Customer Interface Publication: KCOM (Hull) CIP009

Technical Characteristics of the 155520 kbit/s (155Mbit/s) digital leased line

Issue: 1.2
April 2016

The information in this document is provided in accordance with the requirements of the Radio Equipment and Telecommunications Terminal Equipment Regulations 2000 (Statutory Instrument 2000 No. 730) to publish (in accordance with the EC Radio and Telecommunications Terminal Equipment Directive 99/05/EC) technical characteristics of interfaces to the public fixed telephone network.

Users of this document should not rely solely on the information in this document, but should carry out their own tests to satisfy themselves that terminal equipment will work with the networks of KCOM Group PLC.

This document does not form a part of any contract with KCOM Group PLC customers or suppliers. KCOM Group PLC shall have no liability in contract tort or otherwise for any loss or damage, howsoever arising from use of, or reliance upon, the information in this document by any person.

Publication of this Customer Interface Information Document does not give or imply any licence to any intellectual property rights belonging to KCOM Group PLC or others

37 Carr Lane
Kingston Upon Hull
HU1 3RE

Contents

Note: this document replaces a previous publication KCL CIP009 on the same subject – see document history.

1. Scope

This document specifies the technical characteristics of a 155520 kbit/s (155Mbit/s) digital leased line interface operated by KCOM Group PLC delivered to a customer at the Network Terminating Point (NTP).

Much of the information contained in this document has been published previously in various documents such as ITU-T, ETSI and BSI standards.

Changes to the network that affect the correct working of approved terminal equipment will be published by KCOM Group PLC in various documents made available from the address below. If the changes impact on this document then it will be updated.

Enquiries relating to the technical content of this document and the availability of other publications should be directed to:

KCOM Group PLC Regulatory Affairs
37 Carr Lane,
Kingston Upon Hull.
HU1 3RE

Telephone: 01482 602100
E-mail: regulatory@kcom.com

2. General

The KCOM 155520 kbit/s (155Mbit/s) digital leased line service is presented to the customer via both the ITU-T recommendation G.703 (75ohm)[1] interface and the ITU-T recommendation G.957 [2] interface. The service is the KCOM Group PLC customer SDH service at the STM-1 level.

3. The Network Termination Point

3.1 ITU-T recommendation G.703

The network termination point shall be two unbalanced 75ohm BNC sockets labelled TFC IN and TFC OUT. The sockets shall be mounted on the Network Terminating and Test Apparatus (NTTA) / Network Terminating Equipment (NTE).

3.2 ITU-T recommendation G.957

The network termination point shall be a FC type optical connector conforming with BSEN 186110:1994 [3] mounted on the Network Terminating and Test Apparatus (NTTA)/Network

Terminating Equipment (NTE) based on the customer premises. The connector is Physical Contact polished (PC).

4. Electrical / Optical Characteristics of the Interface

4.1 ITU-T recommendation G.703

KCOM's 155520 kbit/s (155 Mbit/s) STM-1 digital leased line interface G.703 service is delivered using a digital bearer in accordance with clause 15 of ITU-T recommendation G.703[1].

4.2 ITU-T recommendation G.957

KCOM's 155520 kbit/s (155Mbit/s) STM-1 digital leased line interface G.957 service is delivered using an optical presentation via an optical single-mode fibre connection conforming with ITU-T recommendation G.957[2]. The STM-1 interface used will be dependent on the customer application

4.3 Frame Structure

The frame structure of the STM-1 signal is in accordance with ITU-T recommendation G.707[4] section 6.2 and utilises the AU-4 option.

4.4 Scrambling

The STM-1 is scrambled in accordance with Section 6.5 of ITU-T recommendation G.707 [4].

4.5 Section Overhead

The section overhead is in accordance with Figure 9.7 of ITU-T recommendation G.707 [4].

4.6 Tandem Connection Monitoring

Tandem connection monitoring can be supported in accordance with Annex C of ITU-T G.707 [4].

4.7 Jitter

Jitter from the terminal to the network can be accepted in accordance with ITU-T G.825 [5].
The level of jitter from the terminal to the network will be in accordance with ITU-T G.825 [5].

5. Safety & EMC Information

5.1 Safety

The normal working voltages of the ITU-T recommendation G.703 [1] 155,520 kbit/s (155Mbit/s) digital leased line interface are defined in clause 15 of ITU-T recommendation G.703 [1].
The interfaces presented to the customer is classified as unexposed as defined in the CENELEC Report/ETSI Guide ROBT-002/EG 201 212 [6].

5.2 EMC

The network equipment and network terminating equipment related to the provision of the interface comply with the current EMC regulations.

Whilst predominantly installed in commercial and light industrial environments, this does not preclude the interface being installed in other environments e.g. residential, industrial. This should be taken into account by the terminal equipment manufacturer when determining the limits of compliance relevant to their equipment in relation to the protection requirements of the EMC directive.

6. Terminal Equipment Specifications

No terminal equipment performance specifications are specified. See the relevant ITU-T specifications. The minimum recommended terminal equipment EMC specifications are listed in the Official Journal of
the European Communities for use under the Electromagnetic Compatibility Directive (89/336). The lists
are updated regularly and the terminal manufacturer is recommended to comply with the listed standards applicable to their equipment and the target electromagnetic environment.

The minimum recommended terminal equipment electrical safety specifications are listed in the Official Journal of the European Communities for use under the Low Voltage Directive (73/23/EEC). The lists are updated regularly and the terminal manufacturer is recommended to comply with the listed standards applicable to their equipment.

7. Glossary

BS	British Standard
BSI	British Standards Institute
EC	European Community
EMC	Electromagnetic Compatibility
ETS	European Telecommunication Standard
ETSI	European Telecommunications Standards Institute
ITU-T	International Telecommunications Union - Telecommunications Sector
NTE	Network Termination Equipment
NTP	Network Terminating Point
NTTA	Network Terminating and Test Apparatus
TE	Terminal equipment
TFC IN	Traffic In
TFC OUT	Traffic Out

8. References

Ref	Standard	Title	Date
[1]	ITU-T Recommendation G.703	Physical/Electrical Characteristics of hierarchical digital interfaces	2001
[2]	ITU-T G.957	Optical interfaces for equipments and systems relating to the synchronous digital hierarchy	1999
[3]	BSEN 186110	Sectional Specification. Connector Sets for Optical Fibre and Cables Type FC.	1994
[4]	ITU-T Recommendation G.707	Synchronous Frame Structures Used at Primary and Secondary Hierarchical Levels	1996
[5]	ITU-T Recommendation G.825	The Control Of Jitter And Wander Within Digital Networks Which Are Based On The Synchronous Digital Hierarchy (SDH)	1993
[6]	R0BT-002/EG 201 212 V.1.2.1 (1998-11)	Electrical Safety ; Classification of interfaces for equipment to be connected to telecommunications networks	1998

The above documents may be obtained from:

British Standards Institution
Customer Services, Sales Department
389 Chiswick High Road,
London
W4 4AL
Telephone: 0208 996 9001
Facsimile: 0208 996 7001

9. History

Date	Issue	Comments	Author
Precursor document Technical Characteristics of the 155Mbit/s digital leased line [Issue 1.0 May 2000] KCL CIP001			M.Budd
December 2003	Issue 1.0	Kingston Communications (HULL) PLC publication to replace the above	M. D. Crowther
August 2007	Issue 1.1	KCOM Group PLC publication to replace the above and contact changes.	M. D. Crowther
April 2016	Issue 1.2	KC name change to KCOM and document formatting updates	Amanda Woodard