TÜV Rheinland Group

Test Report

Test Report No. : **21119728_001**

Client : **Junghanns.NET GmbH**

System under Test : **quadBRI PCI ISDN**
V 1.0

TÜV Rheinland Product Safety GmbH
Section Telecommunications

Am Grauen Stein
51105 Köln

Contact Person : **Klaus Jauernik**
Tel. : **+49-221-806-3428**
Fax : **+49-221-806-1605**

Prüfbericht - Nr.: *Test Report No.:*	**21119728_001**	**Seite 1 von 1** *Page 1 of 1*
Auftraggeber: *Client:*	**Junghanns.NET GmbH** **Breite Strasse 13A, 12167 Berlin** **Germany**	
Gegenstand der Prüfung: *Test item:*	**PCI card with four ISDN Basic Rate Interface (BRI) ports.**	
Bezeichnung: *Identification:*	**quadBRI PCI ISDN** **V 1.0**	**Serien-Nr.:** *Serial No.:* **49109154**
Wareneingangs-Nr.: *Receipt No.:*	**69632**	**Eingangsdatum:** *Date of receipt:* **2005-06-07**
Prüfort: *Testing location:*	**KÖLN**	
Prüfgrundlage: *Test specification:*	**TBR 3 (11.95), TBR 3 / A1 (12.97), AS/ACIF S031:2001.** **Funktionale Prüfung der Layer 1, 2 und 3.** **Functional tests of layer 1, 2 and 3.**	
Prüfergebnis: *Test Result:*	**Der vorstehend beschriebene Prüfgegenstand wurde geprüft und entspricht oben genannter Prüfgrundlage.** *The a. m. test item passed.*	

Prüflaboratorium/ *Testing Laboratory:*

geprüft/ *tested by:*			**kontrolliert**/ *checked by:*		
2005-07-11	Klaus Jauernik		2005-07-11	Glenn Zimmermann	
Datum *Date*	**Name** *Name*	**Unterschrift** *Signature*	**Datum** *Date*	**Name** *Name*	**Unterschrift** *Signature*

Sonstiges/ Other Aspects:

Der Prüfbericht besteht aus diesem Deckblatt und dem folgenden Prüfbericht (SCTR + PCTR) Nr.: 21119728_001.
The testreport includes this cover sheet and the following test report (SCTR + PCTR) number: 21119728_001.

Die Prüfung der Hardware wurde im Prüfbericht 2110963_001 vom 2004-02-04 durchgeführt.
For the hardware tests please look at testreport 2110963_001 dated 2004-02-04.

Abkürzungen:			*Abbreviations:*		
	ok / P	*= entspricht Prüfgrundlage*		*ok / P*	*= passed*
	fail / F	*= entspricht nicht Prüfgrundlage*		*fail / F*	*= failed*
	n.a. / N	*= nicht anwendbar*		*n.a. / N*	*= not applicable*

TÜV Rheinland Group

Test Report

Documents enclosed:

- Test Report overview (this page)	**(1 page)**
- System Conformance Test Report	**(10 pages)**
- Protocol Conformance Test Report, Layer 1	**(23 pages)**
- Protocol Conformance Test Report, Layer 2	**(12 pages)**
- Protocol Conformance Test Report, Layer 3	**(17 pages)**
- Protocol Conformance Test Report, Australian Deviatioons	**(15 pages)**
- Annex Testlog	**(1 page(s))**
- Annex PICS/PIXIT	**(10 page(s))**
- Annex Photo	**(3 page(s))**
Total Number:	**92 pages**

Test Report No. : 21119728_001

Client : Junghanns.NET GmbH

System under Test : quadBRI PCI ISDN
V 1.0

TÜV Rheinland Product Safety GmbH
Section Telecommunications

Am Grauen Stein
51105 Köln

Contact Person : Klaus Jauernik
Tel. : +49-221-806-3428
Fax : +49-221-806-1605

TÜV Rheinland Group

System Conformance Test Report

for
equipment tested against the requirements
specified in

European Telecommunication Standard

TBR 3 with TBR 3 A1
AS/ACIF S031:2001
ITAAB-Notes (listed under ATS Standard)
(Layer 1, 2 and 3)

SCTR Number: 21119728_001

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1 Identification Summary

1.1 System Conformance Test Report (SCTR)

SCTR Number: 21119728_001
SCTR Date: 2005-07-11

Tested by:

2005-07-11	Klaus Jauernik	
Date	Name	Signature

Checked by:

2005-07-11	Glenn Zimmermann	
Date	Name	Signature

1.2 Test Laboratory

TÜV Rheinland Product Safety GmbH
Section Telecommunications
Am Grauen Stein
D - 51105 Köln

Contact Person: Klaus Jauernik
Phone: +49-221-806-3428
Fax: +49-221-806-1605

Accredited testing laboratory

Accredited by: DAR (Deutscher Akkreditierungs Rat)
DAR-registration number: TTI-P-G 093/94

1.3 Client Information

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany
Telephone:	+49-30-79705390
Telefax:	+49-30-79705391
Contact Person:	Herr Klaus-Peter Junghanns
Telephone:	+49-30-79705392

1.4 System under Test

Identification:

Name:	quadBRI PCI ISDN
Version/Model:	V 1.0
Serial Number:	49109154
PICS/PIXIT:	See Annex PICS/PIXIT of this Test Report
Previous SCTR if any (optional):	

Information about the tested product and its configuration e.g. for PC Cards:

IUT Name:	BRIstuff
IUT Version:	0.3.0
Hardware environment:	-
-Processor:	
Software environment:	
- Operating system:	
- D-channel software:	BRIstuff 0.3.0
- B-channel protocol:	
- Loader file:	
- Filetransfer program:	
- Terminal program:	

Supplier (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

Manufacturer (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

Description of SUT:

PCI card with four ISDN Basic Rate Interface (BRI) ports.

1.5 Test Information

Date of receipt of SUT:	2005-06-07
Receipt No.:	69632
Date(s) of testing:	2005-06-07 & 2005-06-08 & 2005-06-13
Testing location:	51105 Köln

Detailed information about the used test-equipment and the calibration dates is listed in the general test instruction.

1.6 Nature of Conformance Testing

The purpose of Conformance Testing is to increase the probability that different implementations can interwork. However, the complexity of OSI protocols makes exhaustive testing impractical on both technical and economic grounds. Furthermore, there is no garantee that such an SUT which has passed all the relevant tests conforms to a specification. Neither is there any garantee that such an SUT will interwork with other real open systems. Rather, the passing of the tests give confidence that the SUT has the stated capabilities and that its behaviour conforms consistently in representative instances of communication.

1.7 Limits and Reservations

The test results only relate to the items tested.
Without permission of the test center this report is not permittet to be duplicated in extracts.

1.8 Comments

This testreport includes the test of the new software. The hardware of the product was tested under 21109632_001 from 2004-02-04.
The test are done in PTMP mode and some tests are retested in PTP mode.

1.9 Test Conditions

Environmental Conditions:

Temperature:	21 °C .. 25 °C (layer 1)	☒ Yes	☐ No
	15 °C .. 25 °C (layer 2 and 3)	☒ Yes	☐ No
Relative humidity:	30 % .. 75 %	☒ Yes	☐ No
Air pressure:	86 kPa .. 106 kPa	☒ Yes	☐ No

Power Supply Limitations:

Voltage:	normal operating voltage ± 5 %	☒ Yes	☐ No
Frequency:	normal operating frequency ± 4 %	☒ Yes	☐ No

2 System Report Summary

2.1 Layer 1 Test Report Summary

Implementation under Test (IUT) Identifier: BRIstuff 0.3.0
Protocol Standard: TBR 3 (11.95)
TBR 3 / A1 (12.97)
PICS/PIXIT: See Annex PICS/PIXIT of this Test Report

Protocol Conformance Test report:
PCTR Number: 21119728_001
PCTR Date: 2005-07-11

Abstract Test Suite (ATS) Standard:
- TBR 3 (11.95) with TBR 3 A1 (12.97)

- ITAAB-Note: 060rev.2
- Futher ITAAB-Notes (listed under observations)

Abstract Test Method: Remote Single Layer Embedded (RSE)

Real Test system:

Executable Test Suite (ETS) Identification:
Name: TBR 3
Version: V 5.02

ISDN S0 Analyser K1403:
Manufacturer: SIEMENS/Tektronix
Serial No.: BF9508-2005
Operating System: TBR 3
Base Software: V 5.02

Conformance Status:
Static Conformance Errors: ☐ Yes ☒ No
Dynamic Conformance Errors: ☐ Yes ☒ No

Test cases run:
Passed: 78
Failed: 0
Inconclusive: 0

2.2 Layer 2 Test Report Summary

Implementation under Test (IUT) Identifier: BRIstuff 0.3.0
Protocol Standard: TBR 3 (11.95)
TBR 3 / A1 (12.97)
PICS/PIXIT: See Annex PICS/PIXIT of this Test Report

Protocol Conformance Test report:
PCTR Number: 21119728_001
PCTR Date: 2005-07-11

Abstract Test Suite (ATS) Standard:
- TBR 3 (11.95) with TBR 3 A1 (12.97)

- ITAAB-Note: 066rev.3
- Futher ITAAB-Notes (listed under observations)

Abstract Test Method: Remote Single Layer Embedded (RSE)

Real Test system:

Executable Test Suite (ETS) Identification:
Name: TBR 3
Version: 1.1 rev. 2

Protocol Tester K1197:
Manufacturer: SIEMENS
Serial No.: BF9508-1
Operating System: MF 3.0
Base Software: ISDN Simulation V 4.0

Conformance Status:
Static Conformance Errors: ☐ Yes ☒ No
Dynamic Conformance Errors: ☐ Yes ☒ No

Test cases run:
Passed: 34
Failed: 0
Inconclusive: 0

2.3 Layer 3 Test Report Summary

Implementation under Test (IUT) Identifier: BRIstuff 0.3.0
Protocol Standard: TBR 3 (11.95)
TBR 3 / A1 (12.97)

PICS/PIXIT: See Annex PICS/PIXIT of this Test Report

Protocol Conformance Test report:
PCTR Number: 21119728_001
PCTR Date: 2005-07-11

Abstract Test Suite (ATS) Standard:
- TBR 3 (11.95) with TBR 3 A1 (12.97)

- ITAAB-Note: 066rev.3
- ITAAB-Note 087
- Futher ITAAB-Notes (listed under observations)

Abstract Test Method: Remote Single Layer Embedded (RSE)

Real Test system:

Executable Test Suite (ETS) Identification:
Name, Version: TBR 3, 1.1 rev. 2

Protocol Tester K1197:
Manufacturer: SIEMENS
Serial No.: BF9508-1
Operating System: MF 3.0
Base Software: ISDN Simulation V 4.0

Conformance Status:
Static Conformance Errors: ☐ Yes ☒ No
Dynamic Conformance Errors: ☐ Yes ☒ No

Test cases run:
Passed: 64
Failed: 0
Inconclusive: 0

2.4 Test Report Summary Austalien Deviations

Implementation under Test (IUT) Identifier: BRIstuff 0.3.0
Protocol Standard: TBR 3 (11.95)
TBR 3 / A1 (12.97)
AS/ACIF S031:2001
PICS/PIXIT: See Annex PICS/PIXIT of this Test Report

Protocol Conformance Test report:
PCTR Number: 21119728_001
PCTR Date: 2005-07-11

Abstract Test Suite (ATS) Standard:
- TBR 3 (11.95) with TBR 3 A1 (12.97)
- AS/ACIF S031:2001
- ITAAB Advisory Notes

Abstract Test Method: Remote Single Layer Embedded (RSE)

Real Test system:

Executable Test Suite (ETS) Identification:

Test system for TBR 3 with TBR 3 A1:
Please look at the PCTR of TBR 3 with TBR 3 A1.

