Often the HDC is designed to attach to the printhead.
- Head Driver Cards also provide 3 user-definable additional I/O, for controlling peripheral systems near the printheads (header tanks, temperature sensors etc).
- Up to six head driver cards can be connected to each Meteor print controller card via standard Cat 5 Ethernet cables, which can be up to >10m long.
- Meteor head driver cards for printhead types that have no in-built fire pulse generation do not require separate fire pulse generation boards. These Meteor HDCs have unique digital pulse shaping functionality within them.
- Digital pulse shaping allows optimisation of pulse shapes and the use of multi-pulse-per drop options

Meteor Software

A Microsoft Windows DLL is provided with a demo application and sample user interface for those who wish to develop their own application software. The API is fully described in the Meteor User Manual. Requests for additional API commands are possible to suit specific application requirements.

TTP can also assist with recommending Meteor-compatible third-party printer application software and/or developing custom printer application software.

Some tasks undertaken by Meteor software include:

- Separating colour plane bitmaps into data for each printhead.
- Handling the overlap of printheads within an array.
- Pre-storing backgrounds and images
- buffering first-in-first-out data
- superimposing variable data over pre-stored fixed image data
- Synchronising printhead firing.
- Configuring the print controller cards, head driver cards and printheads.
- Printhead temperature control
- Peripheral I/O control.
- Document and printhead status monitoring.