An Overview of BroadR-Reach Specification V3.2 Changes

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Mehmet Tazebay

mtazebay@broadcom.com

Contributors

Ahmad Chini, Broadcom

Albert Kuo, Realtek

Antony Joseph, NXP

Argha Nandy, Broadcom

Bernd Körber, FTZ

Christoph Schmutzler, BMW

Claus Lothar, VW

Kirsten Matheus, BMW

Mehmet Tazebay, Broadcom

Neven Pischl, Broadcom

Peter Hank, NXP

Sasha Babenko, Molex

Stefan Buntz, Daimler

Stefano Valle, STMicro

Steffen Lorentz, NXP

Steven Chen, Broadcom

Thomas Lindner, BMW

Thomas Müller, Rosenberger

Thomas Suermann, NXP

Wes Mir, Delphi

Overview

- **Typographical Corrections (as listed)**

- **Droop Test Limit Line Change (#36)**

  - ➢ **This change enables smaller size inductors for PoDL coupling networks**

  - ➢ **No system performance degradation due to this change**

- **Channel Related Parameters**

  - ➢ **Mode Conversion Limit Line (#41)**

    - • **Based on OEM & Tier1 feedback, this limit line is added in order to ensure that the EMC requirements are being met for 1TPCE channel components**

  - ➢ **MDI Return Loss Limit Line Change (#47)**

    - • **Based on automotive connector vendors, MDI RL is relaxed at the higher frequencies (>30MHz) in order accommodate several automotive qualified connectors while still meeting the link segment RL requirement in Section 7.1.3**

    - • **No system performance degradation due to this change**

V3.2 Changes

Ch. #	Page #	Section #	Version 3.2 changes with respect to V3.0
1	vi	List of Figures Figure 3-7	**DIFF:** Change ".. IEEE 802.3-bit2012 .." to ".. IEEE 802.3-2012 .."
2	2	1.0	**DIFF:** Change ".. by the OPEN Alliance as the .." to ".. by the OPEN Alliance (http://www.opensig.org) as the .."
3	2	1.2	**DIFF:** Change ".. compliant with Clause 40.7 .." to "".. compliant with its Clause 40.7 .."
4	3	1.2	**DIFF:** Change ".. BR-PHY Architecture .." to ".. BR-PHY architecture .."
5	5	1.7	**DIFF:** Change ".. IEEE 802.3-2012 are used in in this .." to ".. IEEE 802.3-2012 are used in this .."
6	6	1.9.1.2	**DIFF:** Change ".. etc., make take on .." to " .. etc., may take on .."
7	8	Figure 1-2	**DIFF**: Increased the font sizes, connected "link_status" to "PCS_Receive", removed "COL" from "PCS_Transmit"
8	9	1.12	**DIFF**: Change ".. Terminology Unique to BR-PHY" to ".. New Terminology in this Standard"

V3.2 Changes (cntd.)

Ch. #	Page #	Section #	Version 3.2 changes with respect to V3.0
9	15	Table 2-1	**DIFF:** Change ".. management and used Used by .." to ".. management and used by .."
10	19	Table 2-2	**DIFF:** Change ".. sementics .." to ".. semantics .."
11	19	Table 2-2	**DIFF:** Change ".. MASTER-SLAVE configuration is determined during PHY-Initialization. " to ".. MASTER-SLAVE configuration is determined by FORCE mode."
12	25	Figure 3-1	**DIFF:** Connected "link_status" to "PCS_Receive"
13	27	Table 3-1 TX_EN	**DIFF:** Change ".. GMII as specified in 23.2.2.3 .." to ".. GMII as specified in 35.2.2.3 .."
14	27	Table 3-1 TX_EN	**DIFF:** Change ".. MII as specified in 22.2.3 .." to ".. MII as specified in 22.2.2.3 .."
15	27	Table 3-1 TX_ER	**DIFF:** Change ".. GMII as specified in 23.2.2.3 .." to ".. GMII as specified in 35.2.2.5 .."
16	27	Table 3-1 TX_ER	**DIFF:** Change ".. MII as specified in 22.2.5 .." to ".. MII as specified in 22.2.2.5 .."

V3.2 Changes (cntd.)

Ch. #	Page #	Section #	Version 3.2 changes with respect to V3.0
17	32	Table 3-2 ESD1	**DIFF:** Change ".. 4.3.1.3 .." to ".. 40.3.1.3.."
18	32	Table 3-2 SSD1	**DIFF:** Change ".. 4.3.1.3.5 .." to ".. 40.3.1.3.5 .."
19	32	Table 3-2 SSD2	**DIFF:** Change ".. 4.3.1.3.5 .." to ".. 40.3.1.3.5 .."
20	32	Table 3-2 tx_enable	**DIFF:** Change ".. is to Figure 3-2 .." to ".. is to Figure 3-3 .."
21	32	Table 3-2 tx_enable	**DIFF:** Change ".. in Figure 3-2 .." to ".. in Figure 3-3 .."
22	33	Table 3-2 tx_error	**DIFF:** Change ".. is to Figure 3-2 .." to ".. is to Figure 3-3 .."
23	33	Table 3-2 tx_error	**DIFF:** Change ".. in Figure 3-2 .." to ".. in Figure 3-3 .."
24	34	Table 3-4 symb_timer	**DIFF:** Change ".. Its duration is 30ns nominal .." to ".. its duration is 15 ns nominal .."
25	34	Table 3-4 symb_timer	**DIFF:** Change ".. to "30 ns", and .." to ".. to "15 ns" ,and .."
26	34	Table 3-4 symb_timer	**DIFF:** Delete "in Section 5.1.3"

V3.2 Changes (cntd.)