Conformance Status:
Static Conformance Errors: ☐ Yes ☒ No
Dynamic Conformance Errors: ☐ Yes ☒ No

Test cases run:
Passed: 33
Failed: 0
Inconclusive: 0

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Protocol Conformance Test Report

for

European Telecommunication Standard

TBR 3 with TBR 3 A1

Integrated Services Digital Network (ISDN)
User-network interface
Physical Layer (Layer 1)
specifications

PCTR Number: 21119728_001

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2 IUT Conformance Status

3 Static Conformance Summary

4 Dynamic Conformance Summary

5 Static Conformace Review Report

6 Test Campaign Report

7 Observations

1 Identification Summary

1.1 Protocol Conformance Test Report (PCTR)

PCTR Number:	21119728_001
PCTR Date:	2005-07-11
Corresponding SCTR Number:	21119728_001
Corresponding SCTR Date:	2005-07-11

Tested by:

2005-07-11	Klaus Jauernik	
Date	Name	Signature

Checked by:

2005-07-11	Glenn Zimmermann	
Date	Name	Signature

1.2 Test Laboratory

TÜV Rheinland Product Safety GmbH
Section Telecommunications
Am Grauen Stein
D - 51105 Köln

Contact Person:	Klaus Jauernik
Phone:	+49-221-806-3428
Fax:	+49-221-806-1605

Accredited testing laboratory

Accredited by:	DAR (Deutscher Akkreditierungs Rat)
DAR-registration number:	TTI-P-G 093/94

1.3 Client Information

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany
Telephone:	+49-30-79705390
Telefax:	+49-30-79705391
Contact Person:	Herr Klaus-Peter Junghanns
Telephone:	+49-30-79705392

1.4 Implementation under Test

Identification:

Name:	BRIstuff
Version:	0.3.0

Protocol Standard: TBR 3 (11.95)
TBR 3 / A1 (12.97)

PICS: See corresponding
SCTR Number: 21119728_001
SCTR Date: 2005-07-11

Previous PCTR if any (optional):

Information about the tested product and its configuration e.g. for PC Cards:

SUT Name:	quadBRI PCI ISDN
SUT Version/Model:	V 1.0
Hardware environment:	-
-Processor:	
Software environment:	
- Operating system:	
- D-channel software:	BRIstuff 0.3.0
- B-channel protocol:	
- Loader file:	
- Filetransfer program:	
- Terminal program:	

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Supplier (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

Manufacturer (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

1.5 Test Information

Date of receipt of IUT:	2005-06-07
Receipt No.:	69632
Date(s) of testing:	2005-06-07 & 2005-06-08 & 2005-06-13
Testing location:	51105 Köln

Detailed information about the used test-equipment and the calibration dates is listed in the general test instruction.

1.6 Testing Environment

PIXIT: See corresponding
SCTR Number: 21119728_001
SCTR Date: 2005-07-11

Abstract Test Suite (ATS) Standard:
- TBR 3 (11.95) with TBR 3 A1 (12.97)

- ITAAB-Note: 060rev.2
- Futher ITAAB-Notes (listed under observations)

Abstract Test Method: Remote Single Layer Embedded (RSE)

Means of Testing identification:
- Executable Test Suite: TBR 3 V 5.02
- Terminal identifier: Siemens ISDN So Analyser K1403
  Serial No.: BF9508-2005

1.7 Limits and Reservations

The test results only relate to the items tested.
Without permission of the test center this report is not permittet to be duplicated in extracts.

1.8 Comments

The tests are done in PTMP mode and the section CPF* is repeated in PTP mode.

1.9 Test Conditions

Environmental Conditions:

Temperature:	21 °C .. 25 °C (layer 1)	☒ Yes	☐ No
Relative humidity:	30 % .. 75 %	☒ Yes	☐ No
Air pressure:	86 kPa .. 106 kPa	☒ Yes	☐ No

Power Supply Limitations:

Voltage:	normal operating voltage ± 5 %	☒ Yes	☐ No
Frequency:	normal operating frequency ± 4 %	☒ Yes	☐ No

2 IUT Conformance Status

This IUT **has not** been shown by conformance assessment to be **non-conforming** to the specified protocol standard.

3 Static Conformance Summary

The PICS for this IUT is consistent with the static conformance requirements in the specified protocol standard.

4 Dynamic Conformance Summary

The test campaign **did not** reveal errors in the IUT.

5 Static Conformace Review Report

There were **no errors** in the static conformance test affecting this campaign.

6 Test Campaign Report

The tables in this part indicate for each test both the test case selection that was performed by the test laboratory and the results of testing. The tables are set up as followed below. Notes on the information that the test laboratory shall complete in the colums are profited below, and reverenced as x).

Name of test group					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
a)	**b)**	**c)**	**d)**	**e)**	**f)**

a) Reference to the abstract test case of the ATS standard.

b) Reference to the test in the abstract test case of the ATS standard.

c) Indicates whether or not the test was selected according to the PICS and PIXIT.

d) Indicates whether or not the test was run to completion.

e) Indicates the verdicts as assigned during the test campaign.

Possible verdicts are:

- pass: The test purposes according to the ATS is achieved, tests running as defined in ETS to completion.
- inc.: The test purposes according to the ATS is not achieved, tests running not as defined in ETS to completion.
- fail: The test purpose according to the ATS is not achieved.

f) Indicates a observation or a reference to a observation made in part 7 of this test report.

B.2.1 Frame rate					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.1	Frame rate when transmitting INFO 1				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
	- 42 V	no	no	none	
	- 32 V	no	no	none	

B.2.2.1 Jitter characteristics					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.2.1	TE jitter measurement characteristics when transmitting INFO 3 frames				
	Seq. a, Bus i, + 24 V	no	no	none	
	Seq. a, Bus i, - 32 V	no	no	none	
	Seq. a, Bus ii, + 24 V	no	no	none	
	Seq. a, Bus ii, - 32 V	no	no	none	
	Seq. a, Bus iiia, + 24 V	no	no	none	
	Seq. a, Bus iiia, - 32 V	no	no	none	
	Seq. a, Bus iiib, + 24 V	no	no	none	
	Seq. a, Bus iiib, - 32 V	no	no	none	
	Seq. a, Bus iv, + 24 V	no	no	none	
	Seq. a, Bus iv, - 32 V	no	no	none	
	Seq. b, Bus i, + 24 V	no	no	none	
	Seq. b, Bus i, - 32 V	no	no	none	
	Seq. b, Bus ii, + 24 V	no	no	none	
	Seq. b, Bus ii, - 32 V	no	no	none	
	Seq. b, Bus iiia, + 24 V	no	no	none	
	Seq. b, Bus iiia, - 32 V	no	no	none	
	Seq. b, Bus iiib, + 24 V	no	no	none	
	Seq. b, Bus iiib, - 32 V	no	no	none	
	Seq. b, Bus iv, + 24 V	no	no	none	
	Seq. b, Bus iv, - 32 V	no	no	none	
	Seq. c, Bus i, + 24 V	no	no	none	
	Seq. c, Bus i, - 32 V	no	no	none	
	Seq. c, Bus ii, + 24 V	no	no	none	
	Seq. c, Bus ii, - 32 V	no	no	none	

ATS Reference	Description	Selected	Run	Verdict	Observations
B.2.2.1	TE jitter measurement characteristics when transmitting INFO 3 frames				
	Seq. c, Bus iiia, + 24 V	no	no	none	
	Seq. c, Bus iiia, - 32 V	no	no	none	
	Seq. c, Bus iiib, + 24 V	no	no	none	
	Seq. c, Bus iiib, - 32 V	no	no	none	
	Seq. c, Bus iv, + 24 V	no	no	none	
	Seq. c, Bus iv, - 32 V	no	no	none	

B.2.2.2 Input to Output offset					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.2.2	Input to Output offset (with 5Hz, 20Hz, 50 Hz and 2 kHz jitter)				
	Seq. a, Bus i, + 24 V	no	no	none	
	Seq. a, Bus i, - 32 V	no	no	none	
	Seq. a, Bus ii, + 24 V	no	no	none	
	Seq. a, Bus ii, - 32 V	no	no	none	
	Seq. a, Bus iiia, + 24 V	no	no	none	
	Seq. a, Bus iiia, - 32 V	no	no	none	
	Seq. a, Bus iiib, + 24 V	no	no	none	
	Seq. a, Bus iiib, - 32 V	no	no	none	
	Seq. a, Bus iv, + 24 V	no	no	none	
	Seq. a, Bus iv, - 32 V	no	no	none	
	Seq. b, Bus i, + 24 V	no	no	none	
	Seq. b, Bus i, - 32 V	no	no	none	
	Seq. b, Bus ii, + 24 V	no	no	none	
	Seq. b, Bus ii, - 32 V	no	no	none	
	Seq. b, Bus iiia, + 24 V	no	no	none	
	Seq. b, Bus iiia, - 32 V	no	no	none	
	Seq. b, Bus iiib, + 24 V	no	no	none	
	Seq. b, Bus iiib, - 32 V	no	no	none	
	Seq. b, Bus iv, + 24 V	no	no	none	
	Seq. b, Bus iv, - 32 V	no	no	none	
	Seq. c, Bus i, + 24 V	no	no	none	
	Seq. c, Bus i, - 32 V	no	no	none	
	Seq. c, Bus ii, + 24 V	no	no	none	
	Seq. c, Bus ii, - 32 V	no	no	none	

ATS Reference	Description	Selected	Run	Verdict	Observations
B.2.2.2	Input to Output offset (with 5Hz, 20Hz, 50 Hz and 2 kHz jitter)				
	Seq. c, Bus iiia, + 24 V	no	no	none	
	Seq. c, Bus iiia, - 32 V	no	no	none	
	Seq. c, Bus iiib, + 24 V	no	no	none	
	Seq. c, Bus iiib, - 32 V	no	no	none	
	Seq. c, Bus iv, + 24 V	no	no	none	
	Seq. c, Bus iv, - 32 V	no	no	none	
	Seq. d, Bus i, + 24 V	no	no	none	
	Seq. d, Bus i, - 32 V	no	no	none	
	Seq. d, Bus ii, + 24 V	no	no	none	
	Seq. d, Bus ii, - 32 V	no	no	none	
	Seq. d, Bus iiia, + 24 V	no	no	none	
	Seq. d, Bus iiia, - 32 V	no	no	none	
	Seq. d, Bus iiib, + 24 V	no	no	none	
	Seq. d, Bus iiib, - 32 V	no	no	none	
	Seq. d, Bus iv, + 24 V	no	no	none	
	Seq. d, Bus iv, - 32 V	no	no	none	

