SIN 284

Issue 1.7
December 2017

Suppliers' Information Note

For The BT Network

BT Redcare®
Service Description and
Technical Information for Suppliers

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.

Those services marked ® indicates it is a registered trade mark of British Telecommunications plc.

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

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

© British Telecommunications plc
Registered Office 81 Newgate Street LONDON EC1A 7AJ
Registered in England no.1800000

CONTENTS

1. INTRODUCTION 3

2. SERVICE OUTLINE 3

3. SERVICE AVAILABILITY 3

3.1 SERVICE COVERAGE 3
3.2 Protected Premises Provision 3
3.2.1 Network Limitations 3
3.2.2 Terminal Incompatibility 4
3.3 ALARM RECEIVING CENTRE PROVISION 4

4. DESCRIPTION OF INTERFACES 4

4.1 PROTECTED PREMISES NETWORK TERMINATING EQUIPMENT 4
4.1.1 BT 80A/92A 5
4.1.2 LTU 102/3A 6
4.1.3 Interface Characteristics 7
4.1.4 Signalling Characteristics 7
4.2 ALARM RECEIVING CENTRE NETWORK TERMINATING EQUIPMENT 7
4.2.1 V.24 / V.28 Interface 7
4.2.2 Ethernet Interface 8

5. FURTHER INFORMATION CONTACT POINTS 8

6. INTELLECTUAL PROPERTY INFORMATION 8

7. TERMS AND ABBREVIATIONS 9

8. REFERENCES 10

9. HISTORY 10

FIGURES

FIGURE 1 AN EXPLANATORY PICTURE OF INTERFACE USING BT 80A/92A. 5
FIGURE 2 AN EXPLANATORY PICTURE OF AN INTERFACE USING LTU 102/3A 6

® Redcare is a Registered Trade Mark of British Telecommunications plc

1. Introduction

This Suppliers' Information Note (SIN) gives information about the BT Redcare Service which is provided from a Protected Premises over the BT analogue local access network and the BT Redcare network to an Alarm Receiving Centre.

2. Service Outline

Making use of the BT analogue local access network and a dedicated BT Redcare network, the BT Redcare Service provides a secure line monitoring service aimed at alarm monitoring and reporting and hence at the intruder and fire alarm markets.

By means of continuous monitoring of the transmission link, and the status of the alarm reporting equipment in the Protected Premises, the service is able to quickly detect alarm activities or attempts to compromise the continuity of the communications link. The information thus gathered is passed through the BT Redcare network to an alarm company central receiving station known as an Alarm Receiving Centre.

3. Service Availability

3.1 Service Coverage

The service is available nationally where network capacity exists.

For further information on national service coverage please contact:

Redcare General Information Helpdesk
0800 800 828

3.2 Protected Premises Provision

The BT Redcare Service will deliver, and respond to, specific encrypted signals carried over exchange lines provided in the local network.

3.2.1 Network Limitations

There are some circumstances when the BT Redcare Service cannot be provided, for instance, if the exchange line is provided by a local access delivery system. In such cases a PSTN exchange line would be needed which does not make use of, for instance, a pair-gain concentration device.

BT Redcare connections were made ADSL compatible in Feb 2004. For further information on service provision please contact:

Redcare General Information Helpdesk
0800 800 828

3.2.2 Terminal Incompatibility

There are some circumstances when the BT Redcare Service may be incompatible with existing terminals. Such incompatibility may occur with, for instance, modems, facsimile, payphones, Private Exchanges or if the REN of 4 is exceeded. Such occasions are relatively rare with the introduction of the latest Redcare fifth generation STU.

If incompatibility remains a difficulty then a separate PSTN exchange line would need to be provided.

For further information on service provision please contact:

Redcare General Information Helpdesk
0800 800 828

3.3 Alarm Receiving Centre Provision

The BT Redcare Service will deliver the information gathered by means of continuous monitoring of the transmission link at the Protected Premises over the BT Redcare network to an alarm company central receiving station known as an Alarm Receiving Centre.

4. Description of Interfaces

4.1 Protected Premises Network Terminating Equipment

The BT Redcare Protected Premises NTE is provided either as a BT 80A/92A line box or Line Terminating Unit (LTU) 102/3A.

Both of these are provided for BT Redcare by Openreach from a standard PSTN line box (NTE).

