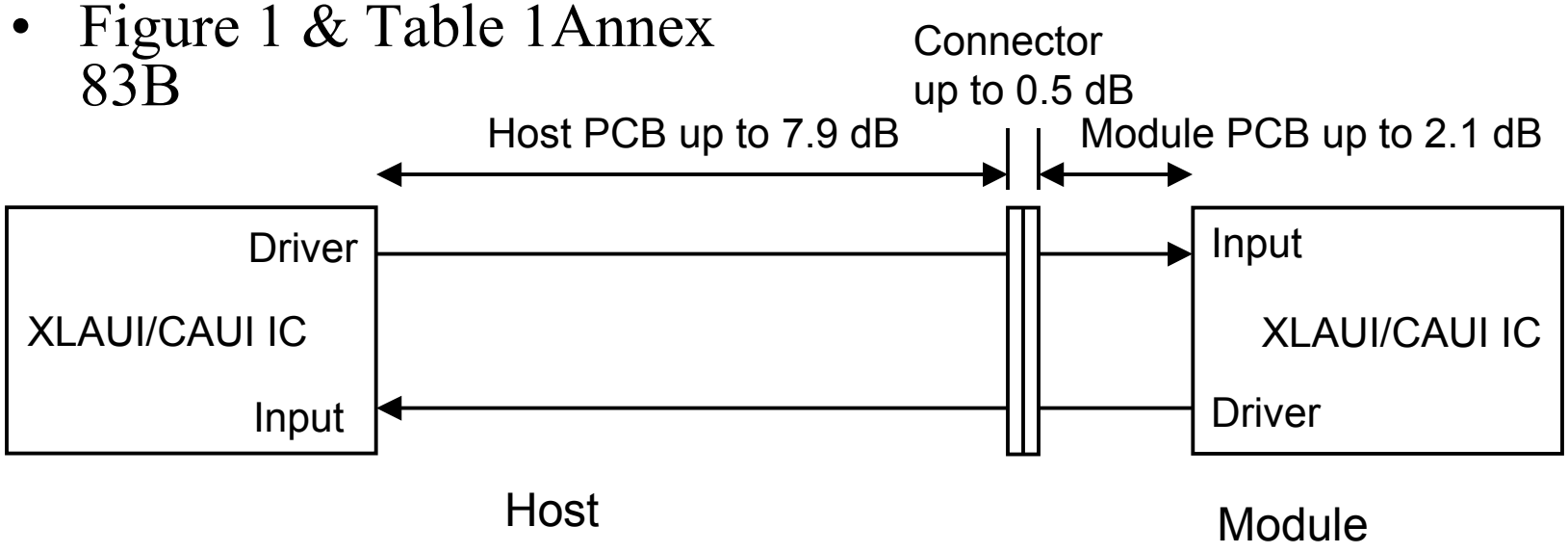
Annex 83B Chip to Module 40 Gb/s Attachment Unit Interface (XLAUI) and 100 Gb/s Attachment Unit Interface (CAUI)