B.2.3.1 Transmitter output impedance					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.3.1	Test A, output impedance when transmitting a binary one in state F3,				
	+ 24 V	no	no	none	
	- 32 V	no	no	none	
B.2.3.2	Test B, output impedance when transmitting a binary ZERO in state F7				
	positive pulses into a 50 ohms load, + 24 V	no	no	none	
	positive pulses into a 50 ohms load, - 32 V	no	no	none	
	negative pulses into a 50 ohms load, + 24 V	no	no	none	
	negative pulses into a 50 ohms load, - 32 V	no	no	none	
B.2.3.2	Test B, output impedance when transmitting a binary ZERO in state F7				
	positive pulses into a 400 ohms load, + 24 V	no	no	none	
	positive pulses into a 400 ohms load, - 32 V	no	no	none	
	negative pulses into a 400 ohms load, + 24 V	no	no	none	
	negative pulses into a 400 ohms load, - 32 V	no	no	none	

ATS Reference	Description	Selected	Run	Verdict	Observations
B.2.3.3	Test C, output peak current when transmitting a binary ONE in state F3				
	+ 24 V	no	no	none	
	- 32 V	no	no	none	
B.2.3.4	Test D, output impedance when transmitting a binary ONE in state F1				
	0 V, PS	no	no	none	
	-32 V, LP	no	no	none	
B.2.3.5	Test E, output peak current when transmitting a binary ONE in state F1				
	0 V, PS	no	no	none	
	-32 V, LP	no	no	none	

B.2.4 Pulse shape and amplitude					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.4	Pulse shape and amplitude for				
	positive pulses, + 42 V	no	no	none	
	positive pulses, + 24 V	no	no	none	
	positive pulses, - 42 V	no	no	none	
	positive pulses, - 32 V	no	no	none	
	negative pulses, + 42 V	no	no	none	
	negative pulses, + 24 V	no	no	none	
	negative pulses, - 42 V	no	no	none	
	negative pulses, - 32 V	no	no	none	

B.2.5 Pulse unbalance					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.5.1	Pulse amplitude				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
	- 32 V	no	no	none	
B.2.5.2	Pulse unbalanced of an isolated couple of pulses				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
	- 32 V	no	no	none	

B.2.6 Voltage on over the test loads					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.6.1	Test A, Voltage on a 400 ohms load (puls shape) for				
	positive pulses, + 42 V	no	no	none	
	positive pulses, + 24 V	no	no	none	
	positive pulses, - 42 V	no	no	none	
	positive pulses, - 32 V	no	no	none	
	negative pulses, + 42 V	no	no	none	
	negative pulses, + 24 V	no	no	none	
	negative pulses, - 42 V	no	no	none	
	negative pulses, - 32 V	no	no	none	
B.2.6.2	Test B, Voltage on a 5,6 ohms load (puls shape) for				
	positive pulses, + 42 V	no	no	none	
	positive pulses, + 24 V	no	no	none	
	positive pulses, - 42 V	no	no	none	
	positive pulses, - 32 V	no	no	none	
	negative pulses, + 42 V	no	no	none	
	negative pulses, + 24 V	no	no	none	
	negative pulses, - 42 V	no	no	none	
	negative pulses, - 32 V	no	no	none	

B.2.7 Longitudinal conversion loss of transmitter output					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.7	a) Transmitter longitudinal transversion loss in state F3				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
	- 42 V	no	no	none	
	- 32 V	no	no	none	
B.2.7	b) Transmitter longitudinal transversion loss in state F1				
	0 V, PS	no	no	none	
	-32 V, LP	no	no	none	

B.2.8.1 Receiver input impedance					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.8.1.1	Test A, Receiver input impeB. in state F3				
	+ 24 V	no	no	none	
	- 32 V	no	no	none	
B.2.8.1.2	Test B, Receiver input impedance when receiving an overvoltage signal (peak current) in state F3				
	+ 24 V	no	no	none	
	- 32 V	no	no	none	
B.2.8.1.3	Test C, Receiver input impeB. in state F1				
	0 V, PS	no	no	none	
	-32 V, LP	no	no	none	
B.2.8.1.4	Test D, Receiver input impedance when receiving an overvoltage signal (peak current) in state F1				
	0 V, PS	no	no	none	
	-32 V, LP	no	no	none	

B.2.8.2 Receiver input sensitivity					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.8.2	Rec. sensitivity, noise and distortion immunity (with 5Hz, 20Hz, 50 Hz and 2 kHz jitter)				
	Bus i, - 1.5 dB, 200 kHz, + 24 V	no	no	none	
	Bus i, - 1.5 dB, 200 kHz, - 32 V	no	no	none	
	Bus i, - 1.5 dB, 2 MHz, + 24 V	no	no	none	
	Bus i, - 1.5 dB, 2 MHz, - 32 V	no	no	none	
	Bus ii, 1.5 dB attenuated signal source, + 24 V	no	no	none	
	Bus ii, 1.5 dB attenuated signal source, - 32 V	no	no	none	
	Bus ii, 1.5 dB gain signal source, + 24 V	no	no	none	
	Bus ii, 1.5 dB gain signal source, - 32 V	no	no	none	

B.2.8.2 Receiver input sensitivity					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.8.2	Rec. sensitivity, noise and distortion immunity (with 5Hz, 20Hz, 50 Hz and 2 kHz jitter)				
	Bus iiia, - 1.5 dB, + 24 V	no	no	none	
	Bus iiia, - 1.5 dB, - 32 V	no	no	none	
	Bus iiia, 1.5 dB gain signal source, + 24 V	no	no	none	
	Bus iiia, 1.5 dB gain signal source, - 32 V	no	no	none	
	Bus iiib, - 1.5 dB, + 24 V	no	no	none	
	Bus iiib, - 1.5 dB, - 32 V	no	no	none	
	Bus iiib, 1.5 dB gain signal source, + 24 V	no	no	none	
	Bus iiib, 1.5 dB gain signal source, - 32 V	no	no	none	
	Bus iv, 1.5 dB gain signal source, + 24 V	no	no	none	
	Bus iv, 1.5 dB gain signal source, - 32 V	no	no	none	

B.2.8.3 Receiver unbalance about earth					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.2.8.3	a) Unbalanced about earth of receiver input in state F3				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
	- 42 V	no	no	none	
	- 32 V	no	no	none	
B.2.8.3	b) Unbalanced about earth of receiver input in state F1				
	0 V, PS	no	no	none	
	-32 V, LP	no	no	none	

B.3.1 Binary organisation of frame					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.3.1.1	Binary organisation of INFO 3 frames	no	no	none	
B.3.1.2	Binary organisation of INFO 1 frames	yes	yes	pass	

B.4.1 D-channel access control procedure					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.4.1	DCBinaryOneCL1	yes	yes	pass	
B.4.1	DCNormalPL1CL1	yes	yes	pass	
	DCNormalPL0CL1	yes	yes	pass	
	DCPriorityClass1	yes	yes	pass	
	DCNormtoLowPLCL1	yes	yes	pass	
	DCLowtoNormPLCL1	yes	yes	pass	

B.4.1 Activation / deactivation					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.4.1	Activation/deactivation procedure				
	AD1aF1_PS&LP-on	yes	yes	pass	
	AD3aF2_PS-off	no	no	none	
	AD3bF2_LP-off	yes	yes	pass	
	AD4F2_RX-I0	yes	yes	pass	
	AD5F2_RX-I2	yes	yes	pass	
	AD6F2_RX-I4	yes	yes	pass	
	AD7F2_RX-IX	yes	yes	pass	
	AD9aF3_PS-off	no	no	none	
	AD9bF3_LP-off	yes	yes	pass	
	AD10F3_PH-AR	yes	yes	pass	
	AD11F3_RX-I0	yes	yes	pass	
	AD12F3_RX-I2	yes	yes	pass	
	AD13F3_RX-I4	yes	yes	pass	
	AD14F3_RX-IX	yes	yes	pass	
	AD15F3_CHK_T3	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
B.4.1	Activation/deactivation procedure				
	AD16aF4_PS-off	no	no	none	
	AD16bF4_LP-off	yes	yes	pass	
	AD17F4_RX-I0	yes	yes	pass	
	AD18F4_RX-I2	yes	yes	pass	
	AD19F4_RX-I4	yes	yes	pass	
	AD22aF5_PS-off	no	no	none	
	AD22bF5_LP-off	yes	yes	pass	
	AD23F5_RX-I0	yes	yes	pass	
	AD24F5_RX-I2	yes	yes	pass	
	AD25F5_RX-I4	yes	yes	pass	
	AD26F5_RX-IX	yes	yes	pass	
	AD28aF6_PS-off	no	no	none	
	AD28bF6_LP-off	yes	yes	pass	
	AD29F6_Lostfr	yes	yes	pass	
	AD30F6_PH-AR	yes	yes	pass	
	AD31F6_RX-I0	yes	yes	pass	
	AD32F6_RX-I2	yes	yes	pass	
	AD33F6_RX-I4	yes	yes	pass	
	AD35aF7_PS-off	no	no	none	
	AD35bF7_LP-off	yes	yes	pass	
	AD36F7_Lostfr	yes	yes	pass	
	AD37F7_RX-I0	yes	yes	pass	
	AD38F7_RX-I2	yes	yes	pass	
	AD39F7_RX-I4	yes	yes	pass	
	AD40aF8_PS-off	no	no	none	
	AD40bF8_LP-off	yes	yes	pass	
	AD41F8_PH-AR	yes	yes	pass	
	AD43F8_RX-I2	yes	yes	pass	
	AD44F8_RX-I4	yes	yes	pass	
	AD45F8_RX-IX	yes	yes	pass	
	AD46F8_CHK_T3	yes	yes	pass	

ATS Reference	Description	Selected	Run	Verdict	Observations
B.4.1	Activation/deactivation procedure				Tested in PTMP and retested in PTP mode
	CPF3PHAI	yes	yes	pass	
	CPF4PHDI_T3exp	yes	yes	pass	
	CPF4Tlayer2	no	no	none	T3 = 3,0 sec
	CPF5PHDI_I0T3	yes	yes	pass	
	CPF5PHDI_T3expa	yes	yes	pass	
	CPF6PHAIa	yes	yes	pass	
	CPF6PHAIb	yes	yes	pass	
	CPF6PHDI_I0	yes	yes	pass	
	CPF6PHARa	yes	yes	pass	
	CPF7PHDI_I0	yes	yes	pass	
	CPF7DIS_Ix	yes	yes	pass	
	CPF7DIS_I2	yes	yes	pass	
	CPF8PHAIb	yes	yes	pass	
	CPF8PHDI_I0T3	yes	yes	pass	
	CPF8PHARa	yes	yes	pass	

