

# **TLN WRO Specification type Document**

< TLN coax patchcord specification for connection  
AO STB/TV to WO (IEC plug to jack RA, RG/59U  
2.5m angled) >



## Document Housekeeping

### Document Category and type

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

### Document Authorization

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### Document Effective Date

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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-PAAB>

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 plug to jack RA, RG/59U 2.5m angled). 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-PAAB 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 (Docusis, 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 specification for connection AO STB/TV to WO (IEC plug to jack RG/ 59U 2.5m) is shown in below figure.

| Paramater                  | 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 specification for connection AO STB/TV to WO (IEC plug to jack RG/ 59U 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 for TLN coax patch cord for connection AO STB/TV to WO (IEC plug to jack RG/ 59U 2.5m) is shown in below figure.

| Paramater            | 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 plug to jack RG/ 59U 2.5m) is shown in below figure.

| Paramater | Requirement |
|-----------|-------------|
| Impedance | 75 $\Omega$ |

Figure 4-4



#### 4.1.5 EMC Screening

- (7) EMC Screening Requirement for TLN coax patch cord for connection AO STB/TV to WO (IEC plug to jack RG/ 59U 2.5m) is shown in below figure.

| Parameter               | Requirement                           |
|-------------------------|---------------------------------------|
| Screening effectiveness | Conform Cenelec<br>EN50083-2: Class A |

Figure 4-5

| Paramater                             | Requirement |
|---------------------------------------|-------------|
| Screening effectiveness 5 - 300MHz    | ≥85dB       |
| Screening effectiveness 300 - 470MHz  | ≥80dB       |
| Screening effectiveness 470 - 950MHz  | ≥75dB       |
| Screening effectiveness 950 - 1000MHz | ≥55dB       |

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 specification for connection AO STB/TV to WO (IEC plug to jack RA, RG/59U 2.5m), Concept and Purpose is not applicable.

### **4.2.2 *Device management Functions***

- (9) As this document describes the TLN coax patch cord specification for connection AO STB/TV to WO (IEC plug to jack RA, RG/59U 2.5m), Device Management Functions are not applicable.

### **4.2.3 *SNMP MIB specifications***

- (10)As this document describes the TLN coax patch cord specification for connection AO STB/TV to WO (IEC plug to jack RA, RG/59U 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 specification for connection AO STB/TV to WO (IEC plug to jack RA, RG/59U 2.5m), Reset and Factory Reset Specifications is not applicable.

## 5 TLN Coax Patchcord Non - Functional Requirements

### 5.1 Mechanical Requirements

#### 5.1.1 *Cable mechanical characteristics*

- (12) Cable mechanical characteristics for TLN coax patch cord for connection AO STB/TV to WO (IEC plug to jack RG/ 59U 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 specification for connection AO STB/TV to WO (IEC plug to jack RG/59U 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 plug to jack RG/59U 2.5m)” must be printed on cable (indelible - letter height 3...5mm);

- “TELENET - INTERKABEL”
- Vendor name
- Product type

- (15) Coax patch cords will 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 plug to jack RA, RG/59U 2.5m)” are IEC male (straight) to IEC female (90° angled).

- (17) The clamping force of the female connector of “TLN coax patch cord for connection AO STB/TV to WO (IEC plug to jack RA, RG59U 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 plug to jack RA, RG59U 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.