

# 'Linked by Light'

## Evaluating Hi-Definition Video Transmissions

### Optical Transceiver and AOC Transmission Quality

BERTWave MP2100B



Hi-definition video technologies commonly used by terrestrial digital broadcast cameras and TVs are also used by security monitoring cameras, medical imaging equipment, etc.

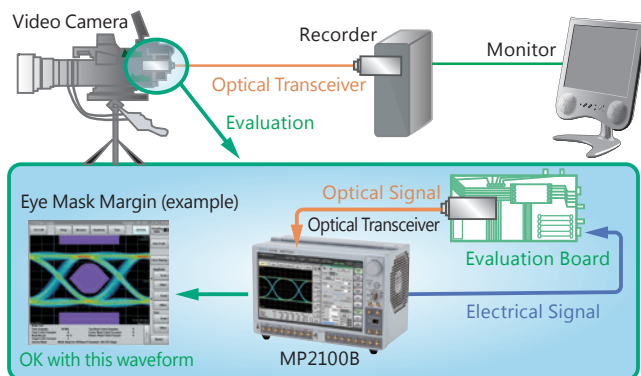
High-speed serial interfaces, such as HD-SDI, 3G-SDI, etc., are used by this equipment to transmit uncompressed video signals to external equipment such as video recorders. Additionally, fast transmission of hi-definition video both between and within equipment requires high-quality transmission methods less of bit errors.

The currently highest-definition 4K ultra-HD video technology (SuperVision) as well as the next-generation 8K ultra-HD now in development require even faster and higher-quality transmission methods to transmit uncompressed hi-definition video data.

Rather than using electrical interfaces for these types of hi-definition transmissions between and within equipment, new transmission methods using optical interfaces are being investigated. In particular, optical fibers using optical transceivers, such as SFP and SFP+ modules, are being examined for transmissions between equipment, while transmission methods using Active Optical Cable (AOC) are being examined for transmissions within equipment.

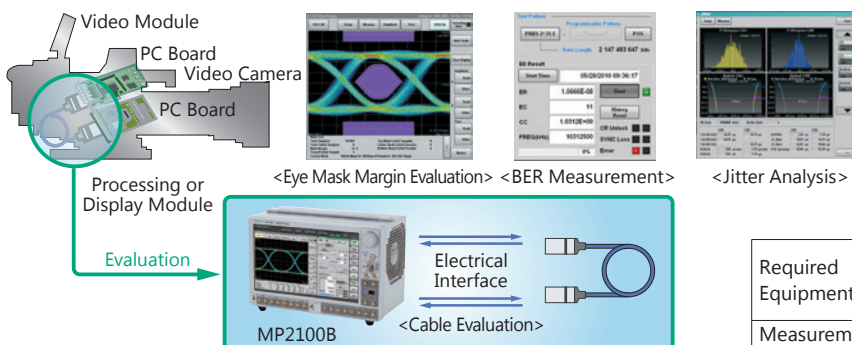
Evaluation of optical transceivers and AOC to assure transmission quality requires BER measurements, Eye Pattern analyses, and Eye Mask Margin evaluation.

#### Evaluating Transmissions Between Equipment (Optical Transceiver)



Required Equipment	Pulse Pattern Generator (PPG), Sampling Oscilloscope
Measurements	Eye Pattern, Eye Mask Margin, Jitter

#### Evaluating Transmissions within Equipment (AOC)



Required Equipment	Pulse Pattern Generator (PPG), Error Detector (ED), Sampling Oscilloscope
Measurements	BER, Eye Pattern, Eye Mask Margin, Jitter

## Simultaneous BER Measurement and Eye Pattern Analysis



**BERTWave**  
MP2100B



**All in One**

All-in-one built-in BERT and oscilloscope

**Jitter**  
**1**  
ps rms

Pulse Pattern Generator (PPG)  
1 ps rms Jitter

**4ch**  
**BERT**

Built-in 1ch to 4ch 12.5 Gbit/s BERT

**Sensitivity**  
**10**  
mVp-p

Error Detector (ED)  
10 mVp-p Sensitivity

### Short Measurement Time

All-in-One Simultaneous 4ch BER Measurement and Eye Pattern Analysis  
Simultaneous 4ch BER Measurement  
Fast Eye Mask Test  
Fast BER Test

### Full Analysis Functions

Wide Operating Frequency Band  
Electrical/Optical Jitter Analysis  
Clock Recovery

### No Wasted Equipment Investment

Easy Measurement System Configuration  
Multichannel BERT

## Features

- All-in-one simultaneous BER measurement and Eye Pattern analysis
- Four times faster remote control than previous models
- 10 times better BER measurement time resolution (10 ms) than previous models
- 4ch simultaneous independent BER measurement
- Fast sampling speed
- Automatic mask margin test
- Stable extinction ratio and mask margin measurement due to high-stability LPF

