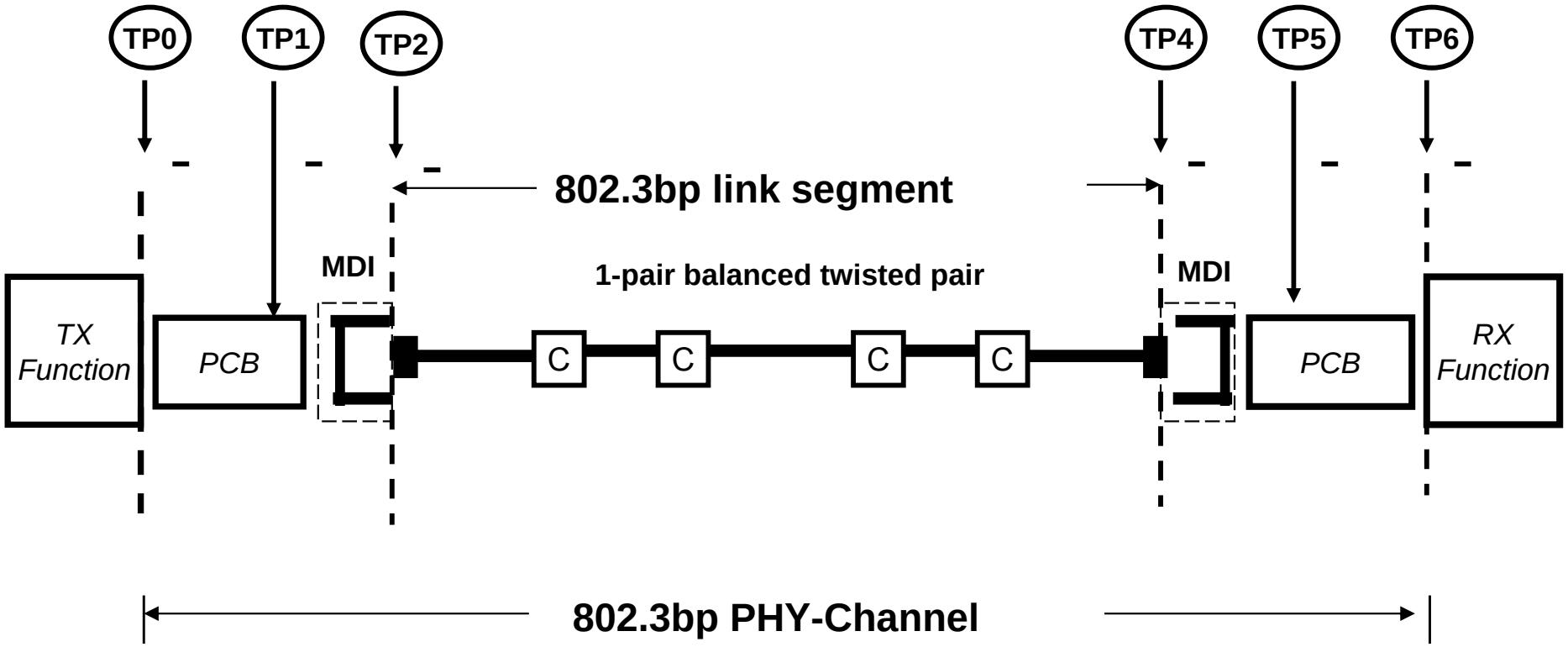
802.3bp test points

Chris DiMinico
MC Communications/Panduit
cdiminico@ieee.org

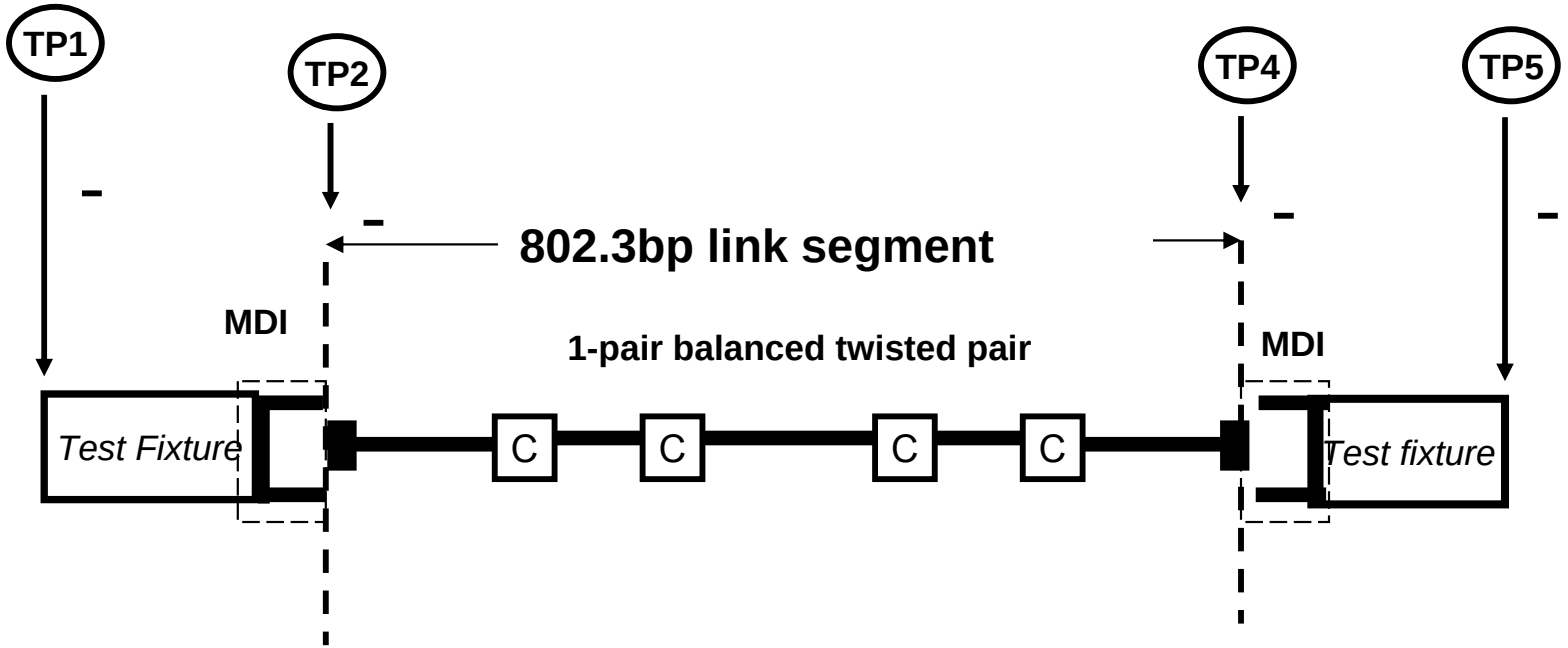
Presentation objectives

