



SIN 426

Issue 1.0
March 2006

Suppliers' Information Note

For The BT Network

FacilityLine Ethernet Option Service Description

Each SIN is the copyright of British Telecommunications plc. Reproduction of the SIN is permitted only in its entirety, to disseminate information on the BT Network within your organisation. You must not edit or amend any SIN or reproduce extracts. You must not remove BT trade marks, notices, headings or copyright markings.

This document does not form a part of any contract with BT customers or suppliers.

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 BT network.

BT reserves the right to amend or replace any or all of the information in this document.

BT 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.

Due to technological limitations a very small percentage of customer interfaces may not comply with some of the individual characteristics which may be defined in this document.

Publication of this Suppliers' Information Note does not give or imply any licence to any intellectual property rights belonging to British Telecommunications plc or others. It is your sole responsibility to obtain any licences, permissions or consents which may be necessary if you choose to act on the information supplied in the SIN.

This SIN is available in Portable Document Format (pdf) from: <http://www.sinet.bt.com>

Enquiries relating to this document should be directed to: help@sinet.bt.com

CONTENTS

1	INTRODUCTION.....	3
2	SERVICE OUTLINE	3
3	SERVICE AVAILABILITY	4
4	TECHNICAL SPECIFICATION.....	4
4.1	INTERFACE PRESENTATION.....	4
4.2	CUSTOMER TERMINATING EQUIPMENT (CTE) POWER REQUIREMENTS.....	5
5	FURTHER INFORMATION	5
6	REFERENCES.....	6
7	GLOSSARY.....	6
8	HISTORY.....	7

1 Introduction

This Suppliers' Information Note (SIN) describes the FacilityLine Ethernet Option and provides technical information for terminal equipment manufacturers, suppliers and developers.

2 Service outline

The FacilityLine Ethernet Option provides the transparent transport of Serial Digital Component Video (SDCV) at 270Mbit/s and allows Ethernet connectivity to the BT Ethernet services core.

The SDCV conforms to ITU-R Recommendations BT 601 ^[1] and 656 ^[2]. It also carries digital audio and optional programme related signals as detailed in clause 4 of this document.

Studio equipment based on the component ITU-R BT 601 signal standard offers an increase in quality compared with analogue composite PAL systems. The FacilityLine 270Mbit/s service therefore provides an increase in quality over the analogue composite PAL service. FacilityLine allows the transfer between broadcasters and facility houses of video material in the digital studio format, preserving the quality.

The FacilityLine Ethernet Option is a point-to-BT Tower oriented additional Ethernet service available to new and existing users of a FacilityLine Bothways service. Replacing and adding to existing circuit terminating equipment, it provides an Ethernet channel on the existing FacilityLine optical fibres, enabling customers to link their premises to an Ethernet hub at BT Tower. This service option is designed to provide access to dedicated Media/Broadcast services available at BT Tower.

The service option provides transparent, symmetrical, un-contended bandwidth between BT's termination equipment based at the customer site and the BT Ethernet services core switch based at BT Tower.

The access rates available is 100Mbit/s and 1000Mbit/s. No over-subscription / burst above the contracted circuit bandwidth is available with this service. The service is presented to the customer using 10Mbit/s and 100Mbit/s Ethernet interfaces via a single compact CTE meeting UK / International standards (IEEE 802^[4]).

The dedicated CTE will be provided at customer site locations delivering copper Ethernet interfaces. BT provides 24 x 10/100BaseT electrical ports.

The FacilityLine Ethernet Option will support Ethernet access with the following interfaces, as per SIN360^[3]:

- Ethernet: IEEE 802.3^[4] at 10Mbit/s
- Fast Ethernet: IEEE 802.3^[4] at 100Mbit/s

3 Service availability

The basic service provides a unidirectional digital 625 line 50 fields per second (or 525 line 60 fields per second) vision circuit operating at 270Mbit/s. The service is offered via a dedicated switch at the BT Tower, London, and circuits are limited to nominally 30km Radial Distance from that point. Circuits are provided in both directions.

The FacilityLine Ethernet Option is available to all new and existing customers of FacilityLine Bothways services. Access is provided via a dedicated Ethernet switch at BT Tower. The service consists of Ethernet connectivity at bandwidth rates of 100Mbit/s and 1000Mbit/s.

