

Нексом - България ЕАД



Nexcom Bulgaria

Network interface publication

Under Directive 1999/5/EC (R&TTE)

Version Control

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Introduction

This document contains interface specification of Nexcom Bulgaria for the purpose of compatibility of the telecommunication equipment. The information in this document refers only to the public interfaces available at the moment of writing this document.

Contents

1	SCOPE	4
1.1	Interface publication	4
2	DOCUMENTS	4
3	DEFINITIONS	4
4	ADDITIONAL INFORMATION	4
5	DESCRIPTION	5
5.1	Introduction	5
5.2	The Network Termination Point	5
5.3	Electrical characteristics of the interface	5
5.4	Safety and electromagnetic compatibility.....	5
5.4.1	Safety	5
5.4.2	Electromagnetic compatibility	6
5.5	Services	6
5.5.1	Fixed telephony	6
5.5.2	Internet access.....	6
5.6	Additional services.....	6
5.7	Other characteristics	6

1 Scope

1.1 Interface publication

Under S.I. 240 of 2001¹ and EG 201 730-1 on Radio and Telecommunications Terminal Equipment (R&TTE) operators with public telecommunication networks are obliged to publish accurate and sufficient technical interface requirements about the connection of the equipment to their networks before the public launch of the offered services. This document contains all the necessary information about the network interface specification and the available services.

2 Documents

- (1) Directive 1999/5/EC of the European Parliament and the Council of 9th March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.
- (3) ETSI TR 101 730 Publication of interface specification under Directive 1999/5/EC; Guidelines for describing analogue interfaces.
- (4) ETSI TR 101 730 Access and Terminals (AT); Digital access to the public telecommunications network; publication of interface specification under Directive 1999/5/EC; Guidelines for describing digital interfaces.
- (5) ETSI EG 201 838 Electromagnetic Compatibility and Radio spectrum matters; Publication of interface specifications under Directive 1999/5/EC; Guidelines for describing radio access interfaces.

3 Definitions

The definitions and abbreviations in this document are taken from ETSI TS 123 002 (release 1999).

4 Additional information

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¹ SI 240 of 2001 entitled European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations 2001

5 Description

5.1 Introduction

Detailed interface characteristics can be found in ETSI 123002 (revised 1999)

5.2 The Network Termination Point

The connection can be unbalanced 75ohm BNC and balanced 120 ohm pair terminated with RJ45 connector. The line connection interface should respond to the following specification on the output E1 traffic ports (responding to ITU-T G.703):

Bit timing	2048 Kbit/s ITU-T G.703
Line code	HDB3 ITU-T G.703
High-voltage protection	according to ITU-T K.41
Load impedance	75/120 ohm, ITU-T G.703
Pulse mask	ITU-T G.703
Maximum jitter peak to peak	according to ITU-T G.823

Network Termination Point for 10/100Mbit/s RJ45 connector. Connectors shall be connected to the Network Terminating and Test Apparatus (NTTA) / Network Terminating Equipment. Detailed description of the connector is shown below:

Pin Number	Signal
1	Transmit +
2	Transmit -
3	Receive +
4	Unused
5	Unused
6	Receive -
7	Unused
8	Unused

5.3 Electrical characteristics of the interface

Pulse shape of the output port should be in accordance with ITU-T G.703.

The digital signal of the input port should respond to the parameters described above and be compensated with the parameters of the cable pair implementing the mutual connection. We should have in mind that the attenuation of the pair is a function of square root of the frequency and at 1024 kHz it should be in the range of 0 ÷ 6dB. When defining this attenuation the losses brought by the presence of a digital distribution frame between the devices and u1085 of both sides should be taken into consideration.

The interface characteristics for 10 Mbit/s and 100 Mbit/s digital lines should be according to the standard IEEE 802.3[1] ("Ethernet").

5.4 Safety and electromagnetic compatibility

5.4.1 Safety

The grounding of the external conductor or the monitor should respond to ITU-T G.703

The external conductor of the coaxial cable has to be connected to the grounding network (electrical ground) at the input and output port.

The direct connection of the external conductors of the coaxial cables to the grounding network into the transmitting and receiving interfaces can cause passing of compensatory electricity through the connectors including the input chains of the receivers because of the difference between the potentials of the different grounding networks. As a result of this errors and even break-downs of the equipment could appear. To avoid this problem it is possible to use DC isolation between the external conductor and the connecting network at the receiving interface. The DC isolation method does not have to break the electromagnetic compatibility of the equipment and the whole installation.

References ITU-T K.27, K.35, K.40 and K.41 are applied. Connecting of E1 ports that do not respond to the protection requirements against over-voltage and lightnings is not allowed. A general grounding of the equipment is obligatory.

The working voltages used are described in ITU-T G.703 [2]. 2048 kbit/s (2Mbit/s) digital leased.

The line interfaces are defined in ITU-T G.703 [2].

The working voltages for 10 Mbit/s and 100 Mbit/s line interfaces are defined in IEEE 802.3.

5.4.2 Electromagnetic compatibility

The network equipment connected with the launch of an interface responds to the current regulations for electromagnetic compatibility.

Regulatory Compliance EN55022 (CISPR 22) – electromagnetic interference
EN50082-1 (IEC801-2, IEC801-3, IEC801-4) – electromagnetic immunity
EN60950 (IEC950) – product safety

5.5 Services

5.5.1 Fixed telephony

5.5.2 Internet access

5.6 Additional services

CLIP, CLIR

5.7 Other characteristics

For instructions about standards and technical specifications on radio and telecommunication terminal equipment (R&TTE) in connection to directive 1999/5/EC the following document ETSI EG 201 450 V1.1.1 (2000-09) can be used.