- **802.3bp test points and parameters**

802.3bp test points



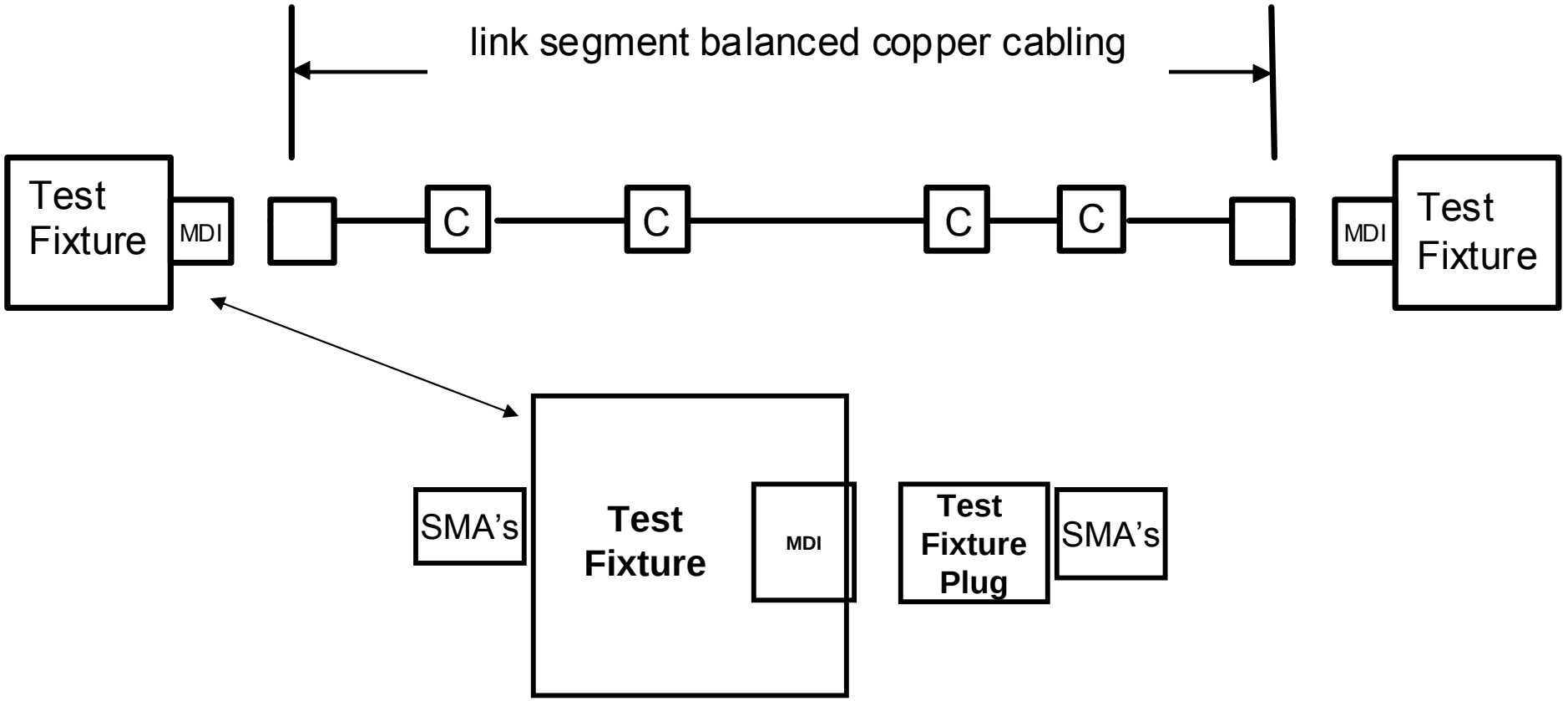
802.3bp link segment



Link segment transmission and coupling parameters – TP2-TP4

