

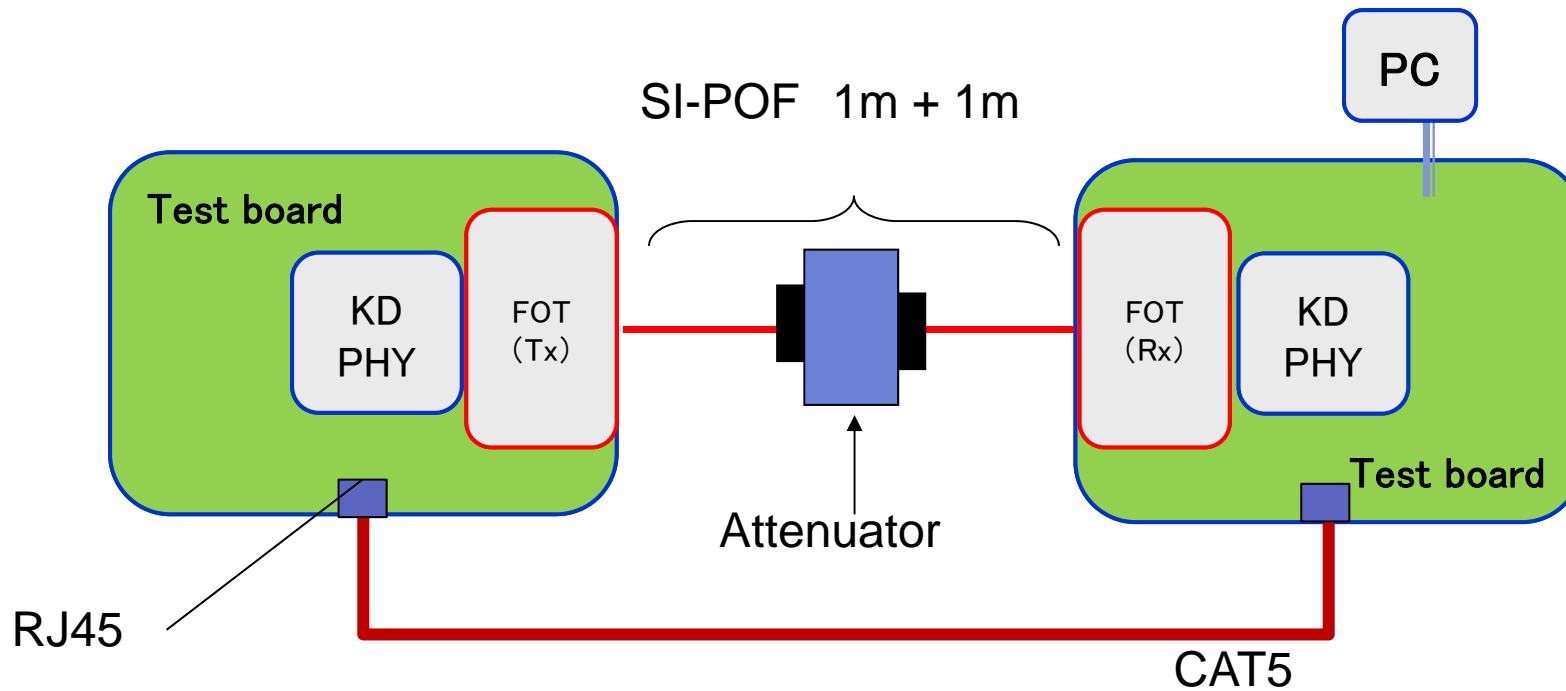


# Bit Error Rate Study

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**Schematic diagrams for BER measurement set up**

## Temperature dependence of BER of KD1001 test board

	Min input level of sensitivity (dBm) @ Test result	Total bit numbers Rx on [PCB.CTRL]	BER	KDPOF BER Spec: $10^{-10}$
-40 °C	-19.4675	$2.09 \times 10^{12}$	$6.876132 \times 10^{-11}$	OK
+25°C	-20.7894	$5.57 \times 10^{12}$	$3.321786 \times 10^{-11}$	OK
+85 °C	-20.3775	$2.39 \times 10^{12}$	$9.639134 \times 10^{-12}$	OK

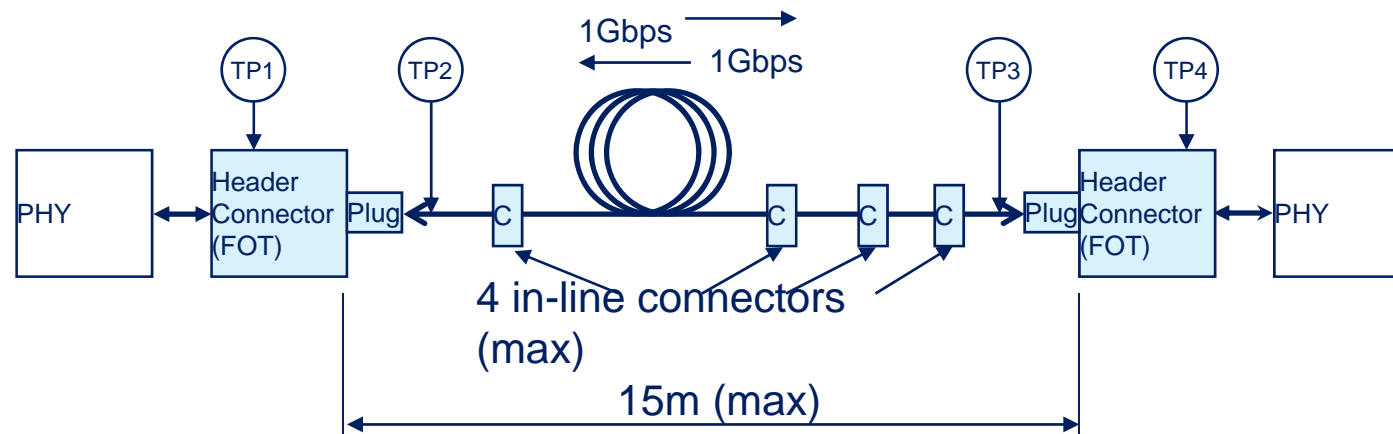
## Bit Error Requirement

Presented at Norfolk Meeting

- Data rate: 1 Gbps
- Bit Error Rate:  $10^{-14}$
- Length: 15 m, max
- In-line Connections: 4, max

Control System (ex. *FlexRay*):  
 $BER\ 10^{-12}$  @10 Mbps -->  $BER\ 10^{-14}$  @1 Gbps

Infotainment system:  
 $BER\ 10^{-10}$  @1 Gbps



*Bit error must be 0 (zero) for Automobile safety system for 10+ years even if IEEE specifies BER as **better than or equal to  $10^{-12}$**  at the MAC/PLS service interface*