4.1.1 BT 80A/92A

Interface using BT 80A/92A

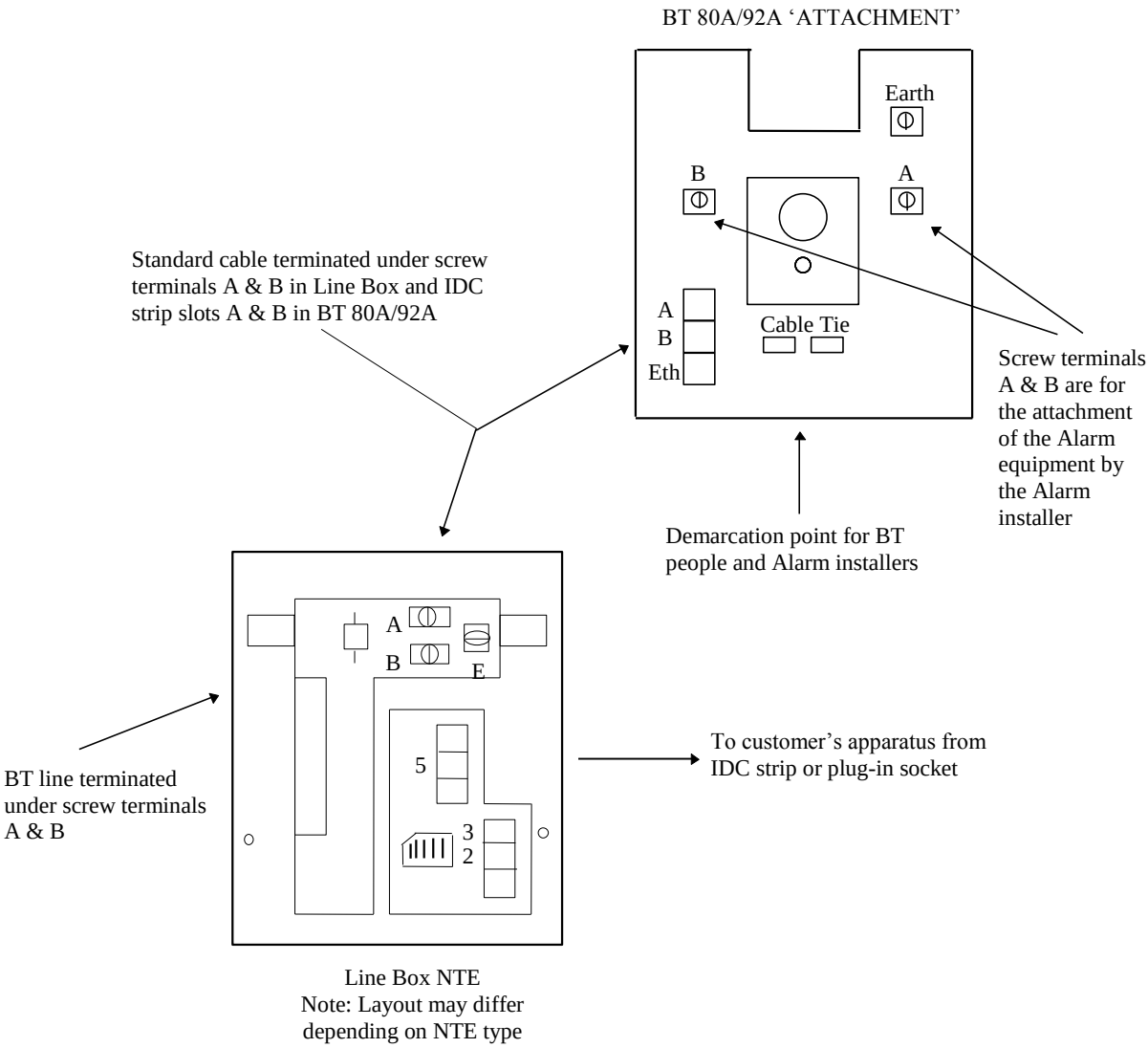

Figure 1 An Explanatory Picture of Interface using BT 80A/92A.

4.1.2 LTU 102/3A

Interface using LTU 102/3A.

