SIN 474

Issue 4.0

August 2014

Suppliers' Information Note

For The BT Network

Broadcast Access: 270MBit/s

Service and Interface Description

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1 Introduction

This Suppliers Information Note (SIN) describes Openreach's 270MBit/s Broadcast Access service and provides technical information for customers' (also referred to as Communications Providers – CPs) terminal equipment manufacturers and suppliers.

2 Service outline

Openreach's 270MBit/s Broadcast Access service provides optical transportation of compliant, framed signals which are presented electrically to Openreach on coaxial cable. The service conforms with standards ITU-R BT.656 [1], ITU-R BT.601 [2] and SMPTE-259M [3] for standard definition serial digital video (SDI) and ETSI EN50083 [4] for DVB-ASI.

This is an access service, which primarily allows the transportation of 270MBit/s Broadcast video circuits over fibre infrastructure, utilising new network terminating equipment (NTE).

The service is limited to a maximum fibre route length of 70Km. Route distance checks are carried out as part of the initial survey work, when an order has been placed.

A main link is limited to a maximum of 35Km radial distance measured between the BT Serving exchanges (intermediate and host exchanges) at each end of a Broadcast Access service.

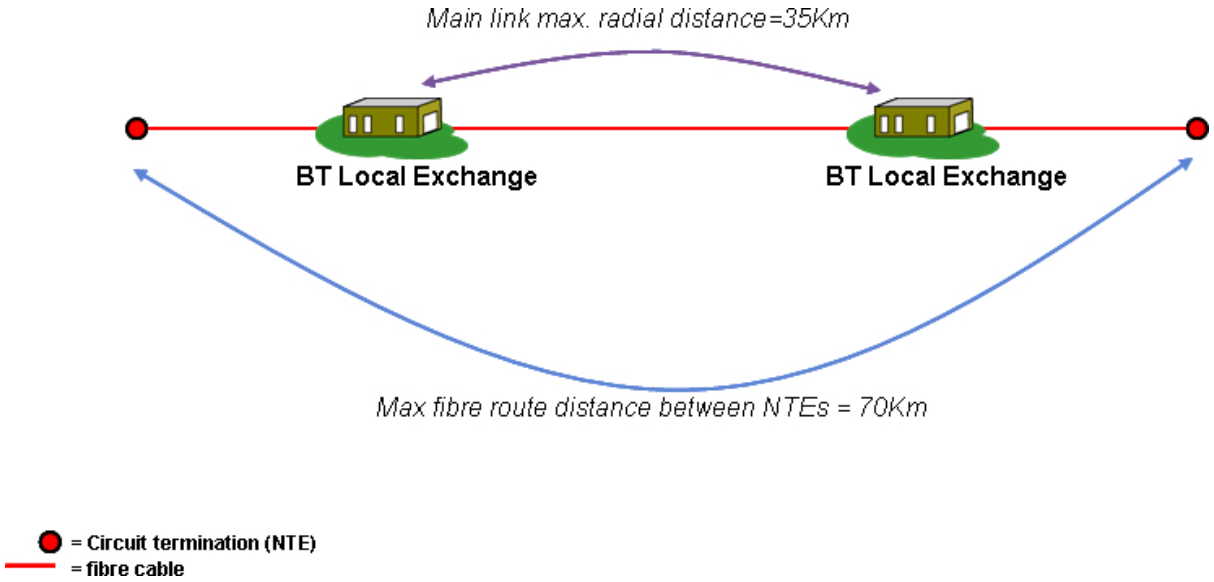

Figure 1 - Service Configuration

Please refer to the Broadcast Access product description for details of the circuit options available (http://www.openreach.co.uk/orpg/home/products/ethernetservices/broadcastaccess/broadcastaccess.doc).

3 Service availability

270MBit/s Broadcast Access circuits are available on a point to point basis within the UK.

The product will be available with a choice of unidirectional and bidirectional channel variants. All channels will operate at the same requested circuit bandwidth. These are as follows:

- Single channel unidirectional
- Dual channel unidirectional
- Quad channel unidirectional
- Single channel bidirectional
- Dual channel bidirectional
- Quad channel: dual unidirectional plus single bidirectional

