



Customer Interface Publication: KCOM (Hull) CIP015

Technical Characteristics of the “Privateline” analogue leased line interfaces

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

© KCOM Group PLC
37 Carr Lane
Kingston Upon Hull
HU1 3RE

Contents

1. Scope
2. General
3. The Network Termination Point
4. Electrical Characteristics of the Interface
5. Safety and EMC information
6. Terminal equipment specifications
7. Glossary
8. References
9. History

Note: this document replaces Kingston Communications (HULL) PLC SIP011 on the same subject – see document history.

1. Scope

This document specifies the technical characteristics of the interfaces operated by KCOM Group PLC under the “Privateline” service 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

KCOM Group PLC offer a number of analogue leased line interface

presentations. There are two main categories of circuit:

- Analogue A (A/A) – a circuit engineered using a single pair of wires throughout the length of the circuit
- Analogue B (A/B) – a circuit engineered using two pairs of wires throughout the length of the circuit and 4 sub-categories :
 - SX – 2 local ends within the same exchange area
 - OX – 2 local ends are not in the same exchange area
 - MX – multipoint circuits
 - OO – interconnection with another operator

3. The Network Termination Point

The analogue leased line interface consists of either two or four conductors. Where two conductors are used they are designated as 'A' and 'B' wires and where four conductors are used they are provided in pairs designated as TFC in A & B and TFC out A & B.

The customer access to the analogue leased line interface can either be by a BS6312 [1] socket, an Insulation Displacement Connection (IDC) or Screw Terminal cable termination.

3.1 BS6312 Socket

When the analogue leased line is terminated with a BS6312 [1] socket, the following plug connections should be used

- | | |
|---|----------------|
| 1 | TFC Out A Wire |
| 2 | TFC In A wire |
| 3 | Not used |
| 4 | Not used |
| 5 | TFC In B wire |
| 6 | TFC Out B wire |

Note: Plug Latch is adjacent to Pin 6

3.2 Insulation Displacement Connectors

Where the analogue leased line interface is terminated on insulation displacement connectors they will support the connection of copper conductors having diameter between 0.35 mm and 0.65 mm.

3.3 Screw Terminal Connectors

Where the analogue leased line interface is terminated with screw terminal connectors they will support the connection of copper conductors having diameter of 0.35 mm and 0.9 mm.

4. Electrical Characteristics of the Interface

The KCL analogue leased line interface Engineering Performance Specifications (EPS) correspond closely with the pre – June 1999 British Telecom EPS.

The electrical characteristics are as follows:

KCOM (Hull) CIP 015

KCOM Group PLC

Issue 1.2

BT Service Name & EPS	KCOM PLC Circuit Type	Group	Presentation	Maximum Insertion Loss (dB)	Nominal Impedance	Other
Speechline Standard EPS1	A/A SX		2 wire	17	Configurable 600 Ω / 900 Ω / 1200 Ω	DC Path provided
EPS 2B	A/A SX		2 wire	6	Configurable 600 Ω / 900 Ω / 1200 Ω	DC Path provided
Speechline Premier EPS3D	A/B SX		2 wire	3	Configurable 600 Ω / 900 Ω / 1200 Ω	DC Path provided
			4 wire	3		
Speechline Network EPS3N	A/B SX A/B OX A/B OO		2 wire	3	Configurable 600 Ω / 900 Ω / 1200 Ω	
			4 wire	-4		
Speechline Omnibus Standard EPS61	A/A MX		2 wire	34	Configurable 600 Ω / 900 Ω / 1200 Ω	
Speechline Omnibus Premier EPS72	A/B MX		4 wire	3	Configurable 600 Ω / 900 Ω / 1200 Ω	
Keyline Standard EPS21	A/A SX A/A OX		2 wire	17	Configurable 600 Ω / 900 Ω / 1200 Ω	
Keyline Premier EPS25B	A/B SX A/B OX A/B OO		2 wire	3	Configurable 600 Ω / 900 Ω / 1200 Ω	
			4 wire	0		
Keyline Network EPS5J	A/B SX A/B OX A/B OO		4 wire	-4	Configurable 600 Ω / 900 Ω / 1200 Ω	
Keyline Baseband Standard EPS9	A/A SX		2 wire – own exchange only	40dB Ψ	140 Ω	
Keyline Baseband Premier EPS8	A/B SX		4 wire – own exchange only	40dB Ψ	140 Ω	
Keyline Multipoint Standard EPS51	A/B MX		2 wire	6dB	Configurable 600 Ω / 900 Ω / 1200 Ω	
Keyline Multipoint Premier EPS42	A/B MX		2 wire	6dB	Configurable 600 Ω / 900 Ω / 1200 Ω	
			4 wire	3dB		

