SIN 258

Issue 1.3

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Suppliers' Information Note

For The BT Network

BT FacilityLine 1

Service Description

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1 Introduction

This Suppliers Information Note (SIN) describes the BT FacilityLine 1 service and provides technical information for terminal equipment manufacturers, suppliers and developers.

2 Service outline

The BT FacilityLine 1 service provides the transparent transport of Serial Digital Component Video (SDCV) at 270Mbit/s and conforms with ITU-R Recommendations BT 601 [1] and 656 [2]. It also carries digital audio and optional programme related signals as detailed in section 4 below.

Studio equipment based on the component ITU-R BT 601 signal standard offers an increase in quality compared with analogue composite PAL systems. The BT FacilityLine 1, 270Mbit/s service, therefore provides an increase in quality over the analogue composite PAL service. BT FacilityLine 1 allows the transfer between broadcasters and their facility houses of video material in the digital studio format, preserving the quality.

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 30 km from that point. Circuits can be provided in both directions.

4 Technical specification

4.1 Interface presentation

The following interfaces are provided by the Network Terminating Equipment (NTE):

Interfaces at the NTE	Electrical presentation	Physical presentation
Video	625/50 (or 525/60) SDCV to ITU-R BT 601 and 656 at 270Mbit/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 [3]	Same connector as video above
Audio - separate AES digital option	AES 3 1992 [4] / EBU tech 3250 [5] Balanced 110 Ohms	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 ohms	Customer connection - solder tags Test access - 2 by 4 mm U links
Programme co-ordination circuits (CO-ORD) - optional	Balanced pair Z = 600 ohms	Customer connection - solder tags Test access - 2 by 4 mm U links
Longitudinal timecode (LTC) - optional	Balanced pair Z = 600 ohms	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 NTE 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.

4.2 Network Terminating Equipment (NTE) Power Requirements

The following power requirement options are available for the NTE:

- For Standard installations the NTE is mains powered, and requires a customer supplied 240 V a.c. mains power source close to the installation.
- The NTE (power consumption 55 Watts) 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 NTE will function with customer provided power supplies which conform to the latest issue of British Telecom Network Requirements (BTNR) 2511 [6]. Please consult BT regarding the availability of this option

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

5 Further Information

For further information please go to: http://www.broadcast.bt.com/contact-us.html

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]	SMPTE 272M	Formatting AES/EBU audio and auxiliary data into digital video ancillary data space.	1994
[4]	AES 3	Serial transmission format for 2 channel linearly represented digital audio data.	1992

[5]	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
[6]	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/usenum.htm#docsources

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
BABT	British Approvals Board for Telecommunications
BTNR	British Telecom Network Requirements
CCIR	International Consultative Committee for Radio. Now known as ITU-R
EBU	European Broadcasting Union
ITU-R	International Telecommunications Union - Radio standardisation section (formerly CCIR)
Musa	Industry standard broadcast coaxial connector
NTE	Network Terminating Equipment
PAL	Phase Alternate Line
SDCV	Serial Digital Component Video
SIN	Suppliers' Information Note
SMPTE	Society of Motion Picture and Television Engineers

8 History

Issue 1	22 February 1995	First Issued.
Issue 1.1	September 2001	Editorial Format Changes Only.
Issue 1.2	October 2003	Updated power arrangements / Reflect 525 capability / Approval Requirements statement removed, information available via SINet Useful Contacts page / References updated.
Issue 1.3	9 May 2008	Inserted new references for further information.

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