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)

<table>
<thead>
<tr>
<th>Required Equipment</th>
<th>Pulse Pattern Generator (PPG), Error Detector (ED), Sampling Oscilloscope</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurements</td>
<td>Eye Pattern, Eye Mask Margin, Jitter</td>
</tr>
</tbody>
</table>

### Evaluating Transmissions within Equipment (AOC)

<table>
<thead>
<tr>
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<th>Pulse Pattern Generator (PPG), Error Detector (ED), Sampling Oscilloscope</th>
</tr>
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<tbody>
<tr>
<td>Measurements</td>
<td>BER, Eye Pattern, Eye Mask Margin, Jitter</td>
</tr>
</tbody>
</table>
Simultaneous BER Measurement and Eye Pattern Analysis

**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

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**MP2100B**

- All-in-one built-in BERT and oscilloscope
- Built-in 1ch to 4ch 12.5 Gbit/s BERT
- Pulse Pattern Generator (PPG)
  - 1 ps rms Jitter
- Error Detector (ED)
  - 10 mVp-p Sensitivity

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**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

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**All in One**

**4ch BERT**

**Jitter**

**Sensitivity**

**BER**

**Eye mask**

**Eye Pattern**