B.4.1 Timers for Activation/Deactivation					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.4.1	TIF3info2	yes	yes	pass	
	TIF3info4	yes	yes	pass	
	TltimerT3	yes	yes	pass	
	TIF4info2	yes	yes	pass	t < 5,25 ms, ITAAB Note 118
	TIF4info4	yes	yes	pass	t < 5,25 ms, ITAAB Note 118
	TIF6physdeact	yes	yes	pass	
	TIF7physdeact	yes	yes	pass	
	TIF7compdeact1	yes	yes	pass	
	TIF8compdeact1	yes	yes	pass	

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B.4.1 Frame Alignment procedure					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.4.1	FAinfA_1fr	yes	yes	pass	
	FAinfB_1fr	yes	yes	pass	
	FAinfD_1fr	yes	yes	pass	
	FAinfA_kfr	yes	yes	pass	
	FAinfB_kfr	yes	yes	pass	
	FAinfD_kfr	yes	yes	pass	
	FAregain	yes	yes	pass	
	BCBinaryOne, Idle channel code on the B-channels	yes	yes	pass	

B.5.1 Power feeding Power Source 1, normal mode					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.5.1.1	Test A, Normal power provision in state F7 with an active connection				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
B.5.1.2	Test B, Normal power provision from PS1 in state F3				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
B.5.1.3	Test C, Normal power provision from PS1 in state F3 with local action				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
B.5.1.4	Test D, Normal power provision from PS1 for a LOCAL POWERED TE				
	in state F1, + 42 V	no	no	none	
	in state F1, + 24 V	no	no	none	
	in state F3, + 42 V	no	no	none	
	in state F3, + 24 V	no	no	none	
	in state F7, + 42 V	no	no	none	
	in state F7, + 24 V	no	no	none	
	in state F3 with local action, + 42 V	no	no	none	
	in state F3 with local action, + 24 V	no	no	none	
	in state F7 with an active connection, + 42 V	no	no	none	
	in state F7 with an active connection, + 24 V	no	no	none	

B.5.2 Power feeding Power Source 1, restricted mode					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.5.2.1	Test A, Restricted power provision in state F7 with an active connection, designated TE				
	- 42 V	no	no	none	
	- 32 V	no	no	none	
B.5.2.2	Test B, Restricted power provision from PS1 in state F3, designated TE				
	- 42 V	no	no	none	
	- 32 V	no	no	none	
B.5.2.3	Test C, Restricted power provision from PS1 in state F3 with local action				
	- 42 V	no	no	none	
	- 32 V	no	no	none	
B.5.2.4	Test D, Restricted power provision from PS1 for a LOCAL POWERED TE				
	in state F1, - 42 V	no	no	none	
	in state F1, - 32 V	no	no	none	
	in state F3, - 42 V	no	no	none	
	in state F3, - 32 V	no	no	none	
	in state F7, - 42 V	no	no	none	
	in state F7, - 32 V	no	no	none	
	in state F3 with local action, - 42 V	no	no	none	
	in state F3 with local action, - 32 V	no	no	none	
	in state F7 with an active connection, - 42 V	no	no	none	
	in state F7 with an active connection, - 32 V	no	no	none	
B.5.2.5	Test F, Restricted power provision from PS1 in state F1 for a NON DESIGNATED TE				
	- 42 V	no	no	none	
	- 32 V	no	no	none	

ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
B.5.3	Current transient when the TE is varying the power consumption: in state F3, RX-I4, incomming call, alerting, active and clearing				
	+ 42 V	no	no	none	
	+ 24 V	no	no	none	
	- 42 V	no	no	none	
	- 32 V	no	no	none	

ATS Reference	Description	Selected	Run	Verdict	Observations
B.5.4.1	Current / time consumption from PS1				
	in normal mode, +40V	no	no	none	
	in restricted mode, -40V	no	no	none	
B.5.4.2	Current / time consumption from PS1 for a				
	non designated TE	no	no	none	
	locally powered TE	no	no	none	
B.5.4.4.1	Power start up test after remove of a short circuit				
	in normal mode	no	no	none	
	in restricted mode	no	no	none	
B.5.4.4.2	Power start up test at low input voltage, +28 V	no	no	none	
B.5.4.5.1	Protection against short term interruptions, normal power, state F7, active communication	no	no	none	
B.5.4.5.2	Protection against short term interruptions, restricted power, state F7, active communic.	no	no	none	
B.5.4.6.1	Behaviour at the switch over from normal to restricted mode, state F7, active communic.	no	no	none	
B.5.4.6.2	Behaviour at the switch over from restricted to normal power, state F7	no	no	none	
B.5.4.7	Transmitter DC unbalance of TE using PS1	no	no	none	
	Receiver DC unbalance of TE using PS1	no	no	none	
B.5.4.8	Effect of DC unbalance on TE transmitter impedance in state F3	no	no	none	
	Effect of DC unbalance on TE receiver impedance in state F3	no	no	none	
B.5.5	Galvanic isolation	no	no	none	

8 Overvoltage protection requirements					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
8.1	5.7.1 of ETS 3000 047-3 common mode surge of either polarity, 2,5 kV (10/700 µs) applied to the mains supply port	no	no	none	The ETS 300 0467-3 is withdrawn and replaced by the safety standard EN 60950-1 according to ETSI TS 102 119.
8.2	5.7.1 of ETS 3000 047-3 transverse mode surge of either polarity, 2,5 kV (10/700 µs) applied to the mains supply port	no	no	none	
8.3	5.7.3 of ETS 3000 047-3 common mode surge of either polarity, 1 kV (1,2/50 µs) applied to the TE interface	no	no	none	

7 Observations

There are no observations.

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Protocol Conformance Test Report

for

European Telecommunication Standard

TBR 3 with TBR 3 A1

Integrated Services Digital Network (ISDN)
User-network interface
Data Link Layer (Layer 2)
specifications

PCTR Number: 21119728_001

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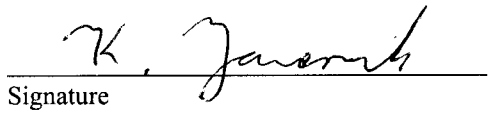
1 Identification Summary

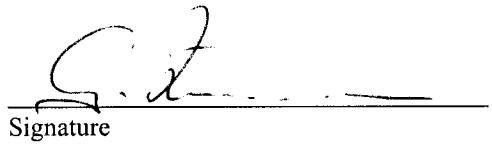
1.1 Protocol Conformance Test Report (PCTR)

PCTR Number:	21119728_001
PCTR Date:	2005-07-11
Corresponding SCTR Number:	21119728_001
Corresponding SCTR Date:	2005-07-11

Tested by:

2005-07-11	Klaus Jauernik	
Date	Name	Signature

Checked by:

2005-07-11	Glenn Zimmermann	
Date	Name	Signature

1.2 Test Laboratory

TÜV Rheinland Product Safety GmbH
Section Telecommunications
Am Grauen Stein
D - 51105 Köln

Contact Person:	Klaus Jauernik
Phone:	+49-221-806-3428
Fax:	+49-221-806-1605

Accredited testing laboratory

Accredited by:	DAR (Deutscher Akkreditierungs Rat)
DAR-registration number:	TTI-P-G 093/94

1.3 Client Information

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany
Telephone:	+49-30-79705390
Telefax:	+49-30-79705391
Contact Person:	Herr Klaus-Peter Junghanns
Telephone:	+49-30-79705392

1.4 Implementation under Test

Identification:

Name:	BRIstuff
Version:	0.3.0

Protocol Standard: TBR 3 (11.95)
TBR 3 / A1 (12.97)

PICS: See corresponding
SCTR Number: 21119728_001
SCTR Date: 2005-07-11

Previous PCTR if any (optional):

Information about the tested product and its configuration e.g. for PC Cards:

SUT Name:	quadBRI PCI ISDN
SUT Version/Model:	V 1.0
Hardware environment:	-
-Processor:	
Software environment:	
- Operating system:	
- D-channel software:	BRIstuff 0.3.0
- B-channel protocol:	
- Loader file:	
- Filetransfer program:	
- Terminal program:	

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Supplier (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

Manufacturer (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

1.5 Test Information

Date of receipt of IUT:	2005-06-07
Receipt No.:	69632
Date(s) of testing:	2005-06-08
Testing location:	51105 Köln

Detailed information about the used test-equipment and the calibration dates is listed in the general test instruction.

1.6 Testing Environment

PIXIT: See corresponding
SCTR Number: 21119728_001
SCTR Date: 2005-07-11

Abstract Test Suite (ATS) Standard:
- TBR 3 (11.95) with TBR 3 A1 (12.97)

- ITAAB-Note: 066rev.3
- Futher ITAAB-Notes (listed under observations)

Abstract Test Method: Remote Single Layer Embedded (RSE)

Means of Testing identification:
- Executable Test Suite: Siemens TBR 3 Conf. Tests Layer 2 V 1.1 rev. 2
- Terminal identifier: Siemens Protocol Tester K1197 Serial No.: BF9508-1

1.7 Limits and Reservations

The test results only relate to the items tested.
Without permission of the test center this report is not permittet to be duplicated in extracts.

1.8 Comments

The tests are done in PTMP and PTP mode.

1.9 Test Conditions

Environmental Conditions:

Temperature:	15 °C .. 25 °C (layer 2 and 3)	☒ Yes	☐ No
Relative humidity:	30 % .. 75 %	☒ Yes	☐ No
Air pressure:	86 kPa .. 106 kPa	☒ Yes	☐ No

Power Supply Limitations:

Voltage:	normal operating voltage ± 5 %	☒ Yes	☐ No
Frequency:	normal operating frequency ± 4 %	☒ Yes	☐ No

2 IUT Conformance Status

This IUT **has not** been shown by conformance assessment to be **non-conforming** to the specified protocol standard.

3 Static Conformance Summary

The PICS for this IUT is consistent with the static conformance requirements in the specified protocol standard.

4 Dynamic Conformance Summary

The test campaign **did not** reveal errors in the IUT.

5 Static Conformace Review Report

There were **no errors** in the static conformance test affecting this campaign.

6 Test Campaign Report

The tables in this part indicate for each test both the test case selection that was performed by the test laboratory and the results of testing. The tables are set up as followed below. Notes on the information that the test laboratory shall complete in the colums are profited below, and reverenced as x).

Name of test group					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
a)	**b)**	**c)**	**d)**	**e)**	**f)**

a) Reference to the abstract test case of the ATS standard.

b) Reference to the test in the abstract test case of the ATS standard.

c) Indicates whether or not the test was selected according to the PICS and PIXIT.

d) Indicates whether or not the test was run to completion.

e) Indicates the verdicts as assigned during the test campaign.

Possible verdicts are:

- pass: The test purposes according to the ATS is achieved, tests running as defined in ETS to completion.
- inc.: The test purposes according to the ATS is not achieved, tests running not as defined in ETS to completion.
- fail: The test purpose according to the ATS is not achieved.

f) Indicates a observation or a reference to a observation made in part 7 of this test report.

