



Management Interface Use Cases for Single Pair Ethernet

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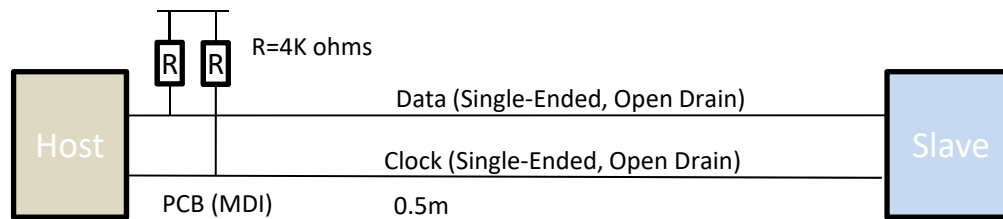
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Background

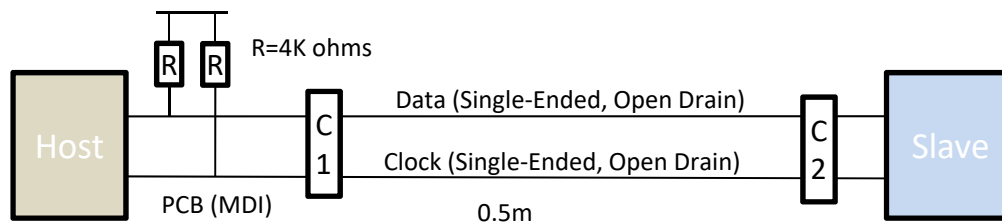
- This deck presents Single Pair use cases that will illustrate I2C like applications for 10SPE

I2C Use Cases

- Chip-to-Chip: On the SAME board (FR4 Type) up to 0.5m. board
 - Interface configuration pre-determined and selected on reset. Does not change for life of the product



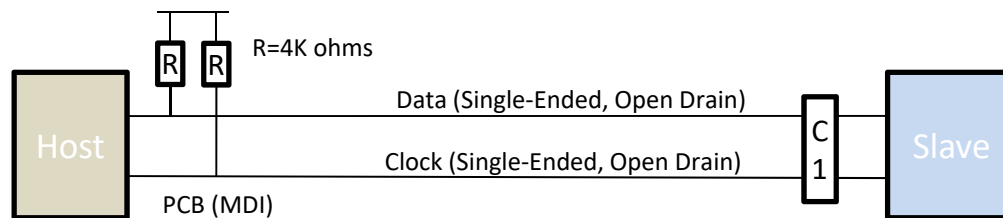
- Chip-to-Chip: Board-to-Board over Backplane up to 1m
 - Interface configuration can not be specified at reset – modules can be used during system operation
 - Ability to dynamically identify interface type is desired



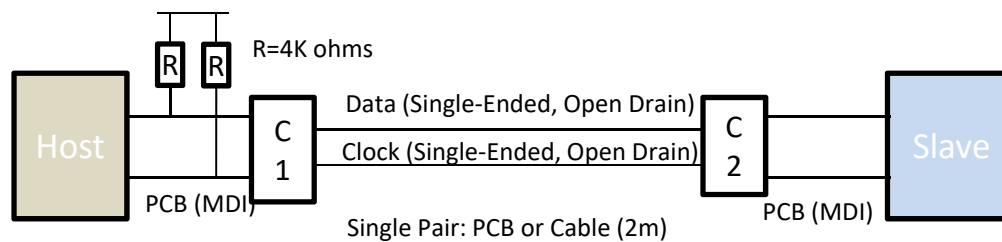
10M Single Pair Ethernet

I2C Use Cases

- Chip-to-Module/Plug (Fiber/Copper) up to 0.5m
 - Interface configuration can not be specified at reset – modules can be dynamically changed during system operation



- Other Examples using up to 2m Cable
 - Host-to-FAN Tray
 - Host-to-Power Supply
 - Interface configuration can be pre-determined on reset and or hot swappable,
 - Ability to dynamically identify interface type



Feature comparison

I2C	10SPE	Comment
Single Ended Data/Clock	Differential Pair (Data only)	Option for SPE to support Single Ended and Differential Pair
DC coupled 4.7K pullup termination	AC Coupled	Option for SPE to support DC and AC coupling
Chip-to-Chip on same PCB	Chip-to-Chip on same PCB	0.5m Link Segment
Chip-to-Chip on different PCB via backplane/connector	Chip-to-Chip on different PCB via backplane/connectors	1m Link Segment
Chip-to-Module on same PCB with connector	Chip-to-Module on with connector	0.5m Link Segment
Chip-to-Chip: Board to Board via Twinx Cable	Chip-to-Chip: Board to Board via Twinx Cable	2m Link Segment

Summary: Management Interface

- 2-wire: Reduce inter-connect
- At least 10Mb/s (up to 100Mb/s should be considered for future)
- Ethernet based – one common driver
- Switched Point-to-Point full duplex – for BW or hot-swappable devices
- Interface can be on the same PHYSICAL board or across backplane or twinax cable with at least two connectors

- Additional consideration
 - Operate over current I2C Pins - this is critical for wide adoption
 - 10SPE will have to co-exist with I2C in a same system
 - 10SPE with ability to support “Link Segment” compatibility with I2C will enable faster SPE adoption

THANK YOU!