New MPGD Connector

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Motivation for new connector

- Pansonic 130 pin connectors not produced any more
- Pansonic 130 pin only available in large Qty
- Pansonic 130 pin has only 2 GND pins

- HRS 140 pin very similar, in production
- HRS 140 pin available in single Qty
- HRS 140 pin has GND pins every 10 position
- HRS 140 pin allows for new functionality: 12 spare pins
Lateral dimensions FX10A-140S

Fits on 50 mm wide hybrids
Height dimensions
HRS Manufacturer Specs
http://www.hirose-connectors.com

FX10 series  0.5mm pitch

ICR Insertion Loss Ratio meets IEEE 802.3ap for 15+ Gbps
New Hirose connector as from VMM-128 v3

Altium design A.Rusu

Rui will start new connector on MPGD’s when adapters for transition period become available
Adapters for transition time

Flex PCBs to be designed (A. Rusu) for both versions
New Hybrid with HRS plugged on detector with old Panasonic connector
Old Hybrid with Panasonic plugged on detector with new Hirose connector
New functionalities

a.) geographic address position

Will allow to read the geographical position of a hybrid along a detector frame

Readout via slow controls SRS

Example Position = 10 0001
New functionalities

b.) optional I2C devices on detector

Will allow to place and use intelligent sensors on the detector.

I2C device control and readout via slow controls SRS.

6 x I2C support pins on left side, viewed from top.

6pin connector plugin

I2C device

VMM hybrid

FPGA

+2V5

Detector Frame

Detector side

TOP

VMM3,

GND

Ch 124

Ch 126

I2C VCC

Signal out

SCL

GND

Ch 125

Ch 127

I2C GND

Signal in

SDA

S-in

S-out
Examples  I2C chips for potential use on detectors

• ROHM color sensor **BH1745NUC**
• Sensirion **SHT25**  Humidity and Temperature sensor
• Analog Devices **ADT7301ARTZ-500RL7** temperature sensor
• Vishay Proximity and ambient light detector **VCNL4010**
• Texas Instruments LED driver (up to 11 in series) with ambient sensing **LM3530**
• MAX ambient light sensor 0.025 Lux to 104,448 Lux **MAX44007**