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ATS Reference	Description	Selected	Run	Verdict	Observations
TBR3_L2 / LM / S10 / TEI unassigned					
TC11013	Discard an incoming UI-frame with TEI value different from 127.	yes	yes	pass	only PTMP mode
TBR3_L2 / LM / S30 / Establish awaiting TEI					
TC13008	Remains in state 3 after receiving Identity Denied frame (TEI allocation denied).	yes	yes	pass	only PTMP mode
TC13010	No response from the network, IUT transmits ID-request N202 times.	yes	yes	pass	only PTMP mode
TC13014	Ignores a ID assign message containing a different RI.	yes	yes	pass	only PTMP mode
TBR3_L2 / LM / S40 / TEI assigned					
TC14001	Correct answer to Identity Check Request with TEI 127.	yes	yes	pass	only PTMP mode
TC14002	Correct answer to Identity Check Request with IUT TEI.	yes	yes	pass	only PTMP mode
TBR3_L2 / DC / S40 / TEI assigned					
TC24004	IUT initiates Multiple Frame Operation	yes	yes	pass	
TC24020	No reaction to a SABME frame with a different TEI value.	yes	yes	pass	
TBR3_L2 / DC / S50 / Awaiting establishment					
TC25002	IUT enters state 4 after receiving DM F=1.	yes	yes	pass	
TC25005	No response from the network, IUT retransmit SABME N200 times.	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
TBR3_L2 / DC / S70 / Multiple frame established					
TC27003	Numbering of N(R) and N(S).	yes	yes	pass	
TC27004	IUT accepts acknowledgement by an I-frame.	yes	yes	pass	
TC27011	IUT receives a REJ F=0 and retransmits the requested outstanding I-frame.	yes	yes	pass	
TC27012	Network releases state 7	yes	yes	pass	
TC27015	I-frame loss, no acknowledgement from network, IUT retransmits I-frame or RR command frame two times.	yes	yes	pass	
TC27019	I-frame loss, no acknowledgement from network, IUT retransmits I-frame or transmits RR P=1 at T200 expiry.	yes	yes	pass	
TC27022	Network initiates re-establishment.	yes	yes	pass	
TC27027	IUT transmits REJ-frame F=1 after receiving a I-frame P=1 with N(S) error.	yes	yes	pass	
TC27028	IUT transmits REJ-frame F=0 after receiving a I-frame P=0 with N(S) error.	yes	yes	pass	
TC27031	IUT initiates TEI removal or TEI verify procedure after receiving an UA F=1 frame.	yes	yes	pass	only PTMP mode
TC27040	IUT initiates reestablishment of data link after receiving a RR command frame P=1 with N(R) error.	yes	yes	pass	
TC27043	IUT initiates reestablishment of data link after receiving a RR response frame F=1 with N(R) error.	yes	yes	pass	
TC27046	IUT initiates reestablishment of data link after receiving a RR response frame F=0 with N(R) error.	yes	yes	pass	
TC27058	IUT discards a frame with FCS error.	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
TBR3_L2 / DC / S74 / Multiple frame established, peer receiver busy					
TC27404	IUT does not transmit any I-frames in state 7.4, transmit outstanding I-frames in state 7.0.	yes	yes	pass	
TC27411	No response from the network, IUT retransmits RR command N200 times.	yes	yes	pass	
TC27412	IUT receives RR P=1, transmits RR F=1 and enters state 7.0.	yes	yes	pass	
TC27413	IUT receives RR F=0 and enters state 7.0.	yes	yes	pass	
TC27414	IUT receives RNR P=1, transmits RR F=1 and remains in state 7.4.	yes	yes	pass	
TC27417	No response from the network, IUT retransmits RR command within T200.	yes	yes	pass	
TBR3_L2 / DC / S80 / Timer recovery					
TC28005	IUT receives REJ F=1, enters state 7.0 and retransmits the rejected I-frame.	yes	yes	pass	
TC28012	IUT is able to receive I-frames.	yes	yes	pass	
TBR3_L2 / DC / S84 / Timer recovery, peer receiver busy					
TC28406	IUT is able to receive I-frames.	yes	yes	pass	
TC28424	IUT receives REJ P=1 not acknowledging the last transm. I-frame, transmits RR F=1, enters state 8.0.	yes	yes	pass	

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7 Observations

There are no observations.

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Protocol Conformance Test Report

for

European Telecommunication Standard

TBR 3 with TBR 3 A1

Integrated Services Digital Network (ISDN)
User-network interface
Network Layer (Layer 3)
specifications

PCTR Number: 21119728_001

TÜV Rheinland Group

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4 Dynamic Conformance Summary

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1 Identification Summary

1.1 Protocol Conformance Test Report (PCTR)

PCTR Number:	21119728_001
PCTR Date:	2005-07-11
Corresponding SCTR Number:	21119728_001
Corresponding SCTR Date:	2005-07-11

Tested by:

2005-07-11	Klaus Jauernik	
Date	Name	Signature

Checked by:

2005-07-11	Glenn Zimmermann	
Date	Name	Signature

1.2 Test Laboratory

TÜV Rheinland Product Safety GmbH
Section Telecommunications
Am Grauen Stein
D - 51105 Köln

Contact Person:	Klaus Jauernik
Phone:	+49-221-806-3428
Fax:	+49-221-806-1605

Accredited testing laboratory

Accredited by:	DAR (Deutscher Akkreditierungs Rat)
DAR-registration number:	TTI-P-G 093/94

1.3 Client Information

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany
Telephone:	+49-30-79705390
Telefax:	+49-30-79705391
Contact Person:	Herr Klaus-Peter Junghanns
Telephone:	+49-30-79705392

1.4 Implementation under Test

Identification:

Name:	BRIstuff
Version:	0.3.0

Protocol Standard: TBR 3 (11.95)
TBR 3 / A1 (12.97)

PICS: See corresponding

SCTR Number:	21119728_001
SCTR Date:	2005-07-11

Previous PCTR if any (optional):

Information about the tested product and its configuration e.g. for PC Cards:

SUT Name:	quadBRI PCI ISDN
SUT Version/Model:	V 1.0
Hardware environment:	-
-Processor:	
Software environment:	
- Operating system:	
- D-channel software:	BRIstuff 0.3.0
- B-channel protocol:	
- Loader file:	
- Filetransfer program:	
- Terminal program:	

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Supplier (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

Manufacturer (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

1.5 Test Information

Date of receipt of IUT:	2005-06-07
Receipt No.:	69632
Date(s) of testing:	2005-06-08
Testing location:	51105 Köln

Detailed information about the used test-equipment and the calibration dates is listed in the general test instruction.

1.6 Testing Environment

PIXIT: See corresponding
SCTR Number: 21119728_001
SCTR Date: 2005-07-11

Abstract Test Suite (ATS) Standard:
- TBR 3 (11.95) with TBR 3 A1 (12.97)

- ITAAB-Note: 066rev.3
- ITAAB-Note 087
- Futher ITAAB-Notes (listed under observations)

Abstract Test Method: Remote Single Layer Embedded (RSE)

Means of Testing identification:
- Executable Test Suite: Siemens TBR 3 Conf. Tests, Layer 3 V 1.1 rev. 2

- Terminal identifier: Siemens Protocol Tester K1197
  Serial No.: BF9508-1

1.7 Limits and Reservations

The test results only relate to the items tested.
Without permission of the test center this report is not permittet to be duplicated in extracts.

1.8 Comments

The tests are done in PTMP mode, some test are repeated in PTP mode.

1.9 Test Conditions

Environmental Conditions:

Temperature:	15 °C .. 25 °C (layer 2 and 3)	☒ Yes	☐ No
Relative humidity:	30 % .. 75 %	☒ Yes	☐ No
Air pressure:	86 kPa .. 106 kPa	☒ Yes	☐ No

Power Supply Limitations:

Voltage:	normal operating voltage ± 5 %	☒ Yes	☐ No
Frequency:	normal operating frequency ± 4 %	☒ Yes	☐ No

2 IUT Conformance Status

This IUT **has not** been shown by conformance assessment to be **non-conforming** to the specified protocol standard.

3 Static Conformance Summary

The PICS for this IUT is consistent with the static conformance requirements in the specified protocol standard.

4 Dynamic Conformance Summary

The test campaign **did not** reveal errors in the IUT.

5 Static Conformace Review Report

There were **no errors** in the static conformance test affecting this campaign.

6 Test Campaign Report

The tables in this part indicate for each test both the test case selection that was performed by the test laboratory and the results of testing. The tables are set up as followed below. Notes on the information that the test laboratory shall complete in the colums are profited below, and reverenced as x).

Name of test group					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
a)	**b)**	**c)**	**d)**	**e)**	**f)**

a) Reference to the abstract test case of the ATS standard.

b) Reference to the test in the abstract test case of the ATS standard.

c) Indicates whether or not the test was selected according to the PICS and PIXIT.

d) Indicates whether or not the test was run to completion.

e) Indicates the verdicts as assigned during the test campaign.

Possible verdicts are:

- pass: The test purposes according to the ATS is achieved, tests running as defined in ETS to completion.
- inc.: The test purposes according to the ATS is not achieved, tests running not as defined in ETS to completion.
- fail: The test purpose according to the ATS is not achieved.

f) Indicates a observation or a reference to a observation made in part 7 of this test report.

