



# **T**ELENOR

# **S**PECIFICATION

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## **Access to the 34 and 140 Mbit/s digital leased circuits. Specification of the network side of the user-network interfaces.**

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## 1 Scope

This specification gives the technical requirements and conformance tests for the network interface presentations of the 34 Digital Unstructured leased line (D34U) operating at 34 368 kbit/s, and the 140 Digital Unstructured leased line (D140U) operating at 139 264 kbit/s.

## 2 References

### 2.1 Normative references

- [1] ETS 300 686: "Business TeleCommunications (BTC); 34 Mbit/s and 140 Mbit/s digital leased lines (D34U, D34S, D140U and D140SD); Network interface presentation". Edition 1 (1996-04)
- [2] EN 300 386-2: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Telecommunication network equipment; ElectroMagnetic Compatibility (EMC) requirements; Part 2: Product family standard". V1.1.3 (1997-12).
- [3] EN60950: "Safety of information technology equipment including electrical business equipment" (1992)
- [4] EN 41003: "Particular safety requirements for equipment to be connected to telecommunication networks" (1991-05)
- [5] ITU-T K31: "Bonding configurations and earthing of telecommunication installations inside a subscriber's building" (1993-03)
- [6] ITU-T K20: "Resistibility of telecommunication switching equipment to overvoltages and overcurrents" (1996-10)
- [7] ITU-T K15: "Protection of remote-feeding systems and line repeaters against lightning and interference from neighbouring electricity lines" (1988-11)
- [8] ITU-T K21: "Resistibility of subscribers' terminal to overvoltages and overcurrents" (1996-10)

### 2.2 Informative references

- [9] EG 201 147: "Equipment Engineering (EE); Interworking between Direct Current/Isolated (DC/I) and Direct Current/Common (DC/C) electrical power systems. V1.1.2 (1998-02)

## 3 Definitions and abbreviations

See [1] ETS 300 686, subclause 3.

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## **4 Requirements**

Otherwise clearly stated, the interface specifications shall conform to the requirements given in [1] ETS 300 686.

Only Digital Unstructured leased line (D34U and D140U) will be provided.

Apart from subclause 4.7, which is added to include requirements for ground connections, the following subclauses are numbered in line with the corresponding subclauses in [1] ETS 300 686.

### **4.1 Mechanical Characteristics**

The network interface will be provided on a digital distribution block (“DX-blokk”) by means of two coaxial 75Ω sockets complying with IEC 169-13 (1.6/5.6, female), one each for transmit and receive. The outer conductor of the coaxial cable is not connected to earth at the distribution block, but will be grounded at the network side equipment ports.

An optional interface may be provided for the 34 Mbit/s interface by means of two coaxial 75Ω BNC sockets complying with IEC 169-8, one each for transmit and receive.

### **4.2 Electrical characteristics - 34 Mbit/s**

All requirements are in accordance with [1] ETS 300 686, subclauses 4.2.1 to 4.2.2.5.

### **4.3 Electrical characteristics - 140 Mbit/s**

All requirements are in accordance with [1] ETS 300 686, subclauses 4.3.1 to 4.3.2.4.

### **4.4 Safety**

Equipment connected to the interface shall be in accordance with [3] EN60950, and [4] EN 41003.

### **4.5 Overvoltage protection**

Equipment connected to the interface shall be in accordance with [6] ITU-T K20 and [7] ITU-T K15.

If the cables between the network termination point and the terminal equipment leave the building, protection of the terminal equipment may be required in accordance with [8] ITU-T K21.

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#### 4.6 Electromagnetic Compatibility (EMC)

The EMC requirement for the equipment ports is given in [2] EN 300 386-2, subclause 5.2.3: “Other than telecommunication centres, ports for indoor signal lines”. This requirement shall be interpreted as valid for the interface ports formed by the coaxial sockets.

#### 4.7 Bonding configuration and earthing of equipment using the specified interface

Bonding configurations and earthing of telecommunication equipment connected to the interface shall be in accordance with [5] ITU-T K31.

Note:

As the outer coaxial conductor normally will be grounded in each end at the equipment ports, a connection between different ground levels and/or different current systems may be established. This may cause transmission noise and have a safety aspect in case of short-circuiting in one of the power feeding systems.

Guidelines to overcome those problems are given in [9] EG 201 147.



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#### Annex 1: Document history

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