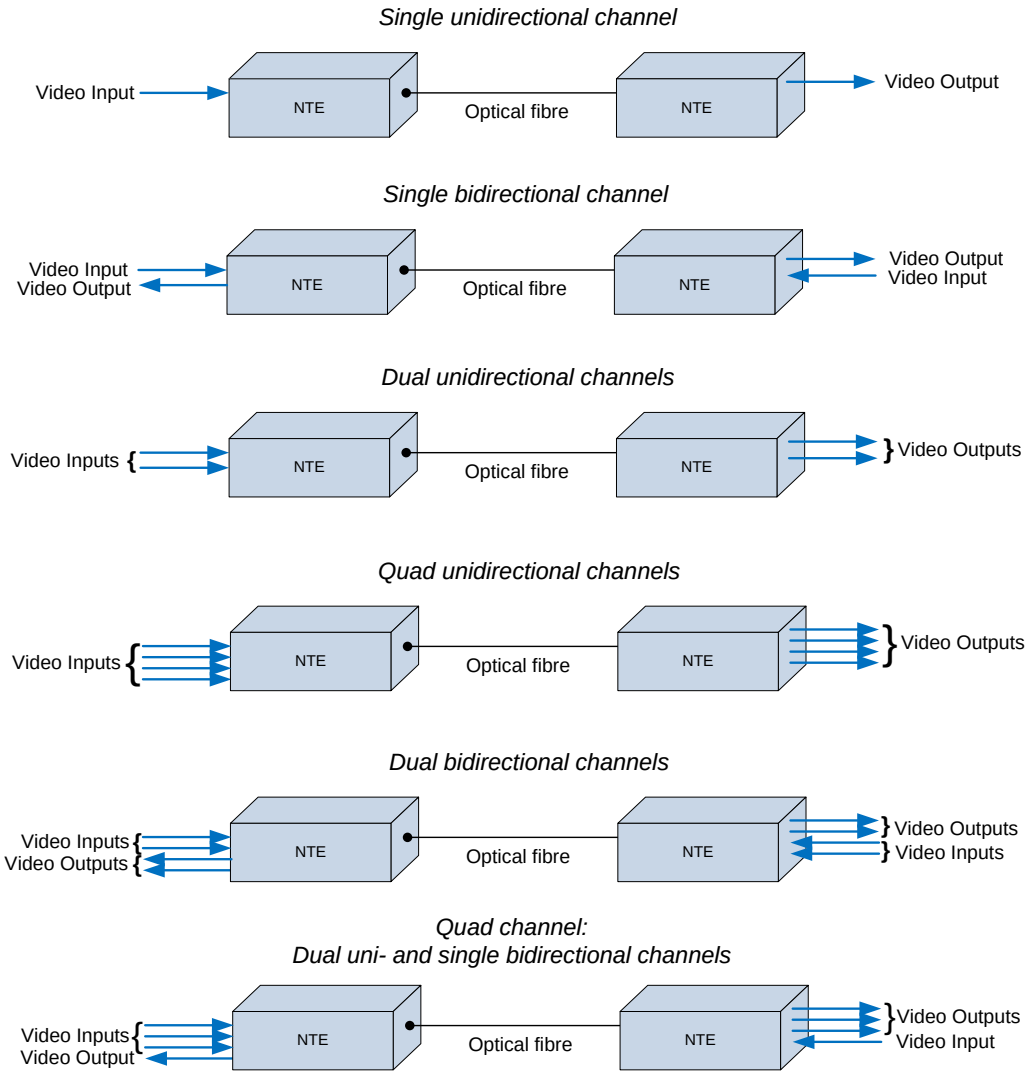

Figure 2 – Channel Variants

4 Technical specification

4.1 Overview

This product allows compliant 270MBit/s circuits to be transported between locations in the UK using BT's telecommunications optical fibre infrastructure. This is achieved by utilising specific NTEs, which perform electrical to optical, and optical to electrical signal conversion at each end of an optical fibre.

4.2 Standards compliance

Customer signals presented to the NTE for transportation must comply with ITU-R recommendations BT.601 [1], SMPTE-259M [3] or ETSI EN50083 [4]. Likewise, the signal *handed back* to the customer after transportation will comply with these requirements.

4.3 Interface presentation

The following interfaces are provided by the NTE:

Interfaces at the NTE	Electrical presentation	Physical presentation
270Mbit/s Input/Output	ITU-R G.656 [2], SMPTE-259M [3] and ETSI EN50083 [4]	Customer connection - 75 Ohm BNC

Table 1 – Interface presentation

CP connection to/from the NTE will be done directly to designated ports at the rear of the NTE chassis, there will be no patch panel interface. Ports to be used will be allocated when the CP procures the service.

4.4 Video Formats Supported

This product supports standard definition (270MBit/s SD-SDI) formats:

- 525/59.94
- 625/50

The product also supports 270MBit/s DVB- ASI

4.5 Test Patterns

The cards have an internal test pattern generator, which can help to keep circuits live and aid testing. This takes the form of a pre-defined 'colour bars' test pattern.

The test pattern will be enabled by default on 'A' end cards and disabled on 'B' end cards, and will be set to 270Mbit/s (SD-SDI) to correspond with the upper limit of the service provided. The test pattern can be enabled/disabled upon request. Please refer to the Broadcast Access product and process descriptions.

Note that a slightly different pattern is used for each of the three rates: 270Mbit/s (SD-SDI) – SIN474 refers, 1.485GBit/s (HD-SDI) SIN 475 refers or 3GBit/s (3G-SDI) – SIN507 refers.

5 Further information

For enquiries concerning connection availability between particular sites and for further "sales and marketing" information about this service please contact your BT Account Manager or Openreach Customer Business Manager.

See http://www.openreach.co.uk

For technical queries regarding the content of this document please submit an email query to the following address: broadcast.solutions@bt.com.

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

6 References

[1]	ITU-R Recommendation BT.601	Studio encoding parameters of digital television for standard 4:3 and wide screen 16:9 aspect ratios
[2]	ITU-R Recommendation 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
[3]	SMPTE Standard 259M	For Television — SDTV Digital Signal/Data — Serial Digital Interface
[4]	ETSI EN50083	Interfaces for CATV/SMATV Headends and similar Professional Equipment

For further information or copies of referenced sources, please see document sources at http://www.btplc.com/sinet/

7 Glossary

BNC	Bayonet Neill-Concelman Connector, Industry standard broadcast coaxial connector.
CP	Communications Provider.
DVB-ASI	Digital Video Broadcasting - Asynchronous Serial Interface.
ETSI	European Telecommunications Standards Institute.
ITU-R	International Telecommunication Union – Radiocommunication Sector. ITU-R was formally known as CCIR
NTE	Network Terminating Equipment.
SDI	Serial Digital Interface
SDV	Serial Digital Video
SIN	Suppliers' Information Note.
SMPTE	Society of Motion Picture and Television Engineers (standards body)

8 History

Issue 1	30 November 2007	First issue
Issue 2	June 2011	Introduction of 'Dual channel unidirectional + Single channel bidirectional' configuration option and clarification of video formats supported
Issue 3	January 2014	Updated to include SMPTE video standard
Issue 4	August 2014	Addition of section 4.5 (Test Patterns) Change SINet site references from http://www.sinet.bt.com to http://www.btplc.com/sinet/

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