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ATS Reference	Description	Selected	Run	Verdict	Observations
TBR3_L3 / U00 / PS / Incomming call / Called user tests, Null state					tested in PTMP and retested in PTP mode
TC10002	IUT receives REL, transmits REL COMP.	yes	yes	pass	
TC10004	IUT receives STATUS, transmits REL or REL COMP., cause 101.	yes	yes	pass	
TC10005	IUT receives a valid SETUP without SCI.	yes	yes	pass	
TC10006	IUT receives a valid SETUP with SCI.	yes	yes	pass	
TC10008	IUT receives a valid SETUP with incompatible BC.	yes	yes	pass	
TC10009	IUT receives a valid SETUP with incompatible HLC.	no	no	none	
TC10010	IUT receives an inopportune PDU (DISC.).	yes	yes	pass	
TC10011	IUT receives a repeated valid SETUP with the same CR.	yes	yes	pass	
TC10015	IUT receives a PDU with mandatory infomation element missing.	yes	yes	pass	
TC10024	IUT receives a PDU with invalid duplicated infomation element.	yes	yes	pass	
TC10027	IUT receives a PDU with unrecognised infomation element (comprehension required).	yes	yes	pass	
TC10028	IUT receives a compatible SETUP with an unrecognised optional infomation element (comprehension not required).	yes	yes	pass	
TC10029	IUT receives a compatible SETUP with non-mandatory information element content error.	yes	yes	pass	
TBR3_L3 / U00 / AC / Called user tests, Null state					tested in PTMP and retested in PTP mode
TC20001	IUT sends a RESUME PDU.	no	no	none	
TC20002	IUT sends a valid SETUP.	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
TBR3_L3 / U01/ PS / Call initiated state					
TC10101	IUT receives a CALL PROCEEDING.	yes	yes	pass	
TC10102	IUT receives a REL COMPLETE.	yes	yes	pass	
TC10103	IUT receives a REL.	yes	yes	pass	
TC10104	IUT receives a SETUP ACK.	yes	yes	pass	
TC10105	IUT receives a STATUS indicating the Null state.	yes	yes	pass	
TC10107	IUT receives an inopportune PDU.	yes	yes	pass	
TC10120	IUT receives a syntactical invalid message.	yes	yes	pass	
TC10125	IUT receives a REL COMPLETE with different CR..	yes	yes	pass	
TBR3_L3 / U02 / PS / Overlap sending state					
TC10201	IUT receives an ALERTING.	yes	yes	pass	
TC10202	IUT receives a CONNECT.	yes	yes	pass	
TC10203	IUT receives a CALL PROCEEDING.	yes	yes	pass	
TC10204	IUT receives a DISCONNECT.	yes	yes	pass	
TBR3_L3 / U02 / AC / Overlap sending state					
TC20203	IUT transmits a DISCONNECT.	yes	yes	pass	
TC20204	IUT transmits an INFORMATION PDU.	yes	yes	pass	
TBR3_L3 / U03 / PS / Outgoing call proceeding state					
TC10301	IUT receives an ALERTING.	yes	yes	pass	
TC10302	IUT receives a CONNECT.	yes	yes	pass	
TC10303	IUT receives a DISCONNECT.	yes	yes	pass	
TBR3_L3 / U03 / AC / Outgoing call proceeding state					
TC20301	IUT transmits a DISCONNECT.	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
TBR3_L3 / U04 / PS / Call delivered state					
TC10401	IUT receives a CONNECT.	yes	yes	pass	
TC10402	IUT receives a DISCONNECT.	yes	yes	pass	
TBR3_L3 / U04 / AC / Call delivered state					
TC20401	IUT transmits a DISCONNECT.	yes	yes	pass	
TBR3_L3 / U07 / PS / Call received state					
TC10701	IUT receives a DISCONNECT.	yes	yes	pass	
TBR3_L3 / U08 / PS / Connect request state					
TC10801	IUT receives a CONNECT ACK.	yes	yes	pass	
TC10802	IUT receives a DISCONNECT.	yes	yes	pass	
TC10805	IUT receives a RELEASE.	yes	yes	pass	
TBR3_L3 / U09 / PS / Incomming call proceeding state					
TC10901	IUT receives a DISCONNECT.	yes	yes	pass	
TBR3_L3 / U10 / PS / Active state					
TC11003	IUT receives a NOTIFY.	yes	yes	pass	
TC11004	IUT receives a REL COMPLETE.	yes	yes	pass	
TC11005	IUT receives a RELEASE.	yes	yes	pass	
TC11007	IUT receives a STATUS indicating the Null state.	yes	yes	pass	
TC11008	IUT receives an inopportune PDU.	yes	yes	pass	
TC11021	IUT receives a syntactical invalid message.	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
TBR3_L3 / U10 / AC / Active state					
TC21001	T308 is within the range 3 s to 15 s	yes	yes	pass	
TC21003	IUT transmits a DISCONNECT.	yes	yes	pass	
TC21005	IUT transmits a SUSPEND.	no	no	none	No BSPRE
TC21006	T305 is within the range 15 s to 45 s	yes	yes	pass	
TBR3_L3 / U11 / PS / Disconnect request state					
TC11101	IUT receives a DISCONNECT.	yes	yes	pass	
TC11103	IUT receives a NOTIFY.	yes	yes	pass	
TC11105	IUT receives a NOTIFY.	yes	yes	pass	
TC11107	IUT receives an inopportune PDU.	yes	yes	pass	
TC11118	IUT receives a RELEASE with unrecognised infomation element (comprehension not required).	yes	yes	pass	
TBR3_L3 / U15 / PS / Suspend request state					
TC11501	IUT receives a DISCONNECT.	no	no	none	No BSPRE
TC11503	IUT receives a NOTIFY.	no	no	none	No BSPRE
TC11504	IUT receives a SUSPEND ACK.	no	no	none	No BSPRE
TC11508	IUT receives a SUSPEND ACK.	no	no	none	No BSPRE
TBR3_L3 / U17 / PS / Resume request state					
TC11701	IUT receives a DISCONNECT.	no	no	none	No BSPRE
TC11703	IUT receives a RESUME ACK.	no	no	none	No BSPRE
TC11706	IUT receives a RESUME REJECT.	no	no	none	No BSPRE
TBR3_L3 / U19 / PS / Release request state					
TC11903	IUT receives a REL COMPLETE.	yes	yes	pass	
TC11904	IUT receives a RELEASE.	yes	yes	pass	
TC11906	IUT receives a STATUS indicating the Null state.	yes	yes	pass	
TC11908	IUT receives an inopportune PDU.	yes	yes	pass	
TC11909	IUT receives a syntactical invalid message.	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
TBR3_L3 / U25 / PS / Overlap receiving state					in PTP mode
TC12501	IUT receives a DISCONNECT.	yes	yes	pass	
TC12503	IUT receives an INFORMATION PDU with sufficient called number information.	yes	yes	pass	
TBR3_L3 / R00 / PS / Global call reference, state R0					in PTP mode
TC19003	IUT receives a RESTART.	yes	yes	pass	

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Additional test for incomming call with UI-SETUP for point to multipoint configuration and the different supported BC values.

Incomming Call					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
	Receipt of a valid SETUP message: 3,1 kHz audio BC: 04 03 90 90 A3 HLC: - LLC: -	yes	yes	pass	
	Receipt of a valid SETUP message: Speech BC: 04 03 80 90 A3 HLC: - LLC: -	yes	yes	pass	
	Receipt of a valid SETUP message: G3 Fax BC: 04 03 90 90 A3 HLC: 7D 02 91 84 LLC: -	no	no	none	
	Receipt of a valid SETUP message: G4 Fax BC: 04 02 88 90 HLC: 91 A1 LLC: -	no	no	none	
	Receipt of a valid SETUP message: Unrestricted dig. Information BC: 04 02 88 90 HLC: - LLC: -	no	no	none	
	SETUP message from the terminal: Restricted dig. Information BC: 04 02 89 90 HLC: - LLC: -	no	no	none	
	Receipt of a valid SETUP message: Video BC: 04 02 98 90 HLC: - LLC: -	no	no	none	
	Receipt of a valid SETUP message: 7 kHz audio BC: 91 90 HLC: - LLC: -	no	no	none	

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Additional test for outgoing call for point to multipoint configuration and the different supported BC values.

Outgoing Call					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
	SETUP message from the terminal: 3,1 kHz audio BC: 04 03 90 90 A3 HLC: LLC:	no	no	none	
	SETUP message from the terminal: Speech BC: 04 03 80 90 A3 HLC: - LLC: -	yes	yes	pass	
	SETUP message from the terminal: G3 Fax BC: 04 03 90 90 A3 HLC: 7D 02 91 84 LLC: -	no	no	none	
	Receipt of a valid SETUP message: G4 Fax BC: 04 02 88 90 HLC: 7D 02 91 A1 LLC: -	no	no	none	
	Receipt of a valid SETUP message: Unrestricted dig. Information BC: 04 02 88 90 HLC: - LLC: 7C 02 88 90	no	no	none	
	SETUP message from the terminal: Restricted dig. Information BC: 04 02 89 90 HLC: - LLC: -	no	no	none	
	Receipt of a valid SETUP message: Video BC: 04 02 98 90 HLC: - LLC: -	no	no	none	
	Receipt of a valid SETUP message: 7 kHz audio BC: 04 02 91 90 HLC: - LLC: -	no	no	none	

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Abstract Test Suite: TBR 8 second edition					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
7.2 TC20002a	Outgoing call from the IUT: Speach BC: 04 03 80 90 A3 HLC: 7D 02 91 81 without optional LLC: LLC: 7C 02 91 81 LLC: 7C 03 91 81 A3	no	no	none none none	
7.3	Incomming valid call, compatibility checking:				
7.3 a TC10005a	BC: 04 02 80 90 A3 (speech)	no	no	none	
7.3 b TC10005b	BC: 04 03 80 90 A3 HLC: 7D 02 91 81 (telefonie)	no	no	none	
7.3 c TC10005c	BC: 04 03 80 90 A3 LLC: 7C 02 80 90 (speech)	no	no	none	
7.3 d TC10005d	BC: 04 03 80 90 A3 LLC: 7C 02 80 90 A3 (sp. A-law)	no	no	none	
7.3 e TC10005e	BC: 04 03 80 90 A3 HLC: 7D 02 91 81 LLC: 7C 02 80 90	no	no	none	
7.3 f TC10005f	BC: 04 03 80 90 A3 HLC: 7D 02 91 81 LLC: 7C 02 80 90 A3	no	no	none	
7.3 g TC10005g	BC: 04 03 80 90 A3 HLC: 7D 02 91 81 inc. LLC: 7C 03 80 90 A2 (inc.: u-law)	no	no	none	
7.3 h TC10005h	BC: 04 03 90 90 A3 (3,1 kHz A.) PI: #1 or #3	no	no	none	

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7 Observations

There are no observations.

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Protocol Conformance Test Report

for

Australian Standard
AS / ACIF S031:2001

Requirements for ISDN Basic Access Interface
(Layer 1, 2 and 3)

PCTR Number: 21119728_001

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2 IUT Conformance Status

3 Static Conformance Summary

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5 Static Conformace Review Report

6 Test Campaign Report

7 Observations

1 Identification Summary

1.1 Protocol Conformance Test Report (PCTR)

PCTR Number:	21119728_001
PCTR Date:	2005-07-11
Corresponding SCTR Number:	21119728_001
Corresponding SCTR Date:	2005-07-11

Tested by:

2005-07-11	Klaus Jauernik	
Date	Name	Signature

Checked by:

2005-07-11	Glenn Zimmermann	
Date	Name	Signature

1.2 Test Laboratory

TÜV Rheinland Product Safety GmbH
Section Telecommunications
Am Grauen Stein
D - 51105 Köln

Contact Person:	Klaus Jauernik
Phone:	+49-221-806-3428
Fax:	+49-221-806-1605

Accredited testing laboratory

Accredited by:	DAR (Deutscher Akkreditierungs Rat)
DAR-registration number:	TTI-P-G 093/94

1.3 Client Information

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany
Telephone:	+49-30-79705390
Telefax:	+49-30-79705391
Contact Person:	Herr Klaus-Peter Junghanns
Telephone:	+49-30-79705392

1.4 Implementation under Test

Identification:

Name:	BRIstuff
Version:	0.3.0
Protocol Standard:	TBR 3 (11.95) TBR 3 / A1 (12.97) AS/ACIF S031:2001
PICS: See corresponding SCTR Number:	21119728_001
SCTR Date:	2005-07-11
Previous PCTR if any (optional):	-

Information about the tested product and its configuration e.g. for PC Cards:

SUT Name:	quadBRI PCI ISDN
SUT Version/Model:	V 1.0
Hardware environment:	-
-Processor:	
Software environment:	
- Operating system:	
- D-channel software:	BRIstuff 0.3.0
- B-channel protocol:	
- Loader file:	
- Filetransfer program:	
- Terminal program:	

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Supplier (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

Manufacturer (if not identical to client)

Name:	Junghanns.NET GmbH
Street:	Breite Strasse 13A
City:	12167 Berlin
Country:	Germany

1.5 Test Information

Date of receipt of IUT:	2005-06-07
Receipt No.:	69632
Date(s) of testing:	2005-06-07 & 2005-06-08 & 2005-06-13
Testing location:	51105 Köln

Detailed information about the used test-equipment and the calibration dates is listed in the general test instruction.

