

TLN WRO Specification type Document

< TLN coax patchcord specification for connection
AO STB/TV to WO (IEC male (straight) to IEC
female (angled) 2.5m)>



Document Housekeeping

Document Category and type

CAT	TYPE	DOC ID	Comment
TV	SPEC	TLN-WRO-TA-A-S-PAAD	Specification type documents (-SPEC) are documents specifying logical / physical interfaces / protocols, etc..., to which AO equipment/systems need to comply

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List of Appendixes

This document may refer to further detailed documents that are added in Appendixes to this document.

A reference to an appendix is in this document highlighted with grey background.

The list with appendixes of this document:

None.

List of References

This document may refer to external documents or information sources.

A reference to an external document or information source is in this document highlighted with grey background.

The list of referred external documents or information sources in this document:

Reference 1 : <TLN WRO CAT: TV: TLN-WRO-TA-A-C-PAAD>

Reference 2 : <TLN WRO CAT: TV: TLN-WRO-TA-A-C-PAAA>

1 **Abstract**

This document describes functional specification, requirements and non-functional requirements for TLN coax patch cord which is used for connecting AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m). TLN implies AO to follow the requirements and specifications stated in this document.

This document has a corresponding certification document with reference: TLN-WRO-TA-A-C-PAAD which is used to test AO WO equipment compliance against this specification.

The feasibility of the technical designs and methods described in this document are subject to verification by a Proof of Concept (POC) test organized by Telenet and may be changed or updated depending on the outcome of this POC.

2 Glossary and Abbreviations

CPE: Customer Precise Equipment
DOCSIS: Data over Cable Service Interface Specification
EMC: Electro Magnetic Compatibility
NIU: Network Interface Unit
RF: Radio Frequency
WO: Wall Outlet

3 TLN Coax Patchcord Functional Description

- (1) The purpose of Telenet approved coax patch-cords is to realize in home connections over short distance (0-2,5m range) between WO/NIU and AO CPE equipment (Docsis, STB). The specifications ensure quality full and reliable transport of all RF signals in the supported spectrum ranges and also protect network and other equipment integrity on the RF level (ingress and egress radiation).
- (2) Several variants are provided to ensure convenient use and installation taking into account different customer home conditions.

4 TLN Coax Patchcord Functional Requirements

4.1 RF Requirements

4.1.1 *Insertion Loss*

- (3) Insertion Loss Requirement for TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m) is shown in below figure.

Parameter	Requirement
Insertion loss 5 - 1000MHz	$\leq 1.5\text{dB}$

Figure 4-1

4.1.2 *Return Loss*

- (4) Return Loss Requirement for TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m) is shown in below figure.

Parameter	Requirement
Return loss 5 - 1000MHz In	\geq Cenelec Category B
Return loss 5 - 1000MHz Out	\geq Cenelec Category B

Figure 4-2

4.1.3 *Attenuation*

- (5) Attenuation Requirement TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m) is shown in below figure.

Parameter	Requirement
Attenuation at 20°C	$\leq 1.5\text{dB}$

Figure 4-3

4.1.4 *Impedance*

- (6) Impedance Requirement for TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m) is shown in below figure.

Parameter	Requirement
Impedance	75Ω

Figure 4-4

4.1.5 EMC Screening

- (7) EMC Screening Requirements for TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m) are shown in below figures.

Parameter	Requirement
Screening effectiveness	Conform Cenelec EN50083-2: Class A

Figure 4-5

Parameter	Requirement
Screening effectiveness 5 - 300MHz	$\geq 85\text{dB}$
Screening effectiveness 300 - 470MHz	$\geq 80\text{dB}$
Screening effectiveness 470 - 950MHz	$\geq 75\text{dB}$
Screening effectiveness 950 - 1000MHz	$\geq 55\text{dB}$

Figure 4-6

4.2 AO Device Management by TLN Requirements

4.2.1 *Concept and purpose*

- (8) As this document describes the “TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)”, concept and purpose for AO Device Management is not applicable.

4.2.2 *Device management Functions*

- (9) As this document describes the “TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)”, device management functions are not applicable.

4.2.3 *SNMP MIB specifications*

- (10)As this document describes the “TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)”, SNMP management is not applicable.

4.2.4 *Reset and Factory Reset specifications*

- (11)As this document describes the “TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)”, Reset and Factory Reset are not applicable.

5 TLN Coax Patchcord Non - Functional Requirements

5.1 Mechanical Requirements

5.1.1 *Cable mechanical characteristics*

(12) Mechanical Requirements for TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m) is shown in below figure.

Parameter	Requirement
Length	2.5m tolerance +0,1m (connectors included)
Connector 1	IEC male (straight) conform Cenelec EN50083-4 HD 134.2 S2 IEC 169-2
Connector 2	IEC female (90° angled) conform Cenelec EN50083-4 HD 134.2 S2 IEC 169-2
Center conductor	Solid CU
Dielectric	Full PE (recommended by Telenet)
Inner shield	AL foil or AL-PET foil bonded
Braid	Tinned CU braid >50% coverage; >50 micron thick
Jacket	White PVC
Bend radius	All specifications must be met after 1 bend with radius of 4cm and 10 bends with radius of 8cm

Figure 5-1

5.1.2 *Diagnostic Leds*

(13) As this document describes the “TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)”, diagnostic leds are not available.

5.1.3 *Labels*

(14) Following Labels for “TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)” must be printed on cable (indelible - letter height 3...5mm);

- a. “TELENET - INTERKABEL”
- b. Vendor name
- c. Product type

(15) Coax patch cords should be used widespread between TLN and AO connections; so AO WO must strictly comply with all TLN requirements.

5.1.4 *Connectors*

(16) The connectors of “TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)” are IEC male (straight) to IEC female (90° angled) 2.5m.

- (17) The clamping force of the female connector of *“TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)”* must withstand at least 200g on the outer conductor and 100g on the inner conductor conform EN50083-4 HD 134.2 S2 IEC 169-2.
- (18) The connectors of *“TLN coax patch cord for connection AO STB/TV to WO (IEC male (straight) to IEC female (angled) 2.5m)”* must withstand a pulling force of 35cNm (=5kgf).

5.2 Environmental Requirements

5.2.1 *Packaging*

(19)The Applicable Requirements about packaging can be found in TLN-WRO-TA-A-S-PAAA.

5.2.2 *RoHS and WEEE compliancy*

(20)The Applicable Requirements about RoHS and WEEE compliancy can be found in TLN-WRO-TA-A-S-PAAA.

5.2.3 *EU CoC compliancy*

(21)The Applicable Requirements about EU CoC compliancy can be found in TLN-WRO-TA-A-S-PAAA.

5.3 Safety Requirements

5.3.1 *Surge and Lightning protection*

(22)The Applicable Requirements about surge and lightning protection can be found in TLN-WRO-TA-A-S-PAAA.

5.3.2 *Temperature and Humidity*

(23)The Applicable Requirements about temperature and humidity can be found in TLN-WRO-TA-A-S-PAAA.

5.3.3 *Fire resistance*

(24)The Applicable Requirements about fire resistance can be found in TLN-WRO-TA-A-S-PAAA.

5.4 EU Consumer Goods label Requirements

5.4.1 *CE - mark*

(25)The Applicable Requirements about CE - mark can be found in TLN-WRO-TA-A-S-PAAA.