

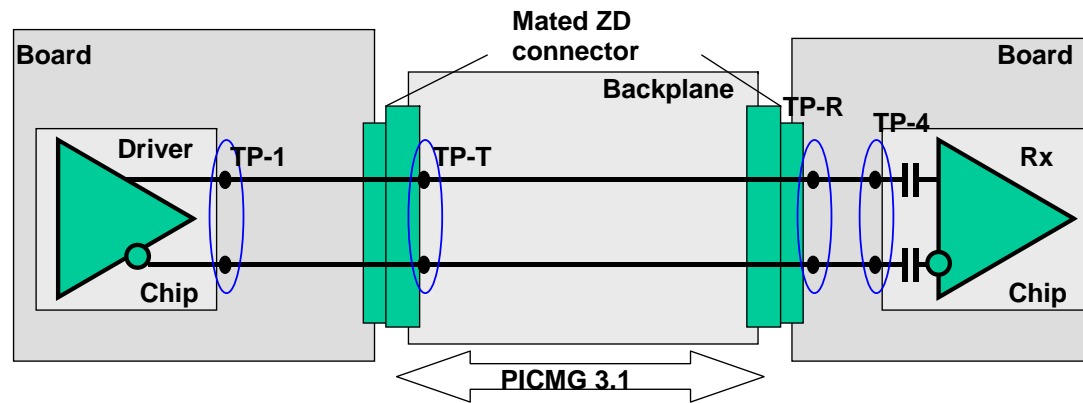
# What we can learn from PICMG 3.1

Schelto van Doorn  
Intel

# General Considerations

- The receiver device shall accommodate the coupling capacitors.
- Unused channels shall be terminated
- To avoid permanent damage to the input and output drivers, the absolute maximum voltage shall not exceed 1.6V
- Use MDIO for E-keying and shelf management

# PICMG 1G Test Points



- The testpoints TP-T and TP-R are mandatory compliance points. The testpoints TP-1 and TP-4 are informative.
- The values for the TP-T are based on the IEEE 802.3z 1000BASE-CX when converted from 150Ω to 100Ω differential.
- The system implementer is required to provide additional margin at TP-1 to ensure compliance at TP-T and ensure that the additional losses from TP-R to TP-4 are accounted for.
- For test purposes the TP-T and TP-R are measured through a mated pair.

# PICMG 1G

- The values for Tx and Rx were carefully chosen at the time to accommodate as many as possible suppliers and still guarantee interoperability.
- The coupling caps are 10nF max.

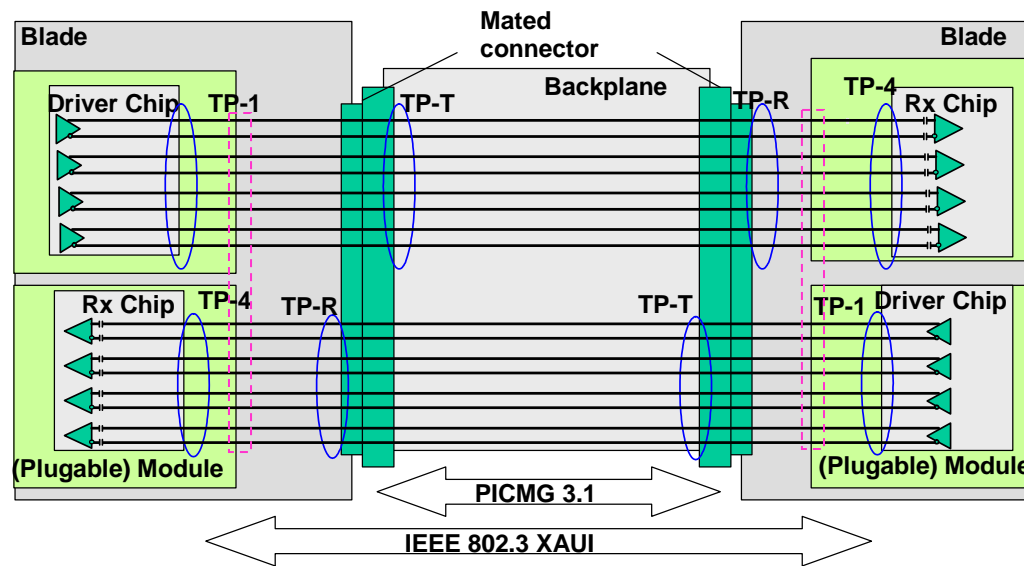
# PICMG 1G Transmitter at TP-T

Description	Value		Units
	Ethernet	Fibre Channel	
Data rate	1000	1600*	Mb/s
Nominal signaling speed	1250	2125*	MBd
Clock tolerance	$\pm 100$		ppm
Differential output amplitude(p-p)	1350 - 750		mV
Return loss	15		dB
Impedance at connection (TP-T)	$100 \pm 30$		$\Omega$
Impedance at termination (TP-1)	$100 \pm 10$		$\Omega$

# PICMG 1G Receiver at TP-R

Description	Value		Units
	Ethernet	Fibre Channel	
Data rate	1000	1600*	Mb/s
Nominal signaling speed	1250	2125*	MBd
Clock tolerance	± 100		ppm
Sensitivity (p-p)	1350 - 200		mV
Differential skew	175		ps
Differential return loss	15		dB
Common mode return loss	6		dB
Input impedance, each signal to ground with a 50 Ohm resistor			
TDR rise time TP-R	85		ps
At connection TP-R	100 ± 30		Ω
At termination TP-4	100 ± 10		Ω

# PICMG 10000Base-BX



- Backplane simulations showed that at a Baud rate of 3.125G, regular FR4 was tight. A better material like NELCO 5000 was recommended.
- A removable card connector was not considered at the time.
- 470pF max Rx coupling cap.