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1. SCOPE

This document covers the synchronization tests required to verify the B-DSLlink 16AD operation under simulated real conditions:

20 pairs 26 AWG (0.4mm) cable combined from 4 different lengths bobbins.

All cables and tested units are connected on patch panel.

All test results were taken under the worst pair combination in the cable (Adjacent pairs, for maximum Cross-Talk).

2. TEST SET-UP

Figure 1 below depicts the Test Set-Up.

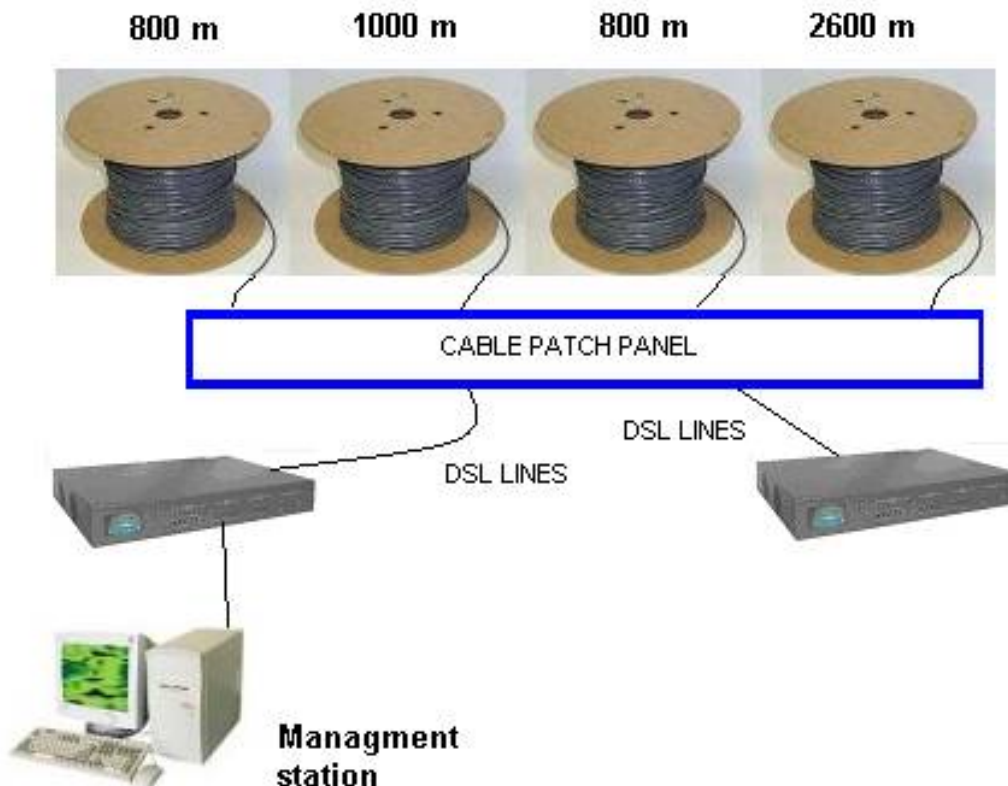


Figure 1: Test Set-Up

2.1. Equipment

- Two B-DSLlink 16AD (each with one 4xE1 module and two G-SHDSL modules).
- 20 pairs 26 AWG (0.4mm) cable with at least 16 pairs, connected through patch panels that enables 16 x 0.8 Km, 16 x 1.0 Km, 16 x 1.6 Km, 16 x 2.6 Km, 16 x 3.4 Km, 16 x 3.6 Km, 16 x 4.2 Km, 16 x 4.4 Km and 16 x 5.2 Km distances.

2.2. Reference documents

1. B-DSLlink 16AD User Manual

2.3. List of Functional Tests

1. 1 pair Synchronization Test.
2. 4 pairs Synchronization Test.
3. 8 pairs Synchronization Test.
4. 16 pairs Synchronization Test

3. TEST PROCEDURE

3.1. Default Configuration PnP Test

The B-DSLlink 16AD default PnP configuration is according to the identification of the installed modules during power up sequence, as follow:

- One DSL module – 8 pairs.
- Two DSL modules – 16 pairs.