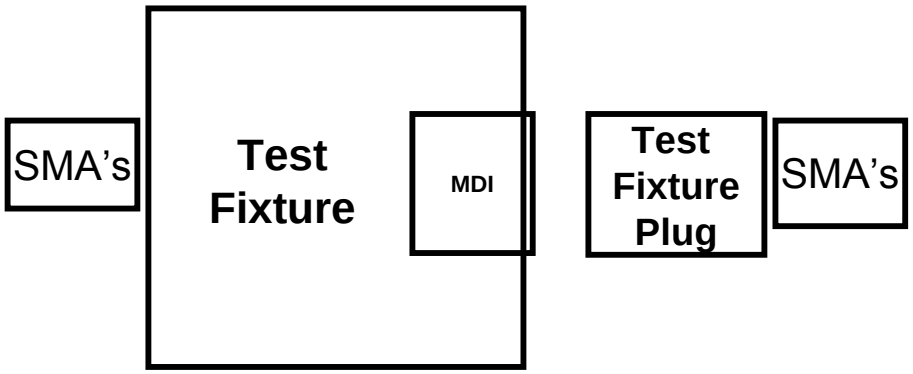
- Insertion loss
- Return loss
- Common to differential conversion loss (SDC12/SDC21) (UTP)
- Alien Crosstalk
  - PSANEXT, PSAACRF