1.6 Testing Environment

PIXIT: See corresponding
SCTR Number: 21119728_001
SCTR Date: 2005-07-11

Abstract Test Suite (ATS) Standard:
- TBR 3 (11.95) with TBR 3 A1 (12.97)
- AS/ACIF S031:2001

Abstract Test Method: Remote Single Layer Embedded (RSE)

Means of Testing identification:
- Executable Test Suite:
- Terminal identifier:
  Please look at PCTR of TBR 3 with TBR 3 A1

1.7 Limits and Reservations

The test results only relate to the items tested.
Without permission of the test center this report is not permittet to be duplicated in extracts.

1.8 Comments

There are no commnets.

1.9 Test Conditions

Environmental Conditions:

Temperature:	15 °C .. 25 °C (layer 1)	☒ Yes	☐ No
Relative humidity:	30 % .. 75 %	☒ Yes	☐ No
Air pressure:	86 kPa .. 106 kPa	☒ Yes	☐ No

Power Supply Limitations:

Voltage:	normal operating voltage ± 5 %	☒ Yes	☐ No
Frequency:	normal operating frequency ± 4 %	☒ Yes	☐ No

Accurancy level of all eassurements:

Voltage:	better than +- 2%	☒ Yes	☐ No
Current:	better than +- 2%	☒ Yes	☐ No
Frequency:	better than +- 0,25%	☒ Yes	☐ No
Time:	better than +- 0,5%	☒ Yes	☐ No

Tolerance of component values for individual tests: ☒ not used

Resistors:	1 %
Capacitance:	+- 1 %
Inductors:	-0%, + 25 %

2 IUT Conformance Status

This IUT **has not** been shown by conformance assessment to be **non-conforming** to the specified protocol standard.

3 Static Conformance Summary

The PICS for this IUT is consistent with the static conformance requirements in the specified protocol standard.

4 Dynamic Conformance Summary

The test campaign **did not** reveal errors in the IUT.

5 Static Conformace Review Report

There were **no errors** in the static conformance test affecting this campaign.

6 Test Campaign Report

The tables in this part indicate for each test both the test case selection that was performed by the test laboratory and the results of testing. The tables are set up as followed below. Notes on the information that the test laboratory shall complete in the colums are profited below, and reverenced as x).

Name of test group					
ATS Reference	**Description**	**Selected**	**Run**	**Verdict**	**Observations**
a)	**b)**	**c)**	**d)**	**e)**	**f)**

a) Reference to the abstract test case of the ATS standard.

b) Reference to the test in the abstract test case of the ATS standard.

c) Indicates whether or not the test was selected according to the PICS and PIXIT.

d) Indicates whether or not the test was run to completion.

e) Indicates the verdicts as assigned during the test campaign.

Possible verdicts are:

- pass: The test purposes according to the ATS is achieved, tests running as defined in ETS to completion.
- inc.: The test purposes according to the ATS is not achieved, tests running not as defined in ETS to completion.
- fail: The test purpose according to the ATS is not achieved.

f) Indicates a observation or a reference to a observation made in part 7 of this test report.

ATS Reference	Description	Selected	Run	Verdict	Observations
6.3	Fail-safe operation Compliance with the requirements of fail-safe operation specified in Clause 5.1.1 should be checked by operation and inspection.	yes	yes	pass	
5.1	General				
5.1.1	File-safe operations No harm or damage to a Telecommunications Network or Facility if				
5.1.1.1	a) Failure of any single mechanical or electrical component b) Failure of any power suppply including mains voltage and local battery c) Incorrect manual operation	yes	yes	pass	
5.1.1.2	operated outside the range of voltage and environmental conditions	yes	yes	pass	Powered over PCI Bus or by separate power regulator on PCI card.
5.1.1.3	Battery voltage variation ob battery-powered devices	no	no	none	Not powered by battery.
6.4	Emergency calling Compliance with the Emergency Calling requirements specified in Clause 5.1.2 should be checked by operation and inspection.	yes	yes	pass	Send out Call over PC (Headset).
5.1.2	Emergency services access CE capable of establishing speech circuits	yes	yes	pass	
5.1.2.1	shall support emergency mumber ‘000’ and ‘106’ dialing	yes	yes	pass	
5.1.2.2	should nor support barring of access to emergency number ‘000’ and ‘106’	yes	yes	pass	
5.1.2.3	and if the are mains powered they should continue to support emergency mumber ‘000’ and ‘106’ dialing for at least 30 minutes following loss of mains power (or a warning notice is needed).	yes	yes	pass	Warning notice in user manual.

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ATS Reference	Description	Selected	Run	Verdict	Observations
6.5.1	General				
6.5.1.1	Compliance with the requirements of Physical Layer (Layer 1) specified in Clause 5.2 should be demonstrated in accordance with the testing requirements specified in the Common Technical Regulation CTR003 (Am1) and the testing requirements specified in ITAAB Advisory Notes 048, 053, 060, 061, 069, 071, 076, 088, 094, 096, 098, 102, 110 ,114, 116, 118, 120 and 126. CTR003 (Am1) references ETSI Technical Basis for Regulation TBR 003 as amended by TBR 003/A1 for requirements and testing.	yes	yes	pass	
6.5.1.2	Any variations or additional testing requirements specified in Clause 6.5.2 should be complied with.	yes	yes	pass	
6.5.2	Variation/additional tests				
6.5.2.1	Terminating resistors Compliance with the requirements of Terminating Resistors specified in Clause 5.2.2.1 should be demonstrated by inspection or operation.	yes	yes	pass	
5.2	**Physical Layer (Layer 1)**				
5.2.1	General				
5.2.1.1	Compliance with the requirements of CTR003 with reference to ETSI TBR 003 as amended by TBR 003/A1 for requirements and testing.	yes	yes	pass	
5.2.2	Variations or additions				
5.2.2.1	Terminating resistors				
5.2.2.1.1	In a point-to-point wiring configuration terminating resistors may be included. Resistors can be disconnected/reconnected	yes	yes	pass	Termination resistors can be switched on or of by DIP switches on PCI Card according to the user manual.
5.2.2.1.2	In a point-to-multipoint wiring configuration terminating resistors may be included. Resistors can be disconnected/reconnected	yes	yes	pass	Termination resistors can be switched on or of by DIP switches on PCI Card according to the user manual.
5.2.2.2	ITAAB Advisory Notes When applicable the Customer Equipment shall comply with the requirements specified in ITAAB Advisory Notes 071, 096, 102, 116 and 126.	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
6.6	Data Link Layer (Layer 2) Compliance with the requirements of Data Link Layer (Layer 2) specified in Clause 5.3 should be demonstrated in accordance with the testing requirements specified in the Common Technical Regulation CTR003 (Am1) and the testing requirements specified in ITAAB Advisory Notes 066, 071, 086, 096, 110, 123 and 125. CTR003 (Am1) references ETSI Technical Basis for Regulation TBR 003 as amended by TBR 003/A1 for requirements and testing.	yes	yes	pass	
5.3	**Data link Layer (Layer 2)**				
5.3.1	Compliance with the requirements of CTR003 with reference to ETSI TBR 003 as amended by TBR 003/A1 for requirements and testing.	yes	yes	pass	
5.3.2	ITAAB Advisory Notes When applicable the Customer Equipment shall comply with the requirements specified in ITAAB Advisory Notes 071 and 096.	yes	yes	pass	

ATS Reference	Description	Selected	Run	Verdict	Observations
6.7	**Network Layer (Layer 3)**				
6.7.1	General				
6.7.1.1	Compliance with the requirements of Network Layer (Layer 3) specified in Clause 5.4 should be demonstrated in accordance with the testing requirements specified in the Common Technical Regulation CTR003 (Am1) and the testing requirements specified in ITAAB Advisory Notes 055, 066, 071, 080, 083, 085, 087, 096 and 110. CTR003 (Am1) references ETSI Technical Basis for Regulation TBR 003 as amended by TBR 003/A1 for requirements and testing.	yes	yes	pass	
6.7.1.2	Any variations or additional testing equirements specified in Clause 6.7.2 should be complied with.	yes	yes	pass	
5.4	**Network Layer (Layer 3)**				
5.4.1	Compliance with the requirements of CTR003 with reference to ETSI TBR 003 as amended by TBR 003/A1 for requirements and testing.	yes	yes	pass	
5.4.2	Variations/additional requirements				

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ATS Reference	Description	Selected	Run	Verdict	Observations
6.7.2	Variation/additional tests				
6.7.2.1	General In addition to the tests specified in Clause 6.7.1, the CE should comply with the test requirements specified in Clauses 6.7.2.2, 6.7.2.3, 6.7.2.4 and 6.7.2.5.	yes	yes	pass	
6.7.2.2	Malicious Call IDentification (MCID) testing If supported, compliance with the requirements of Malicious Call IDentification (MCID) using functional procedures as specified in EN 300 128 and EN 300 130-1 should be demonstrated in accordance with test methods specified in EN 300 130-3	no	no	none	No MCID supported.
5.4.2.1	Malicious Call Identificatio (MCID)				
5.4.2.1.1	Supporting of MCID supplementary services for speech and 3.1 kHz audio bearer services is optional.	no	no	none	No MCID supported.
5.4.2.1.2	If the MCID supplementary services is supported: Customer Equipment shall comply with functional procedures specified in EN 300 128 and EN 300 130-1 and should be demonstrated with the tests methods specified in EN 300 130-3	no	no	none	No MCID supported.
6.7.2.3	Calling Line Identification Restriction (CLIR) testing				
6.7.2.3.1	If supported, compliance with the requirements of Calling Line Identification Restriction (CLIR) specified in Clause 5.4.2.2 should be demonstrated in accordance with the procedures in Clauses 6.7.2.3.2 and 6.7.2.3.3.	yes	yes	pass	
6.7.2.3.2	CE should be tested to confirm CLIR supplementary service requirements by conducting the following procedure: (a) From the Device Under Test (DUT) initiate a call to the test equipment with the CLIR Temporary Mode 1 service invoked for that call. (b) Clear the call attempt down. (c) Initiate a second call to the test equipment, this time without attempting to restrict CLI presentation. (d) Clear the call attempt down. (e) From the DUT, initiate a call to the test equipment with the CLIR Temporary Mode 2 service invoked for that call.	yes	yes	pass	In the user application it is possible to configurate for each call how it will be send out. The standard (temporary mode 1 or temporary mode 2) can be overwriden for an individual call.