Notes

1. Insertion loss is measured between 600Ω non-reactive impedances at 800Hz except as indicated thus 'Ψ' which are measured between 140 ohm resistive impedances at 10kHz / 20kHz.
2. The nominal impedance is the impedance required to terminate the line to avoid instability and enable effective power transfer. A minimum return loss of 12 dB is recommended for terminal equipment.

5. Safety & EMC Information

5.1 Safety

The "Privateline" analogue leased line interfaces do not supply a d.c. feed voltage. However, there is a possibility of induced voltages and transients appearing on the circuits. Further details can be found in BS6328 part 1 and 2 [2].

The interfaces presented to the customer are classified as exposed as defined in the CENELEC Report/ETSI Guide ROBT-002/EG 201 212 [3].

Where a DC path is provided, the following voltage and current limits should not be exceeded by the interface user:

- the open circuit voltage of any polarity with respect to earth applied to either leg of the DC path should not exceed 120 V peak
- the open circuit voltage applied between the two legs of the DC path should not exceed 200 V peak
- the current flowing in either leg of the path should not exceed 60 MA

These limits are designed to

- ensure the safety of KCOM Group PLC personnel
- protect the network from damage
- to ensure network overvoltage protection devices are not inadvertently triggered.
- to ensure that circuit transmission performance does not deteriorate

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 or 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

The minimum recommended terminal equipment performance specifications are:

- PD7020 : Connection to 2 wire analogue private circuits [4]
- PD7021 : Connection to 4 wire analogue private circuits [5]
- PD7028 : Connection to 2 wire baseband analogue circuits [6]

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
BT	British Telecom plc
EC	European Community
EMC	Electromagnetic Compatibility
EPS	Engineering Performance Specification
ETS	European Telecommunication Standard
ETSI	European Telecommunications Standards Institute
ITU-T	International Telecommunications Union – Telecommunications
NTE	Network Termination Equipment
NTP	Network Terminating Point
NTTA	Network Terminating and Test Apparatus
PD	Published Document
TE	Terminal equipment
TFC IN	Traffic In
TFC OUT	Traffic Out

8. References

Ref	Standard	Title	Date
[1]	BS6312	Connectors for analogue telecommunications interfaces	1994
[2]	BS6328	Apparatus for connection to private circuits : Part 1 : specification for apparatus for connection to speechband circuits Part 2 : specification for apparatus for connection to baseband circuits	1985
[3]	R0BT-002/EG 201212 V.1.2.1 (1998-11)	Electrical Safety ; Classification of interfaces for equipment to be connected to telecommunications networks	1998
[4]	PD7020	Essential requirements for connection to 2-wire analogue speechband leased lines of the public telecommunications network	1995
[5]	PD7021	Essential requirements for connection to 4-wire analogue speechband leased lines of the public telecommunications network	1995
[6]	PD7028	Essential requirements for connection to baseband leased lines of the public telecommunications network	1995

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 Privateline analogue leased line interfaces [Issue 1.0 May 2000] KCL CIP011)	M.Budd
December 2003	Issue 1.0	KCOM Group PLC publication to replace the above	M.D.Crowther
August 2007	Issue 1.1	KCOM Group PLC publication to replace the above and change of contact information	M.D.Crowther
April 2016	Issue1.2	KC name change to KCOM and document formatting	Amanda Woodard