

In-Band Impairment Detector

(Preliminary and Patent Pending)

Product Description

Agiltron's impairment detector provides real-time and in-band monitoring of parameters critical to channel performance, including optical signal to noise ratio (OSNR) and impairment due to polarization mode dispersion (PMD). An optional feature offered is the quantitative assessment of the differential group delay (DGD) caused by PMD. These parameters are acquired through examining the autocorrelation of the optical signal and the cross-correlation between pairs of orthogonally polarized signal fields.

It is well known that the presence of PMD can make OSNR measurement inaccurate and misleading. Agiltron's solution decouples these two physical quantities and provides both impairments for better assessment of channel performance. The fast DGD measurement also enables feed-forward PMD mitigation schemes.

Constructed with an Agiltron's fast and highly stable electro-optic material, the device can satisfy the requirements in a board range of applications. It is bit-rate independent and suitable for both intensity and phase modulation schemes, including differential phase shift keying (DPSK). Used for in-band channel monitoring, it can elevate network management to a new level of ease, sophistication and confidence at a low cost.

Performance Specifications

In-Band Impairment Detector	Min	Typical	Max	Unit
Wavelength		1250 ~ 1650		nm
OSNR Range	10		25	dB
PMD Impairment Range	2		15	dB
DGD Resolution*	2		4	bit
OSNR Refresh Time		250		μs
DGD Refresh Time		750		μs
Operating Temperature		-5 ~ 70		°C
Storage Temperature		-40 ~ 85		°C
Power Supply		5		V
Interface		Custom		

*Higher DGD resolution is available upon request.

Features

- Fast OSNR measurement
- PMD Impairment Meas.
- DGD measurement
- Bit-rate Independent
- OOK and PSK Compatible

Applications

- In-band channel monitoring
- Polarization mode dispersion compensation