RTPGE Test Fixtures



Specified in a mated state

RTPGE Test Fixtures



Specified in a mated state

- **Insertion loss**
- **Return loss**
- **Common to differential conversion loss (SDC12/SDC21)**

- **Alien Crosstalk (between MDI's)**
  - **PSANEXT, PSAFEXT**

Backup

Link segment transmission parameters (UTP)

Link segment transmission and coupling parameters (UTP)

- Insertion loss
- Return loss
- Alien Crosstalk
  - PSANEXT, PSAACRF
- Common to differential conversion loss (SDC12/SDC21)

•Insertion loss

•Amended Motion #2 - Move that The IEEE P802.3bp Task Force affirms the proposed
•Baseline IL Channel Performance for link segment insertion to establish the absolute
•value across the frequency range through 600MHz. (herman_3bp_01_0913.pdf)
•Technical 75%
•Vote
•Y: 25 N: 0 A: 4
•MOTION: Passes

Link segment transmission parameters (UTP)

- Alien Crosstalk -PSANEXT, PSAACRF

Motion #8 - Move that The IEEE P802.3bp Task Force affirms the proposed Baseline PSANEXT (in slide 11 in herman_3bp_01_0913.pdf) and PSAACRF (in slide 13 in herman_3bp_01_0913.pdf) for link segment specification over frequency range 1MHz - 600MHz. (alien crosstalk configuration in http://www.ieee802.org/3/bp/public/jul13/moffitt_3bp_01_0713.pdf)
M: Todd Herman S: Xiaofeng Wang
Technical 75%
Vote
Y: 18 N: 1 A: 10
MOTION: Passes

PSANEXT

from 1 to 100 MHz

$$PSANEXT := 60 - 10\cdot\log\left(\frac{f}{100}\right)$$

from 100 to 500 MHz

$$PSANEXT := 60 - 15\cdot\log\left(\frac{f}{100}\right) - 6\cdot\left[\frac{(f - 100)}{400}\right]$$

PSAACRF

$$PSAACRF := -20\cdot\log\left(10^{\frac{-10\cdot\log\left(\frac{15}{100}\right)+38.2-20\cdot\log\left(\frac{f}{100}\right)}{-20}} + 4\cdot 10^{\frac{67-20\cdot\log\left(\frac{f}{100}\right)}{-20}}\right)$$

where

f := frequency_in_MHz

...ID test points

Link segment transmission parameters (UTP)

- Return Loss

Frequency range	Requirement
1-10 MHz	19 dB
10-40 MHz	24-5log(f) dB
40-130 MHz	16 dB
130-400 MHz	37-10log(f) dB
400-600 MHz	11 dB

Motion #2: Move that the IEEE P802.3bp Task Force affirms that proposed RL specifications for the automotive link segment in herman_3bp_01_1113.pdf for inclusion in the 802.3bp baseline specification.

Moved by: Xiaofeng Wang

Seconded by: Mehmet Tazebay

Technical 75%

Link segment transmission parameters (UTP)

- Mode conversion

Frequency, MHz

-50_{dB}	$10 < f_{MHz} < 80$
$[\,5 \log_n (f_{MHz}) - 72\,]_{dB}$	$80 < f_{MHz} < 600$

Motion #3: Move that The IEEE P802.3bp Task Force affirms the proposed Mode Conversion limit line for the automotive link segment in Slide # 13 of tazebay_3bp_01a_0913.pdf for inclusion in 802.3bp baseline specification.
Moved by: Mehmet Tazebay
Seconded by: Gary Yurko
Technical 75%
Y: 33 N: 0 A: 5
MOTION: Passes