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Suppliers' Information Note

For The BT Network

BT DIGITAL VIDEO BROADCASTING SERVICE USING THE ASYNCHRONOUS SERIAL INTERFACE

Service Description

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1 Introduction

This Suppliers Information Note describes the BT Digital Video Broadcast (DVB) service using the Asynchronous Serial Interface (ASI) and provides technical information for terminal equipment manufacturers, suppliers and developers.

The DVB Project Group^[1] has developed a specification, EN 50083-9^[2], for an ASI interface to enable interconnection of DVB based compressed video and audio signals known as transport streams.

2 Service Description

2.1 General

The BT DVB ASI service allows transport streams formatted in accordance with EN 50083-9^[2] to be carried across its telecommunications network via terminal multiplex equipment located on customers' premises.

The multiplexer network terminating equipment (NTE) is capable of accepting from one to sixteen ASI formatted transport streams. The demultiplexer is capable of delivering from one to sixteen ASI formatted signals. Individual transport streams can be accepted at any fixed rate from a minimum of 1.0 Mbit/s up to a maximum that is in excess of 100 Mbit/s. The maximum available figure will depend on the service option selected.

The service can be provided as a collection of circuits to provide a fixed network capable of interconnecting a number of locations.

The service is uni-directional.

2.2 Service Options

The service is available in two forms, Narrowband and Wideband. For Narrowband operation the maximum allowable bit rate for a single transport stream is approximately 32 Mbit/s. For Wideband service the maximum allowable bit rate for a single transport stream is approximately 130 or 175 Mbit/s depending upon the transport method adopted.

2.3 Service Availability

This service is available within BT's licenced area in the UK where network capacity exists.

2.4 Service Resilience

As a customer option, to provide high availability, the service can be provided with a primary circuit and an identical but fully diverse second circuit. With this customer option the NTE is also fully duplicated.

3 Technical Specification

3.1 Electrical Input Interface

The service accepts DVB compliant transport streams in ASI format. BT has a preference for non interleaved, byte stuffed ASI streams optimised for maximum linearity conforming to EN 50083-9^[2]. ASI transport streams with data interleaving can be accepted but BT cannot provide full monitoring of the ASI stream in this case.

Signals can be accepted in 188 byte packets or in 204 byte packet form. Where 204 byte packets are used the equipment will accept signals either with or without Reed-Solomon forward error correction signals in (188,204) form.

The Termination and Source Impedance is 75 ohms unbalanced.

3.2 Electrical Output Interface

BT will deliver to customers DVB compliant transport streams.

The streams will be in ASI format byte stuffed and optimised for maximum linearity. If the input is interleaved then the output will be interleaved and vice versa.

The output interface from the BT network will be provided as follows:

Signal Interface will be DVB ASI as EN 50083-9^[2]

Termination / Source Impedance is 75 ohms unbalanced

3.3 Physical Input and Output Interface

The physical input and output presentation of the service is by BNC socket. The sockets conform to the generic requirements of IEC 169-8^[3] with the mating dimensions specified in annex B of BS ISO/IEC 10173:1991^[4].

4 Customer Accommodation

The service requires the customer to provide accommodation (including space, power, security and environmental control) for the terminating equipment.

The Network Terminating Equipment (NTE) is rack/cabinet mounted using standard 19 inch rack mounting practice.

5 Network Terminating Equipment Power Requirements

5.1 Power Requirements

The NTE can be ac mains or dc powered.

For ac mains operation the rack/cabinet requires a customer supplied local mains 10 amp un-switched fused spur 50 Hz power source within 2 metres of the equipment.

For dc operation the NTE requires a -48 volt DC power supply provided by a Power Unit.

A customer supplied -48volt DC supply shall conform to EN 60950^[5], EN 41003^[6] and BTNR 2511^[7].

The maximum power consumption of the NTE is 140 watts.

NOTE: A 13 amp socket from a technical supply for test equipment in close proximity to the rack/cabinet should be supplied.

5.2 Earthing Arrangements

A quiet earth will be required for the equipment.

The normal mains supply earth should not be connected to the BT rack/cabinet in addition to the Quiet (Technical) Earth.

Inter-Rack earthing (i.e.: between the BT rack and any customer rack). Customer rack earth must not be mains earth. The resistance between the BT rack and the Customer rack, must be less than 0.5 Ohms.

The mains safety earth should not be connected to the quiet / technical earth as this will compromise noise performance and introduce earth loops.

6 Approval Requirements

The customers premises equipment and customer provided power supplies shall conform with the LVD (Low Voltage Directive). BS EN 60950^[5] is normally used to demonstrate this compliance.

Reference should be made to BABT 701 for the application of these standards. BABT 701 is available from BABT.

7 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

8 References

8.1 DVB Standards:

[1]	DVB Project	A Geneva based project which develops D igital V ideo B roadcast (DVB) requirements and standards for different types of broadcasting applications	N/A
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8.2 British Standards

[2]	BS EN 50083-9	Interfaces for CATV/SMATV headends and similar professional equipment for DVB/MPEG-2 transport streams	2002
[3]	IEC 169-8	Radio-frequency connectors - Part 8 : R.F. coaxial connectors with inner diameter of outer conductor 6.5 mm (0.256 in) with bayonet lock - Characteristic impedance 75 ohms (Type BNC)	1978
[4]	BS ISO/IEC 10173	Integrated Services Digital Network (ISDN) Primary Access Connector at Reference Points S and T	1991
[5]	BS EN 60950	Safety of information technology equipment, including electrical business equipment	1992
[6]	BS EN 41003	Particular safety requirements for equipment connected to telecommunications networks.	1993

8.3 British Telecom Network Requirements

[7]	BTNR 2511	British Telecom Network Requirements Interface of Telecommunications Equipment - Nominal 48 Volt negative DC power supply	Latest issue
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For further information or copies of referenced documents please see document sources <http://www.sinet.bt.com/usenum.htm#docsources>

9 Abbreviations

ASI	Asynchronous Serial Interface
BABT	Formally known as the British Approvals Board for Telecommunications
BTNR	British Telecom Network Requirements
DVB	Digital Video Broadcasting
NTE	Network Terminating Equipment
Reed-Solomon Coding	A type of error correction coding adopted by the DVB Project
SIN	Suppliers' Information Note
Technical Supply	A quiet /filtered mains supply

10 History

Issue 1	January 1999	First Issued
Issue 1.1	October 2000	Editorial review
Issue 1.2	March 2004	DVB specification updated to reflect BS EN 50083-9. Approval Requirements section edited, information available via SINet Useful Contacts page. Contact details updated.

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