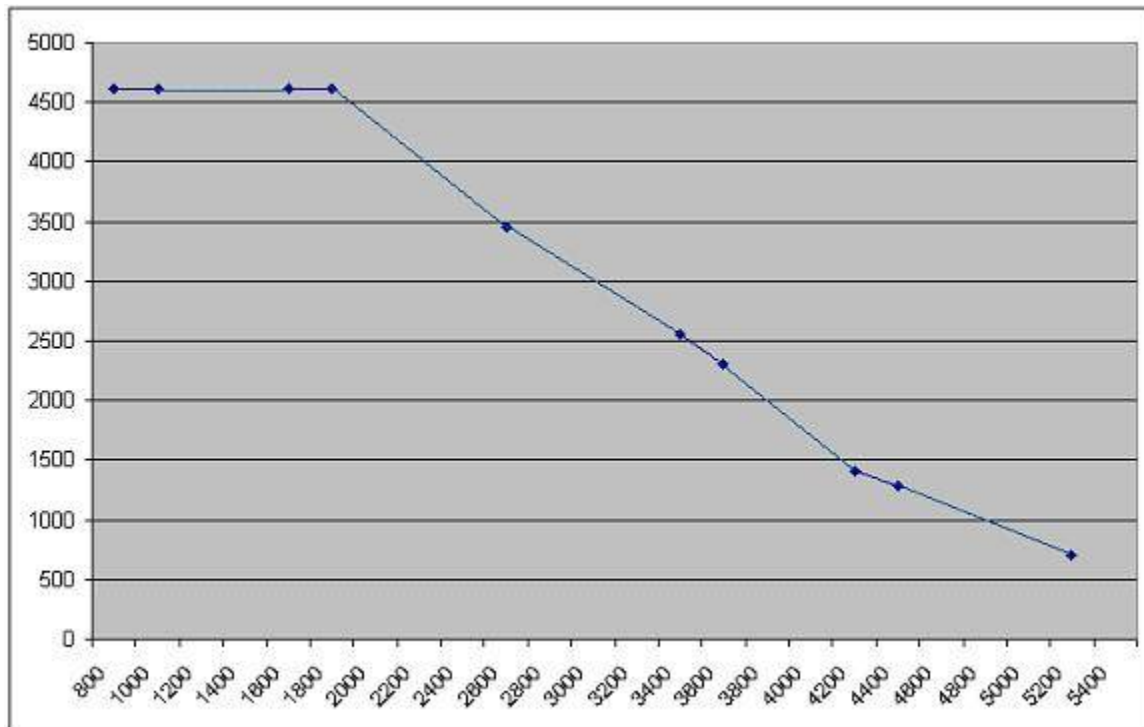
The individual DSL rates are the maximum available according to line conditions and the default rate table. Unconnected DSL pairs and E1 interfaces, if active for the default configuration, will cause individual alarms but will not disable the traffic.

1. Connect the B-DSLlink 16AD DSL interfaces trough the cable with defined length by test.
Make sure that one side is pre-configured as COT and the other as RT (a switch on DSL module 1, [Ref 1](#))
2. Connect the NMS PC to the terminal port of the COT, and activate the Terminal utility ([Ref 1](#))
3. Connect the power cords, and apply power.
Wait for DSL modems synchronization.
4. Via the Terminal, record the Total

3.2. 1-pair Test

Test Results:

