SIN 375

Issue 1.6

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Suppliers' Information Note

For The BT Network

Terminal Equipment Spectral Power Requirements

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Registered Office 81 Newgate Street LONDON EC1A 7AJ
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1. Scope

This Suppliers Information Note (SIN 375) relates to the requirement for equipment connected to all metallic twisted pairs of the BT access network to comply with the "Specification of the Access Network Frequency Plan (ANFP) applicable to transmission systems used on the BT Access Network" [1].

This document encompasses all BT switched and leased line services [i] utilising the metallic twisted pairs of the BT access network. Service declarations for 'PSTN - Single Analogue Line Interface' SIN 351 [2], and 'Analogue Private Circuit - 2-Wire and 4-Wire Interfaces' SIN 355 [3], expand on the information contained in this SIN in order to highlight the service specific issues of Home Phoneline Networking, and compatibility of DSL technology with Baseband analogue private circuits.

Changes to the network that affect the correct working of terminal equipment will be published in BT SINs. If the changes impact on the content of this document then it will be updated.

2. Terminal Equipment Spectral Requirements

To prevent undue interference with other users of the BT access network, terminal equipment needs to conform to the requirements of the "Specification of the Access Network Frequency Plan (ANFP) applicable to transmission systems used on the BT Access Network" [1]. This ANFP defines six application points, each of which has a dedicated PSD limit mask(s). These application points are as follows:

Point of Application of the ANFP	PSD Mask specification
MDF (at an MDF site/exchange) connected to metallic access network cables routed to an NTP via a SLCP.	Part A
SDF (as a sub-loop connection point)	Part B
NTP (at the customer's premises)	Part C
MDF Exchange Outlet (at an MDF site/exchange) connected to metallic access network cables routed directly to an NTP	Part D

[i] The following services are for the purpose of example, and are by no means exhaustive of the BT service offerings which utilise the metallic pairs of the access network:

PSTN- Single line / Multi-line

Analogue Private Circuits - 2-wire & 4-wire

Redcare

Featureline

Exchange line

Featurenet

Broadcast / Music / Video circuits

Next Generation Access

without a SLCP included in the routing and not sharing a cable sheath containing cables routed via a SLCP.	
G.fast SDF (as a G.fast sub-loop connection point)	Part E
G.fast NTP (at the customer's premise), paired with Part E	Part F

Table 1 - Interface Categories [1].

Part B of the ANFP defines a range of PSD masks for the cabinet SDF depending on the loss from the MDF site to the SDF site (i.e. the loss of the E-side cable) . As there may be more than one type and route of cable between these two sites with disparate losses the nominal loss for a given cabinet may be based on the statistics of these losses, with the resulting loss figure being called the Cabinet Assigned Loss (CAL).

A Cabinet Assigned Loss will be identified for all BT cabinets based on estimates of the losses of all the cables between the MDF site and the SDF site. New BT cabinets will be given a Cabinet Assigned Loss upon completion of their installation. Once the assignment has been made, it is fixed and will only change if that cabinet (or the cables terminating on the cabinet) are subject to a significant engineering modification (e.g. re-routing due to a road development scheme) or to an ANFP assignment check process that results in a change in the assignment.

Part C of the ANFP divides the access network metallic loops into five line categories, 'ultra short', 'extra short', 'short', 'medium', and 'long'. Each category has an associated Power Spectral Density mask (PSD) defining the maximum power for each frequency that may be injected into the line at the customer end of the local loop. Once the ANFP categorisation has been undertaken, the ANFP category for a given line is fixed and will only change if that line (or the lines terminated on the same Distribution Point {DP}) is subject to a significant engineering modification (e.g. re-routing due to a road development scheme).

Equipment that has been approved under the UK terminal equipment approval regime that existed prior to the implementation of the RE&TTE Directive [4], which is transposed into UK law by SI (Statutory Instrument) 2000 No.730 [5] as amended by SI 2003 No.1903 [6] and SI 2003 No.3144 [7], is deemed to be compliant with the ANFP. Customers requiring clarity on the compliance of their terminal equipment with the ANFP are advised to contact their terminal equipment supplier.

If interference is caused to other users of the BT access network, and this is identified as resulting from terminal equipment being non-compliant with the ANFP, BT will be required to take remedial action to remove the cause of the interference. This could ultimately result in the disconnection of the circuit from the non-compliant terminal equipment.

3. Glossary

ANFP	Access Network Frequency Plan
CAL	Cabinet Assigned Loss
DP	Distribution Point
DSL	Digital Subscriber Line
MDF	Main Distributioin Frame

NTP	Network Termination Point (in customer's premises)
PSD	Power Spectral Density
RE&TTE	Radio Equipment and Telecommunications Terminal Equipment
SDF	Secondary Distribution Frame (in street cabinet)
SI	Statutory Instrument
SIN	Suppliers' Information Note
SLCP	Sub Loop Crossconnection Point (i.e. street cabinet)

4. References

[1]	**NICC Document ND 1602: 2016/03**	Specification of the Access Network Frequency Plan applicable to transmission systems used on the BT Access Network – Issue 6.1.1. *Note: This document is available at* http://www.nicc.org.uk
[2]	**SIN 351**	'BT Public Switched Telephone Network (PSTN): Technical Characteristics Of The Single Analogue Line Interface'.
[3]	**SIN 355**	'BT Analogue Private Circuits: Technical Characteristics of 2-Wire and 4-wire Analogue Interfaces'.
[4]	**RE&TTE Directive**	Directive 1999/5/EC of the European Parliament and of The Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity, OJ L91, 7.4.1999, p.10.
[5]	**SI 2000 No.730**	"The Radio Equipment and Telecommunications Terminal Equipment Regulations 2000" UK Statutory Instrument 2000 No. 730 published on 13 March 2000.
[6]	**SI 2003 No.1903**	The Radio Equipment and Telecommunications Terminal Equipment (Amendment) Regulations 2003
[7]	**SI 2003 No.3144**	The Radio Equipment and Telecommunications Terminal Equipment (Amendment No.2) Regulations 2003

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

5. History

Issue 1	December 2000	First Issued.
Issue 1.1	February 2003	Edited to reflect ANFP Issue 2 and introduction of the 'extra short' line category. Clause 2 – Reference to the RE&TTE Directive and SI 2000 No.730 added.
Issue 1.2	February 2004	Clauses 2 and 4- References to SI 2003 No.1903 and SI 2003 No.1344 added. Clause 4 - up-date to URL link to BT ANFP specification.
Issue 1.3	September 2005	Edited to reference the new Issue of the BT ANFP published by NICC.
Issue 1.4	November 2011	Updated the list of example products that relate to this SIN and updated reference to the ANFP published by NICC.
Issue 1.5	November 2015	ANFP Section updated Changed SINet site references from http://www.sinet.bt.com to http://www.btplc.com/sinet/
Issue 1.6	April 2016	ANFP section updated

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