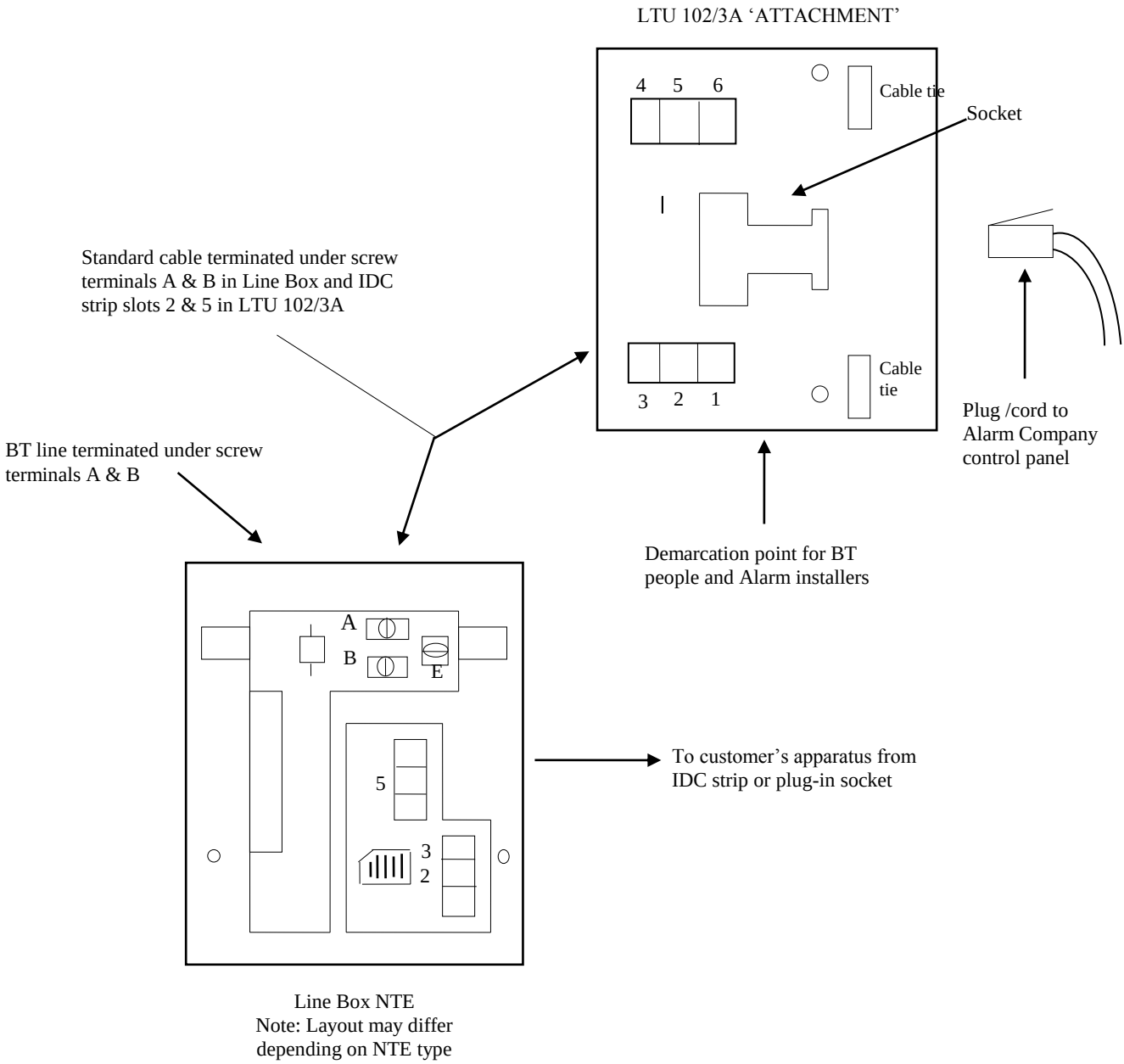

Figure 2 An Explanatory Picture of an Interface using LTU 102/3A

4.1.3 Interface Characteristics

The interface characteristics of the BT Redcare Protected Premises service are those of the BT PSTN.. The exception is the ability to accept out-of-speech-band signals.

4.1.4 Signalling Characteristics

In the Normal (Upped) State the prescribed Terminal Equipment (known as an STU) transmits a continuous out-of-speech-band signal which is modulated and contains an encrypted identity message. This out-of-speech-band signal is detected by the BT Redcare Scanner at the BT local exchange and is used to maintain the integrity of the system.

If this out-of-speech-band signal is lost, or the data encoded in the signal is not correct, the BT Redcare Scanner will schedule a 'POLL' signal to be sent to the STU.

The POLL signal is an in-speech-band signal of duration approximately 500 ms containing data encrypted with the unique key for that STU. It is injected into the PSTN exchange line irrespective of the line status of any other TE (hence it may be audible to a telephone user). The STU (if it is in the Normal State) will respond with a 'RESPONSE' in-speech-band signal.

The POLL-RESPONSE data exchange is the method by which alarm and status information is passed between the STU and the Scanner.

If an alarm is triggered at the protected premises, the STU receives relevant signals from the alarm system and immediately ceases the transmission of the out-of-speech-band signal to the BT RedCARE Scanner. This cessation of the out-of-speech-band signal forces a POLL-RESPONSE cycle as detailed above and allows the transmission of the alarm signal in the response message.
A typical alarm transmission exchange from the assertion of the alarm trigger to the POLL-RESPONSE message sequence is typically 8 seconds. This gives an end-to-end transmission time (from alarm trigger to delivery to the Alarm Receiving Centre) of less than 20 seconds, which is a requirement of the relevant British Standard for Intruder AlarmSystems

BS EN 50131-1:2006+A2:2017[1],

Additional information regarding the implementation of alarm transmission systems and equipment, for systems using dedicated alarm paths, can be found in BS EN 50136-1-:2012[2].

