

TR-285

Broadband Copper Cable Models

Issue: 2 Corrigendum 1
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Issue History

Issue Number	Approval Date	Release Date	Issue Editor	Changes
1	23 February 2015	16 March 2015	Andre Holley	Original
1 Corrigendum 1	9 November 2015	11 November 2015	Andre Holley, TELUS Communications	Updates the Cable transfer function equations
1 Amendment 1	13 March 2017	5 May 2017	Andre Holley, TELUS Communications	New reference cable models added
1 Corrigendum 2	21 March 2019	21 March 2019	Andre Holley TELUS Communications	Corrects length dependency in Annex-C
2	2 September 2019	2 September 2019	Andre Holley TELUS Communications	New cable models and updates
2 Amendment 1	24 February 2023	24 February 2023	Andre Holley TELUS Communications	Add Australian Cable Models
2 Corrigendum 1	14 October 2024	15 October 2024	Herman Verbueken Nokia	Clarification on use of coaxial insertion loss formula. Correct text in Sections B.1.4.3; B.1.4.4; D.1.3 and I.3

Comments or questions about this Broadband Forum Technical Report should be directed to info@broadband-forum.org.

Editor: Herman Verbueken, Nokia

Work Area Director(s): Herman Verbueken, Nokia
Evan Sun, Huawei

Project Stream Leader(s): Herman Verbueken, Nokia

Table of Contents

Executive Summary	5
1 Purpose and Scope	6
1.1 Purpose	6
1.2 Scope	6
2 References and Terminology	7
2.1 Conventions	7
2.2 References	7
2.3 Definitions	7
2.4 Abbreviations	7
3 Correction to section B.1.4.3/TR-285 Issue 2	8
4 Correction to section B.1.4.4/TR-285 Issue 2	8
5 Correction to section D.1.3/TR-285 Issue 2	8
6 Correction to section I.3/TR-285 Issue 2	9

Executive Summary

The user of the document may wrongfully assume that the data in Table 17, section D.1.3 is the requirement for the insertion loss of coaxial cables, while it was just intended to show an example measurement from literature. The text is correct to reflect this and to make clear that only the model formula is to be used for the calculation of the coaxial insertion loss.

1 Purpose and Scope

1.1 Purpose

The purpose of this corrigendum is to correct the text in section D.1.3 in order to clarify that Table 17 is a measurement example taken from literature and to make clear that only the coaxial model formula is to be used for calculating the insertion loss.

A minor correction to some references is included.

1.2 Scope

This document contains corrections to TR-285 issue 2[1].

The following sections are modified:

- Section B.1.4.3
- Section B.1.4.4
- Section D.1.3
- Section I.3

2 References and Terminology

2.1 Conventions

See TR-285 issue 2[1]

2.2 References

See TR-285 issue 2[1]

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|-----|--------------------------|--|-----|---------|
| [1] | TR-285i2 | Broadband Copper Cable Models
Issue 2 | BBF | 2019/09 |
|-----|--------------------------|--|-----|---------|

2.3 Definitions

See TR-285 issue 2[1]

2.4 Abbreviations

See TR-285 issue 2[1]

3 Correction to section B.1.4.3/TR-285 Issue 2

Replace “Appendix II.3” by “Appendix I.3” in section B.1.4.3 Reference Inductance Matrix for cable type J-H(ST)H Bd 10x2x0.6 of TR-285 issue 2[1] and revise as follows:

MATLAB-file PE06.zip in the Reference_Matrices_300MHz.zip [file](#) ([see](#) Appendix II.3) contains the following arrays:

Variable Name	Dimension
Lref_pe06	60x60x250
dref_pe06	250x1

4 Correction to section B.1.4.4/TR-285 Issue 2

Replace “Appendix II.3” by “Appendix I.3” in section B.1.4.4 Reference Inductance Matrix for cable type I-O2YS(ST)H 10x2x0.5 STVI Bd of TR-285 issue 2[1] and revise as follows:

MATLAB-file PE05.zip in the Reference_Matrices_300MHz.zip [file](#) ([see](#) Appendix II.3) contains the following arrays:

Variable Name	Dimension
Lref_pe06	60x60x250
dref_pe06	250x1

5 Correction to section D.1.3/TR-285 Issue 2

Revise the text in section D.1.3 Coax Cable Model / characteristics of TR-285 issue 2[1] as follows:

[The Three example measurements of typical](#) coax cable signal [insertion](#) loss [\(IL\)](#) characteristics [as reported in literature \[6\]](#), in dB per 100m are shown in Table 17:

Table 17- [Example measurements of coax cable](#) Insertion loss ~~characteristic of coax cable types [6]~~

	RG-59	RG-6	RG-11
1 MHz	1.31	0.66	0.66
10 MHz	4.59	1.97	1.31
50 MHz	5.90	4.59	3.28
100 MHz	8.86	6.56	5.25
200 MHz	11.81	9.18	7.54

400 MHz	16.07	14.10	11.48
700 MHz	22.63	18.37	15.42
900 MHz	25.58	19.68	17.71
1000 MHz	27.22	20.00	18.37
2150 MHz	39.69	32.47	21.65
IL (dB)/ 100m			

~~The maximum distance of the coax deployment is modelled by RG-6 cable is shown in Figure 23 and Figure 24.~~ The maximum and typical distance of a typical coax deployment case for G.fast with and without satellite TV using RG-6 cable are shown in Figure 23 and Figure 24 respectively. A longer coax deployment distance is possible by utilizing the lower loss RG-11 cable. Conversely, the maximum coax distance could be reduced with RG-59 cable to the equivalent loss distance of the RG-6.

The exponential approximation model of the coax insertion loss ~~characteristic~~ is given by formula (1).
This formula SHALL be used for calculation of the coax insertion loss.

$$IL = a f^b + c f + d \quad (\text{dB}/100\text{m}) \quad (1)$$

f = Frequency in MHz

6 Correction to section I.3/TR-285 Issue 2

Revise the text in Appendix I.3 Reference Matrices (PE06.zip and PE05.zip) of TR-285 issue 2[1] as follows:

The following MATLAB files are contained in ~~TR-285-05.zip~~ Reference_Matrices_300MHz.zip:

- PE05 Reference Matrices 300 MHz
- PE06 Reference Matrices 300 MHz

MATLAB-file *PE06.zip* contains the reference matrix cable type *J-H(ST)H Bd 10x2x0.6*.

MATLAB-file *PE05.zip* contains the reference matrix cable type *I-O2YS(ST)H 10x2x0.5 STVI Bd*.

End of Broadband Forum Technical Report TR-285