Ch. #	Page #	Section #	Version 3.2 changes with respect to V3.0
27	34	Figure 3-5	**DIFF:** Change "TXD" to "TXD[3:0]", Change "tx_data" to "tx_data[2:0]"
28	38	Figure 3-6 ESD	**DIFF:** Change ".. 000 000 .." to ".. 100 100 .."
29	39	3.2.4.6	**DIFF:** Add "AB_SEL signal defines the interleave selection for 2-D ternary pairs."
30	40	Figure 3-7 caption	**DIFF:** Change ".. replace IEEE 802.3-bit2012 .." to ".. replace IEEE 802.3-2012 .."
31	41	Figure 3-8	**DIFF:** Change "receiving= FALSE * link_status=FAIL " to "receiving= FALSE + link_status=FAIL "
32	46	Figure 3-9	**DIFF:** Change "D<3:0> D<7:4>" to "d<3:0> d<7:4> "
33	56	5.1.3	**DIFF:** Change ".. 66 MHz +/- 0.01%.. " to ".. 66 MHz +/- 100 ppm .."
34	56	5.2	**DIFF:** Change ".. The test modes described below in Table 5-1 is .." to ".. The test modes described below in Table 5-1 are .."

V3.2 Changes (cntd.)

Ch. #	Page #	Section #	Version 3.2 changes with respect to V3.0
35	61	5.4	**DIFF:** Change ".. the requirements of this clause with .. " to ".. the requirements of this section with.."
36	61	5.4.1	**DIFF:** Change ".. the value 500 ns after the initial peak, shall be less than 26.9% .. " to ".. the value 500 ns after the initial peak, shall be less than 45.0% .."
37	62	5.4.2	**DIFF:** Change ".. is analogous to Clause 6.1.2.4 in IEEE 802.3-2012 .. " to ".. is analogous to Clause 40.6.1.2.4 in IEEE 802.3-2012 .."
38	66	5.5	**DIFF:** Change ".. and the electrical specifications of this clause .. " to ".. and the electrical specifications of this section .."
39	71	7.1.2	**DIFF:** Change " Insertion_Loss(f) : < 1.0 dB at f = 1 MHz < 2.6 dB at f = 10 MHz < 4.9 dB at f = 33 MHz < 7.2 dB at f = 66 MHz" to " Insertion_Loss [dB] : < 1.0 at f = 1 MHz < 2.6 at f = 10 MHz < 4.9 at f = 33 MHz < 7.2 at f = 66 MHz"

V3.2 Changes (cntd.)

Ch. #	Page #	Section #	Version 3.2 changes with respect to V3.0
40	71	7.1.3	**DIFF:** Change "Return Loss (f) : 18 (in dB) for f = 1 - 20 MHz 18 – 10*log10(f/20) (in dB) for f = 20 - 66 MHz" to "Return Loss [dB] : 18 for f = 1 - 20 MHz 18 – 10*log10(f/20) for f = 20 - 66 MHz"
41	72	7.1.4	**DIFF:** Add " **7.1.4 Mode Conversion** The common mode to differential mode conversion TCL and TCTL (defined in S-parameters: Sdc11, Sdc22, Sdc21 and Sdc12) of the link segment in Figure 7-1 shall meet or exceed the following equation for all frequencies from 1 MHz to 200 MHz: Mode Conversion(dB) : 43 for f = 1 - 33 MHz 43 – 20*log10(f/33) for f = 33 - 200 MHz"
42	73	7.2	**DIFF:** Change ".. In order to limit the near end crosstalk noise for a 6-pair bundle UTP cable .. " to ".. In order to limit the near end crosstalk noise for a 5-around-1 UTP cable bundle (up to 15m length and two inline connectors, equally spaced at 5 meter and 10 meter distances) .."

V3.2 Changes (cntd.)

Ch. #	Page #	Section #	Version 3.2 changes with respect to V3.0
43	73	7.2	**DIFF:** Change ".. the power sum NEXT loss shall be: .. " to ".. the Power Sum Alien Near-End Crosstalk (PSANEXT) loss shall be: .."
44	73	7.2	**DIFF:** Change "Power Sum NEXT LOSS (in dB) > 31.5 – 10*log10 (f/100)" to " PSANEXT (dB) > 31.5 – 10*log10 (f/100)"
45	73	7.2	**DIFF:** Change ".. Moreover, the Power Sum Equal Level Far End Crosstalk (ELFEXT) for a 6-pair bundle UTP cable shall be .. " to ".. Moreover, the Power Sum Alien Attenuation to Cross Talk Ratio-Far End (PSAACRF) for a 5-around-1 UTP cable bundle (up to 15m length and two inline connectors, equally spaced at 5 meter and 10 meter distances) shall be:.."
46	73	7.2	**DIFF:** Change "Power Sum ELFEXT (in dB) > 16.5 – 20*log10 (f/100)" to "PSAACRF (dB) > 16.5 – 20*log10 (f/100)"
47	74	8.2.2	**DIFF:** Change "Return Loss (f) : 20 (in dB) for f = 1 - 40 MHz 26 - 0.15*f (in dB) for f = 40 - 66 MHz" to "Return Loss [dB]: 20 for f = 1 - 30 MHz 20 – 20*log(f/30) for f = 30 - 66 MHz "

Thank you!