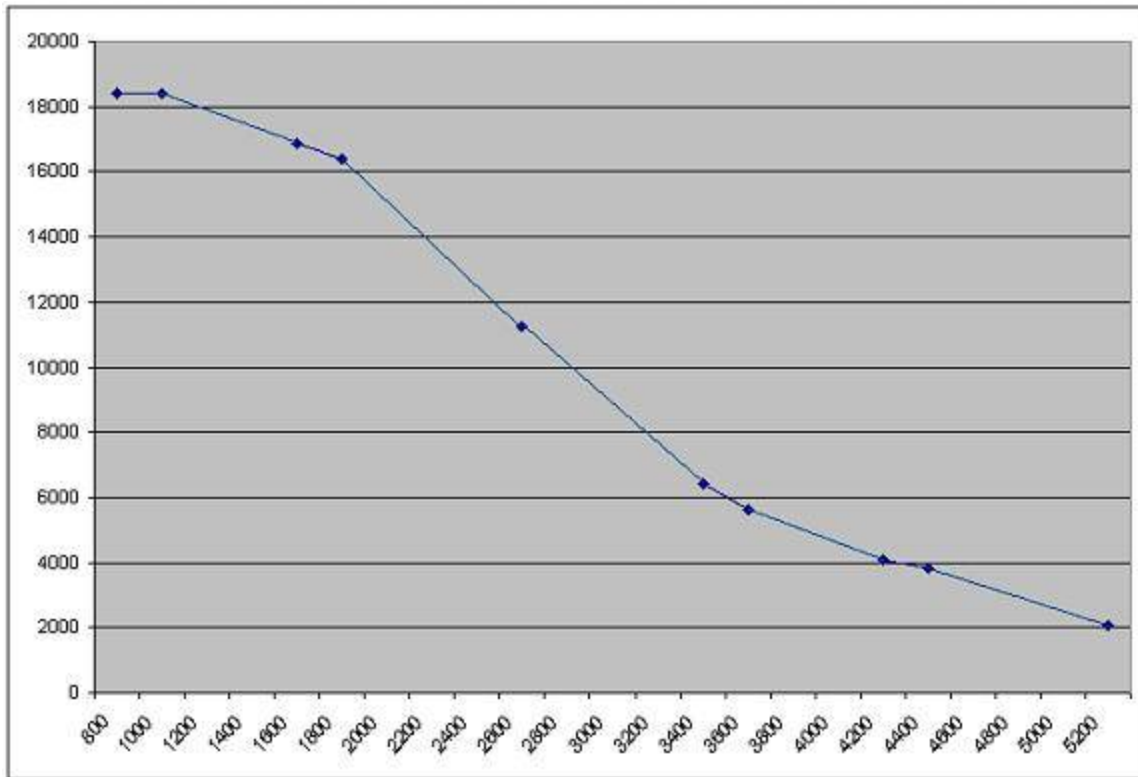
Cable Length (m)	Line rate (kbps)
800	4608
1000	4608
1600	4608
1800	4608
2600	3456
3400	2560
3600	2304
4200	1408
4400	1280
5200	704



3.3. 4-pair Test

Test Results:

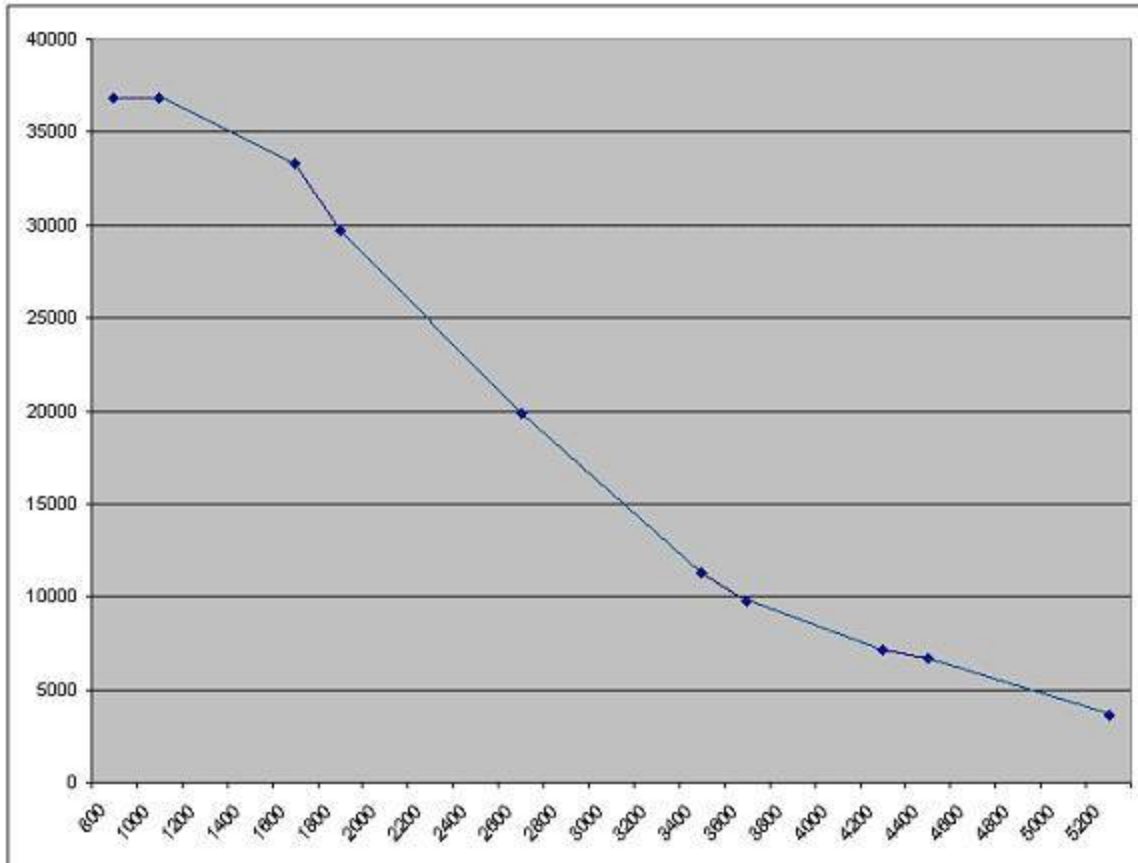
Cable Length (m)	Line rate (Kbps)	Average rate per line (Kbps)
800	18432	4608
1000	18432	4608
1600	16896	4224
1800	16384	4096
2600	11264	2816
3400	6400	1600
3600	5632	1408
4200	4096	1024
4400	3840	960
5200	2048	512