4 Technical specification

4.1 Interface presentation

The following interfaces are provided by the FacilityLine Customer Terminating Equipment (CTE):

Interfaces at the CTE	Electrical presentation	Physical presentation
Video	625/50 (or 525/60) SDCV to ITU-R BT 601-3 and 656-1 at 270 Mbit/s	Customer connection - 75 Ohm BNC Test access - 75 Ohm Musa U link (industry standard coaxial connector)
Audio - embedded option	As for video above Embedded in the SDCV as SMPTE 272M ^[5]	Same connector as video above
Audio - separate AES digital option	AES 3 1992 ^[6] / EBU tech 3250 ^[7] Balanced 110 Ohm	Customer connection - solder tags Test access - 2 by 4 mm U links
Audio - separate analogue option	Stereo circuit - 2 channels Each channel is a balanced pair with Z = 600 Ohm	Customer connection - solder tags Test access - 2 by 4 mm U links
Programme co-ordination circuits (CO-ORD) - optional	Balanced pair Z = 600 Ohm	Customer connection - solder tags Test access - 2 by 4 mm U links
Longitudinal timecode (LTC) - optional	Balanced pair Z = 600 Ohm	Customer connection - solder tags Test access - 2 by 4 mm U links
Remote machine control (RMC) - optional	RS 422	Customer connection - solder tags Test access - 2 by 4 mm U links

Table 1

All circuits are presented at the CTE utilising a patch panel. This provides customer cable connections at the rear and removable U links at the front providing test access as described in Table 1.

All the audio options referred to in Table 1 can be made available simultaneously to the customer on an incoming circuit.

For an outgoing circuit the equipment is configured to suit the customer's audio requirements within one of the following options:

- All audio is embedded.
- All audio is separately presented. Each of the two channels may be independently chosen as either analogue or digital presentation.

The following interfaces are provided by the Ethernet termination equipment:

Interfaces at the CTE	Electrical Presentation	Physical Presentation
10Mbit/s	10Base-T with IEEE 802.3 ^[4] Ethernet at 10Mbit/s	RJ-45 Copper
100Mbit/s	10oBase-T with IEEE 802.3 ^[4] Ethernet at 100Mbit/s	RJ-45 Copper

Table 2

4.2 Customer Terminating Equipment (CTE) Power Requirements

The following power requirement options are available for the FacilityLine CTE:

- For Standard installations the CTE is mains powered, and requires a customer supplied 240 V a.c. mains power source close to the installation.
- The CTE (power consumption 55W), may be powered from a customer provided -48 V d.c. nominal supply. As power supplies can vary slightly in output voltage and characteristics, the CTE will function with customer provided power supplies which conform to the latest issue of British Telecom Network Requirements (BTNR) 2511 ^[8]. Please consult BT regarding the availability of this option

The Ethernet option CTE requires a customer provided AC input voltage of between 100V to 127V or 200V to 240V with an AC input frequency: 47 to 63 Hz.

The power consumption is 30W maximum and the device produces 102 BTUs per hour.

Customer provided power supplies for connection to this service shall conform with relevant safety standards.

5 Further Information

For "sales and marketing" information about this service please telephone the Marketing Team on 00800 28 27 28 27. If you are calling from outside the UK, please dial ++44 2890 344 536. Alternatively, please contact your Company's BT account manager or e-mail: bsmarketing@bt.com.

If you have enquiries relating to this document then please email: help@sinet.bt.com

6 References

[1]	ITU-R BT 601	Studio encoding parameters of digital television for standard 4:3 and wide-screen 16:9 aspect ratios.	
[2]	ITU-R BT 656	Interfaces for digital component video signals in 525-line and 625-line television systems operating at the 4:2:2 level of Recommendation ITU-R BT.601 (Part A).	
[3]	SIN 360	Ethernet Customer Interfaces	
[4]	IEEE 802.3	Standards for Local Area Networks: CSMA/CD Access Method	
[5]	SMPTE 272M	Formatting AES/EBU audio and auxiliary data into digital video ancillary data space.	1994
[6]	AES 3	Serial transmission format for 2 channel linearly represented digital audio data.	1992
[7]	EBU Tech 3250	Draft supplement to format for user data channel of the digital audio interface. Appendix 2 to COM T 778/GT G111.	March 1991
[8]	BTNR 2511	Interface of telecommunications equipment with a nominal 48 volt negative dc power supply.	

For further information or copies of referenced sources, please see document sources at <http://www.sinet.bt.com/docsources.htm>.

7 Glossary

625/50	625 lines 50 fields per second video - the European standard
525/60	525 lines 60 fields per second video – the American / Japanese standard
AES	Audio Engineering Society
BTNR	British Telecom Network Requirements
CCIR	International Consultative Committee for Radio. Now known as ITU-R
CTE	Customer Termination Equipment
EBU	European Broadcasting Union
IEEE	Institute of Electronic and Electrical Engineers [USA]
ITU-R	International Telecommunications Union - Radio standardisation section (formerly CCIR)
Musa	Industry standard broadcast coaxial connector
PAL	Phase Alternate Line
SDCV	Serial Digital Component Video
SIN	Suppliers' Information Note
STIN	Suppliers' Trial Information Note
SMPTE	Society of Motion Picture and Television Engineers

8 History

STIN Issue 1.0	March 2004	Document first published as a STIN
Issue 1.0	March 2006	Document republished as a SIN.

-END-

***WE WOULD BE GRATEFUL IF YOU WOULD SPEND A FEW MINUTES TO
COMPLETE AN ONLINE CUSTOMER SATISFACTION FORM AT
WWW.SINET.BT.COM/HAPPY.HTM***