Loss budget for Chip-Module nAUI

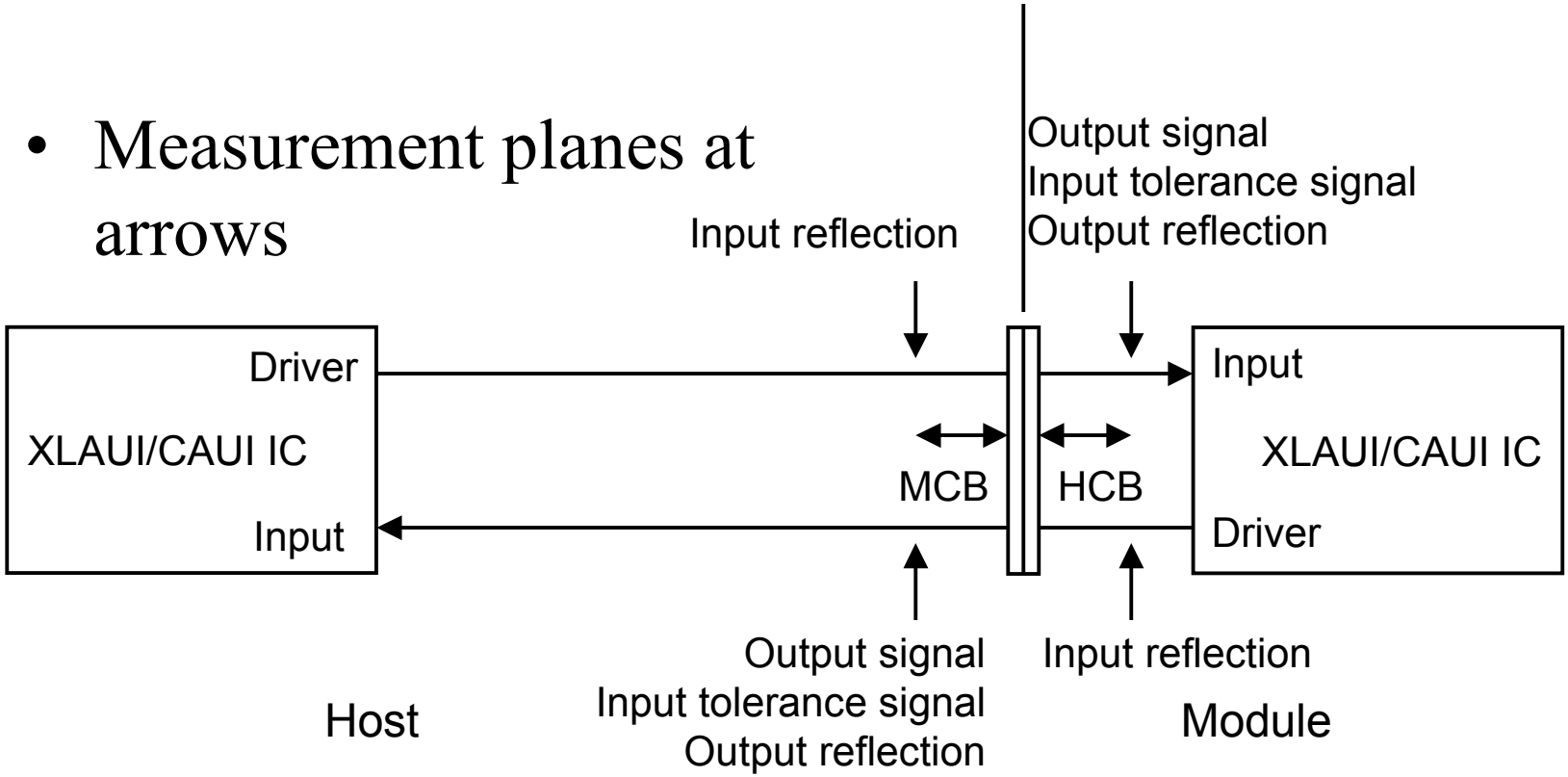
- Figure 1 & Table 1Annex 83B



Section	Loss budget (at 5.5GHz)
Host XLAUI / CAUI Component to Connector	7.9dB
Connector Loss	0.5dB
Connector to Module XLAUI / CAUI Component	2.1dB

Compliance points for nAUI with connector

- Measurement planes at arrows



Reference	Compliance Point	Value
Module Input Reflection SDD11	MCB Input	-12+2sqrt(f), 0.01 – 4.1G -6.3 + 13log10(f/5.5), 4.1 – 11.1G
Module Input Tolerance Signal	HCB Output	See **83A.5.2.2**
Module Output Signal (Electrical Tx)	MCB Output	See next slide
Module Output Reflection (SDD22)	MCB Output	-12+2sqrt(f), 0.01 – 4.1G -6.3 + 13log10(f/5.5), 4.1 – 11.1G

Clarify figure and naming conventions relative to compliance points and reference signals using PPI (86) conventions

Transmit Module Output

Parameter	Value	Units
~~Signaling speed per lane (range)~~	~~10.3125 ± 100 ppm~~	~~GBd~~
Single-ended output voltage range maximum minimum	 4.0 –0.4	 V V
Maximum Differential Output Voltage, peak-to-peak	760	mV
Maximum Termination Mismatch at 1MHz	5	%
Maximum Output AC Common Mode Voltage, RMS	15	mV
Minimum Output Rise and Fall time (20% to 80%)[a]	24	ps
~~Differential Output S-parameters~~	~~see 83A.3.3.3~~	~~dB~~
~~Common Mode Output S-parameters~~	~~see 83A.3.3.4~~	~~dB~~
Maximum Total Jitter[b]	0.40	UI
Maximum Deterministic Jitter[c]	0.25	UI
Transmitter eye mask definition X1[d]	0.20	UI
Transmitter eye mask definition X2[d]	0.50	UI
Transmitter eye mask definition Y1[d]	136	mV
Transmitter eye mask definition Y2[d]	380	mV

[a] Rise/Fall time measurement methodology defined in 83A.4.4
[b] Total Jitter Measurement Methodology defined in section 83A.5.2
[c] Deterministic Jitter Measurement Methodology defined in section 83A.5.2
[d] Transmitter Eye Mask illustrated in Figure 83A–6

Notes updated per 83A comment resolution

De-emphasis states measured at module output = off, min3.9dB

Reference	Compliance Point	Value
Host Output Signal Specs	HCB Output	See next slide
Host Output Reflection SDD22	HCB Output	-12.5 dB from 0.1 – 5GHz -23.25+8.75*(f/5) from 5 – 11.1GHz
Host Input Reflection SDD11	HCB Input	-12.5 dB from 0.1 – 5GHz -23.25+8.75*(f/5) from 5 – 11.1GHz
Host Input tolerance signal	MCB Output	See **83A.5.2.2 with modifications to stressors so that they correspond to the module output spec on previous slide**

Clarify figure and naming conventions relative to compliance points and reference signals using PPI (86) conventions

Host Output

Parameter	Value	Units
Signaling speed per lane (range)	10.3125 ± 100 ppm	GBd
Minimum Differential Input Voltage, p-p	See receiver eye mask definition	mV

Parameter	Value	Units
Maximum Input AC Common Mode Voltage, RMS	20	mV
Minimum Input Rise and Fall Time (20% to 80%)[a]	24	ps
Differential Input S-parameters	see 83A.3.4.4	dB
Differential Common Mode Input Conversion S-parameters	see 83A.3.4.5	dB
Maximum Total Jitter[b]	0.62	UI
Deterministic Jitter	0.42	UI
Receiver eye mask definition X1[d]	0.31	UI
Receiver eye mask definition X2[d]	0.5	UI
Receiver eye mask definition Y1[d]	42.5	mV
Receiver eye mask definition Y2[d]	425	mV

[a] Rise and Fall times are defined in 83A.4.4
[b] Total Jitter Measurement Methodology defined in section 83A.5.2
[c] Maximum non-EQ Jitter Measurement Methodology defined in section 83A.5.2
[d] Receiver Eye Mask illustrated in Figure 83A–7

Notes updated per 83A comment resolution