4.2 Alarm Receiving Centre Network Terminating Equipment

4.2.1 V.24 / V.28 Interface

The BT RedCARE Alarm Receiving Centre Network Terminating Equipment (NTE) provides an interface conforming to ITU-T V.24[3]/V.28[4] (RS-232-C) and is configured as Data Communications Equipment. It is an industry standard serial binary data port using a 25 way female D-type connector. The physical interface is 3-wire comprising transmit, receive and common ground.

The interface parameters are:-
Asynchronous data format
Baud rate: configurable from a range of 1200, 2400, 4800, 9600, 19200
Data bits: 8
Parity: none
Stop bits: 1
Flow control: software DC1/DC3 (Xon/Xoff), as defined in ITU-T T.50[5] , for control of inbound signals to ARC only
Start bits: 1

4.2.2 Ethernet Interface

The BT Redcare Alarm Receiving Centre Network Terminating Equipment (NTE) provides a 10/100BaseTX auto-speed sense Fast Ethernet port conforming to IEEE 802.3[6] for IP connection to the BT RedCARE network. It is provided as an industry standard RJ45 port requiring CAT5 compliant cabling between the NTE and the customer equipment.

5. Further Information Contact Points

For "sales and marketing" information about this service please contact your preferred alarm company.

Alternatively please contact either

- Your Company's BT Account Manager.
- For Personal customers, BT Sales 0800 800 150 for product and service information, sales and rental enquiries.
- For Business customers, BT Sales 0800 800 152 for product and service information, sales and rental enquiries.
- For general enquiries about BT Redcare, the Redcare General Information Helpdesk 0800 800 828.

6. Intellectual Property Information

The security-oriented nature of the service requires the use of an encrypted signalling method that is the subject of Intellectual Property (IP).

Terminal Equipment (TE) suppliers wishing to obtain relevant information regarding this Intellectual Property should contact:

Redcare – General Manager

Faraday Building
1 Knightrider Street
London

EC4V 5BT

Telephone 0800 800 828

7. Terms and Abbreviations

Abnormal (not-upped state)	An electrical condition into which the TE when connected to the network is placed such that it is quiescent
ADSL	Asymmetric Digital Subscriber Line
ARC	Alarm Receiving Centre
BS	British Standard
CARE	Communicating Alarm Response Equipment
CAT5	Category 5 Cable (Used in 100 Base-T Fast Ethernet networks)
CSMA/CD	Carrier Sense Multiple Access / Collision Detect
D-Type	Computer industry standard connector
DCE	Data Circuit-Termination Equipment
DTE	Data Terminal Equipment
IEEE	Institute of Electronic and Electrical Engineers
IP	Internet Protocol
IP	Intellectual Property
ITU-T	International Telecommunication Union – Telecommunications Standardisation Sector
Normal (upped State)	An electrical condition into which the TE when connected to the network is placed such that it transmits an out-of-speech-band signal which is modulated and contains an encrypted identity message
NTE	Network Terminating Equipment
REN	Ringer Equivalence Number, determined by test method as described in BS 6305
RS-232	Physical Interface electrically unbalanced allowing data exchange to ITU-T V.24
SIN	Suppliers' Information Note
STU	Subscribers' Terminating Unit
TE	Terminal Equipment

8. References

[1]	BS EN 50131-1:2006+A2:2017 Alarm systems – Intrusion and hold up systems
[2]	British Standard EN 50136-1-2:2012 - Alarm Systems - Alarm Transmission Systems and Equipment. Part 1-2:
[3]	ITU-T Recommendation V.24 - List of Definitions for Interchange Circuits between Data Terminal Equipment (DTE) and Data Circuit-Termination Equipment (DCE).
[4]	ITU-T Recommendation V.28 - Electrical Characteristics for Unbalanced Double-Current Interchange Circuits.
[5]	ITU-T Recommendation T.50 – International alphabet N°5.
[6]	IEEE 802.3, Standards for Local Area Networks: CSMA/CD Access Method.

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

9. History

Issue 1	August 1999	First Issue
Issue 1.1	November 2001	Editorial update
Issue 1.2	August 2003	ARC Ethernet interface option added (Clause 4.2.2). Approval Requirements statement removed, information available via SINet Useful Contacts page. Contact telephone numbers updated.
Issue 1.3	November 2003	ADSL compatibility statement updated (Clause 3.2.1)
Issue 1.4	December 2004	Contact telephone number updated. Time expired information on ADSL compatibility removed.
Issue 1.5	February 2011	Contact details in Section 6 updated
Issue 1.6	November 2014	Change SINet site references from http://www.sinet.bt.com to http://www.btplc.com/sinet/
Issue 1.7	December 2017	Update to Intruder Larm transmission Systems and General Manager address

< END >