Customer Interface Publication: KCOM (Hull) CIP020

Technical Characteristics of the KCOM Broadband Transport User Customer Interface

Issue:1.2
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Note: this document replaces Interface Publication KCL CIP016 on this subject.

1. Scope

This document specifies the technical characteristics of the broadband transport service and End User interface operated by KCOM Group PLC. The Electronic Communications Service Provider is dealt with in other publications.

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:

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2. General

The KCOM Group PLC broadband transport service can deliver high bandwidth services such as video, broadcast and high-speed internet multi-media based content to the customer or End User.

The service is available within defined geographic areas dependent on exchange availablity. ADSL technology is used and therefore there are technical reach limitations which prevent service delivery over long reaches from the exchange to the end-user.

Services will only be made available to end-users served by existing KCOM direct exchange lines. Services are encapsulated in raw UDP and IP and delivered to the customer via an Ethernet interface.
Services can be delivered using multicast (e.g. media broadcast services) or unicast (e.g. video on demand, Internet access) as required.

3.Multicast services

The Electronic Communication Service Provider’s encoded signals are encapsulated within a UDP / IP / Ethernet frame. The destination IP and MAC addresses of the frame are multicast. This frame is then encapsulated within an RFC1483 Bridged PDU for transmission via ATM point to multipoint. This ‘stream’ is then delivered to each customer interface that requests it.

4. Unicast services

The Electronic Communication Service Provider's encoded signals are encapsulated within a UDP / IP / Ethernet frame. The destination IP and MAC addresses of the frame are unicast. This frame is then encapsulated within an RFC1483 [6] Bridged PDU for transmission via an ATM PVC. This 'stream' is then delivered to the customer interface that requests it.

5. The User Connection Point

5.1 Physical Interface

The user connection point enables the customer equipment to connect to the KCOM Group PLC broadband transport service. The metallic line will be terminated using a filter/splitter arrangement which separates the broadband service from the telephony service.

The broadband customer connection will be presented as a 10Mbit/s twisted pair Ethernet interface (10BaseT) as specified in IEEE 802.3[1] ("Ethernet").

The broadband network termination point shall be presented as an RJ45 connector socket. The socket connection details are as follows:

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

The telephony interface presentation is defined in KCOM Group PLC Customer Interface Publication 001 (KCH CIP001). Note that insulation displacement and screw terminal connections will not be available with this presentation.

5.2 Service Delivery

For both multicast and unicast services the IP datagram is delivered over the ethernet interface in accordance with RFC1042 [4].

5.3 Service Access

In order to access services, customer equipment must support full TCP/IP in accordance with RFC 793 [3]
/ RFC 791 [2] and IGMP version 1 in accordance with RFC 1112 [5].

Internet standards change regularly. Consult the Internet Engineering Task Force (http://www.ietf.org) or the RFC editor (http://www.rfc-editor.org/rfc.html) for the latest status.

5.4 Bit Rates

The following bit-rates are achievable:

Service	Downstream	Upstream
Media	5.2 Mbit/s max	512kbit/s max
Internet	512 kbit/s max	512kbit/s max

Note: the bit-rates are dependent on the distance of the user from the local exchange.

6. Safety & EMC Information

6.1 Safety

The normal working voltages of the User Connection point interface are defined in IEEE 802.3[1]. The interface presented to the customer is classified as exposed as defined in CENELEC Report/ETSI Guide ROBT-002/EG 201 212 [7].

6.2 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 residential and commercial environments this does not preclude the interface being installed in other environments e.g. light industrial , 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.

7. Terminal Equipment Specifications

There are no recommended terminal equipment performance specifications available. The manufacturer is referred to the service definition specified in IEEE 802.3[1].

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.

8. Glossary

ADSL	Asymmetric Digital Subscriber Line
ATM	Asynchronous Transfer Mode
BSI	British Standards Institute
EC	European Community
EMC	Electromagnetic Compatibility
IEEE	Institute of Electrical and Electronic Engineers
IGMP	Internet Group Management Protocol
IP	Internet Protocol
MAC	Media Access Control
NTE	Network Termination Equipment
NTP	Network Terminating Point
NTTA	Network Terminating and Test Apparatus
PD	Published Document
PVC	Permanent Virtual Circuit
RFC	Request For Comment
TCP	Transmission Control Protocol
TE	Terminal equipment
UDP	User Datagram Protocol

9. References

Reference	Standard	Title	Date
[1]		Information technology—Telecommunications and information exchange between systems—Local and metropolitan area networks— Specific requirements—Part 3: Carrier sense multiple access with collision detection (CSMA/CD) access method and physical layer specifications	1998
[2]		Request for Comment : Internet Protocol	1981
[3]	RFC 793	Request for Comment : Transmission Control Protocol	1981
[4]	RFC 1042	Request for Comment : Standard for the transmission of IP datagrams over IEEE 802 networks	1988
[5]	RFC 1112	Request for Comment : Host extensions for IP multicasting	1989
[6]	RFC 1483	Request for Comment : Multiprotocol Encapsulation over ATM Adaptation Layer 5	1993
[7]	R0BT-002/EG 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 : 0209 996 7001

The RFC's can be obtained from the following URL

http://www.ietf.org

10. History

Date	Issue	Comments	Author
May 2000		Initial Document (KCL CIP016)	M. Budd
December 2003	Issue 1.0	Document reissued under new reference KCH CIP020. Minor text changes	M.D.Crowther
August 2007	Issue 1.1	Company name change to KCOM Group PLC and change of contact information	M.D.Crowther
April 2016	Issue 1.2	KC change of name to KCOM and document formatting changes	Amanda Woodard