3.4. 8-pair Test

Test Results:

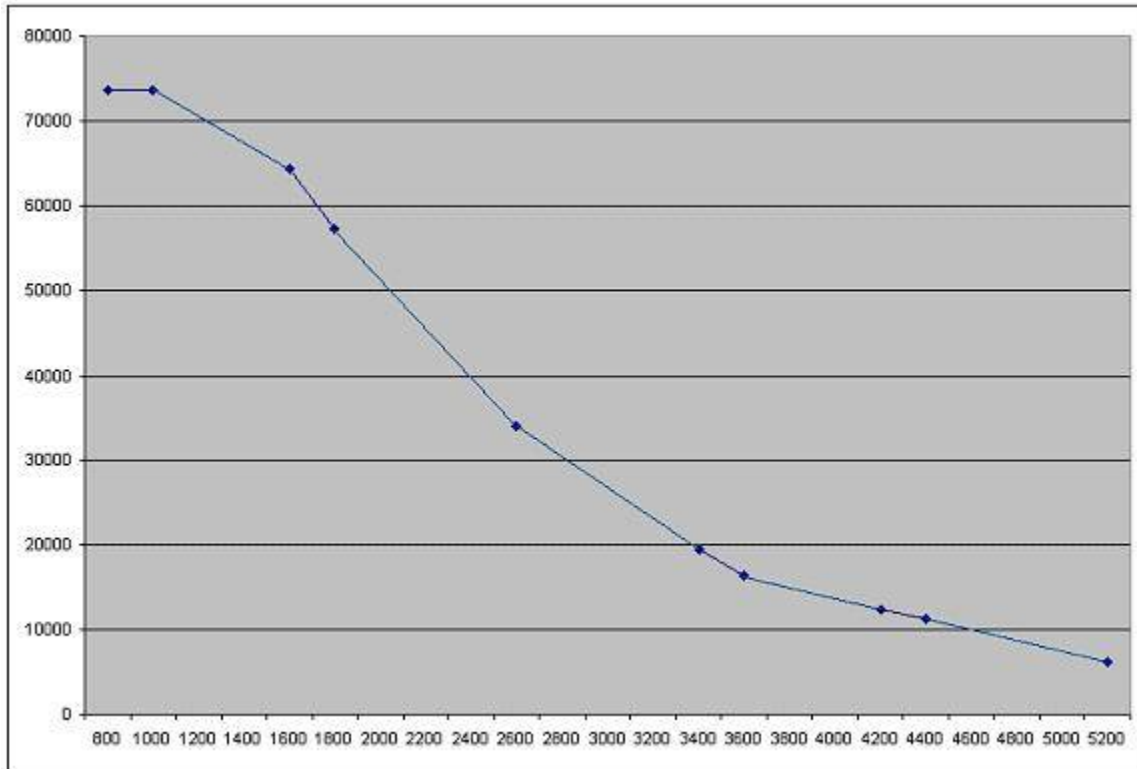
Cable Length (m)	Line rate (Kbps)	Average rate per line (Kbps)
800	36864	4608
1000	36864	4608
1600	33280	4160
1800	29184	3648
2600	19840	2480
3400	12288	1408
3600	9728	1216
4200	7168	896
4400	6656	832
5200	3584	448



3.5. 16-pair Test

Test Results:

Cable Length (m)	Line rate (Kbps)	Average rate per line (Kbps)
800	73728	4608
1000	73728	4608
1600	64384	4024
1800	57536	3596
2600	33984	2124
3400	21504	1216
3600	19456	1024
4200	12288	768
4400	11264	704
5200	6144	384



3.6. Average rate comparison