ATS Reference	Description	Selected	Run	Verdict	Observations
6.7.2.3.3	Verify the following: (a) A SETUP message with a Calling Party Number IE with the Presentation Indicator set to 'Presentation Restricted' is initiated by the procedure described in Clause 6.7.2.3.2 (a). (b) In accordance with the procedure described in Clause 6.7.2.3.2 (c), a SETUP message is initiated with any of the following: (i) No Calling Party Number IE. (ii) A Calling Party Number IE with the Presentation Indicator set to 'Presentation Allowed'. (iii) A Calling Party Number IE without optional octet 3a included. (c) In accordance with procedures described in Clause 6.7.2.3.2 (e), a SETUP message is initiated and includes a Calling Party Number IE with the Presentation Indicator set to 'Presentation allowed'.	yes	yes	pass	
5.4.2.2	**Calling Line Identification Restriction (CLIR)**				
5.4.2.2.1	CLIR procedures provide the Calling Party with the ability to restrict presentation of the Calling Party´s ISDN number and subaddress to the called party.	yes	yes	pass	
5.4.2.2.2	Two user subscriber options: a) Temporary Mode 1 with default of presentation not restricted b) Temporary Mode 2 with default of presentation restricted	yes	yes	pass	In the user application it is possible to configurate for each call how it will be send out. The standard (temporary mode 1 or temporary mode 2) can be overwriden for an individual call.
5.4.2.2.3	If CLIR is supported, the CE shall support ether Temporary Mode 1 or 2 or both variants: a)CE shall send an indication to the network, advising the network to restrict presentation on a per call basis b) CE shall send an indication to the network, advising the network to allow presentation on a per call basis	yes	yes	pass	
5.4.2.2.4	CE shall provide Functional procedures to allow restriction of CLI ao a per call basis in accordance with the ETSI specifications: ETSI EN 300 090 and EN 300 093-1.	yes	yes	pass	

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ATS Reference	Description	Selected	Run	Verdict	Observations
6.7.2.4	Calling Line Identification Presentation (CLIP) testing Compliance with the requirements of Calling Line Identification Presentation (CLIP) specified in Clause 5.4.2.3 should be demonstrated in accordance with the testing requirements specified in the Common Technical Regulation CTR003 (Am1).	yes	yes	pass	
5.4.2.3	**Calling Line Identification Presentation (CLIP)**				
5.4.2.3.1	CLIP procedures provide the Calling Party with the possibility of receiving the Calling Party identity..	yes	yes	pass	Is shown on PC.
5.4.2.3.2	CE shall comply with CLIP requirements specified in ETSI EN 300 089 and EN 300 092-1.	yes	yes	pass	
5.4.2.4	ITAAB Advisory Notes Where applicable, the Customer Equipmet shall comply with the requirements specified in ITAAB Advisory Notes 055, 071, 087 and 096.	yes	yes	pass	
6.7.2.5	Initiation of repeated outgoing call attempts Compliance with the requirements of Initiation of Repeated Outgoing Call Attempts specified in Clause 5.4.2.5 should be checked by operation and inspection.	no	no	none	The application does not support automatic repeated outgoing call attempts.
5.4.2.5	Initiation of automatic repeated outgoing call attemps	no	no	none	
5.4.2.5.1	CE shall provide a minimum off-line periode of 2 seconds between successive automatic initiated calls from any channel(s) on the interface to the required number.	no	no	none	
5.4.2.5.2	In any 30 minute periode, a CE shall not automatically initiate more than ten calls from any channel(s) on the interface to any single called party number, unless a call is successful.	no	no	none	

Additional tests if the supplement service MCID is implemented According to EN 300 130-3:	no	no	none	MCID not implemented.

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7 Observations

There are no observations.

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Annex Testlog

SCTR Number: 21119728_001

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Annex PICS/PIXIT

Protocol Implementation Conformance Statement (PICS)

Protocol Implementation Extra Information For Testing (PIXIT)

SCTR Number: 21119728_001

TÜV Rheinland Group

Test Laboratory	
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Supplier	(if not identical to client)
Name:	Junghanns.NET GmbH
Street: City: Country:	Breite Strasse 13A 12167 Berlin Germany

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Manufacturer	(if not identical to client)
Name:	Junghanns.NET GmbH
Street: City: Country:	Breite Strasse 13A 12167 Berlin Germany

System under Test	(device)
Name:	quadBRI PCI ISDN PCI card with four ISDN Basic Rate Interface (BRI) ports.
Version/Model:	V 1.0
Serial Number:	49109154
Hardware Configuration:	-
Processor:	-
Software Configuration:	
Operating System:	Linux
Previous SCTR or PCTR if any (optional):	This testreport includes the test of the new software. The hardware of the product was tested under test report 21109632_001 from 2004-02-04.
Description:	PCI card with four ISDN Basic Rate Interface (BRI) ports.

Implementation Under Test (firmware)	
Name:	BRIstuff
Version:	0.3.0
Additional Information:	-

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Implementation Under Test (hardware)	
ISDN-Chip-Set:	Cologne Chip HFC-4S
ISDN-Transformer:	UMEC UT20795-05TS

Test Parameter Settings	
LAPD Protocol variant	☒ DSS1 ☐ 1 TR 6
Incomming calls	☒ Yes ☐ No
Outgoing calls	☒ Yes ☐ No
Layer 3 service type, SETUP Parameter	☒ Speech ☐ Audio 3,1 kHz ☐ Audio 7,0 kHz ☐ Data ☐ Video
Calling Party Number	P.NUMBER 4711007
Sub Address	SUB.ADR

Test Parameter Settings, Layer 1	
TE loopback Capability	☒ B1and B2 ☐ B1 and B2 and D ☐ B1 only ☐ B2 only
Explain how specific patterns can be transmitted in the B-channels, either by providing a loopback or a 64 kbit/s clear data path to both B-channels.	By special Firmware.
Test Cord type (filled out by the test laboratory)	☐ Manufactor supplied cord ☒ Reference cord Centro Studi E Laboratori Telecommunicazioni S.p.A. cable

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PICS Parameter Settings, Layer 1		
Power Source type (PC_PS)	☐ PS1 ☐ PS2	☐ LP with Detector for PS1 ☒ LP without Detector for PS1
Is the TE mains powered	☐ Yes	☒ No over PCI bus
TE designed to minimize power disturbance (PS1)	☐ Yes	☐ No
Is the TE intended to operate as a designated TE (PS1)	☐ Yes	☐ No
Does the TE have a connection to earth	☒ Yes	☐ No

If the IUT supports the PTMP-mode:		☒ Yes	☐ No
Physical Point to Multipoint	PC_PTMP	☒ Yes	☐ No
Point to Multipoint at Layer 2	PC_PTMP_L2	☒ Yes	☐ No
IUT stable at layer 2 in state 4	PC_IUT_STA_S4	☒ Yes	☐ No
Automatic TEI assignment	PC_AUTOMAT_TEI	☒ Yes	☐ No

If the IUT supports the PTP-mode:		☒ Yes	☐ No
Physical Point to Multipoint	PC_PTMP	☐ Yes	☒ No
Point to Multipoint at Layer 2	PC_PTMP_L2	☐ Yes	☒ No
IUT stable at layer 2 in state 4	PC_IUT_STA_S4	☒ Yes	☐ No
Automatic TEI assignment	PC_AUTOMAT_TEI	☐ Yes	☒ No

Forces automatic TEI check	PC_TEI_CONNECT	☐ Yes	☒ No
State F5 implemented	PC_STA_F5	☒ Yes	☐ No
Timer APPLI 1 implemented	PC_T_APPLI1	☒ Yes	☐ No
Timer APPLI 2 implemented	PC_T_APPLI2	☐ Yes	☒ No

PIXIT Parameter Settings, Layer 1		
TE Priority Class	PX_PR_CLASS	1
TE Timer T3 value in seconds	PX_T3	3,0
TEI value if not in Automatic TEI assignment	TEI_VALUE	0
TSELFTEST-time of the IUT in seconds (power-up till operation)	PX_SELF_TEST	150
Value of timer T_Appli 1 in seconds	PX_T_APPLI1	8
Value of timer T_Appli 2 in seconds (def. = 600)	PX_T_APPLI2	-

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Test Parameter Settings, Layer 2		
Compatible SETUP PDU without Channel Identification (08 01 01 05 04 02 88 90)	PX_COMPAT_ SETUP_P	04 03 80 90 A3
TAC-Value of layer 2 (PTMP: 200 ms)	TAC_VAL_P	200 ms

PICS Parameter Settings, Layer 2		**Does the IUT support:**
If PTP mode configuration implemented:		☒ Yes ☐ No
Point to Multipoint mode	PC_PTMP_L2_P	☐ Yes ☒ No
IUT supports automatic TEI assignment in PTP	PC_AUTOM_TEI_P	☐ Yes ☒ No
IUT supports non-automatic TEI assignment in PTP	only TEI 0	☒ Yes ☐ No

If PTMP mode configuration implemented:		☒ Yes ☐ No
Point to Multipoint mode	PC_PTMP_L2_P	☒ Yes ☐ No
IUT supports automatic TEI assignment in PTMP	PC_AUTOM_TEI_P	☒ Yes ☐ No
IUT supports non-automatic TEI assignment in PTMP		☐ Yes ☒ No
IUT removes its TEI on error code condition	PC_REM_TEI_C_P	☐ Yes ☒ No
IUT supports the Identity verify procedure on error code condition	PC_VER_TEI_C_P	☒ Yes ☐ No
Support SAPI = 0		☒ Yes ☐ No
Support SAPI = 16		☐ Yes ☒ No
Support SAPI = 63		☒ Yes ☐ No
Send DISC command frame		☒ Yes ☐ No
T203 Timer	PC_TIMER203	☒ Yes ☐ No
Retransmission of an I-Frame after T200 expires	PC_IRETRANSM	☒ Yes ☐ No

PIXIT Parameter Settings, Layer 2		**Does the IUT support/Value:**
Stable in State 1	IUT_STA_S1	☒ Yes ☐ No
IUT stable in State 4 for at least 6 seconds	PX_IUT_STA_S4_P	☒ Yes ☐ No
Stable in State 6	IUT_STA_S6	☐ Yes ☒ No
Sending of a DISC command frame on demand		☐ Yes ☒ No
TEI value for non automatic assignment IUT	PX_TEI_VALUE_P	0
Explain for non-automatic TEI assignment: a) implemented TEI values b) operation needed to assign a TEI	Configuration by Mr. Junghanns.	

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PICS Parameter Settings, Layer 3		**Does the IUT support:**
Overlap sending procedure	OVS	☒ Yes ☐ No
En Block Sending without Sending Complete Information Element in outgoing SETUP	EBS_NSC	☐ Yes ☒ No
En Block Sending with Sending Complete Information Element in outgoing SETUP	EBS_SC	☒ Yes ☐ No
BC is checked in the incoming SETUP	IBCC_P	☒ Yes ☐ No
HLC is checked in the incoming SETUP	IHLCC_P	☐ Yes ☒ No
LLC is checked in the incoming SETUP		☐ Yes ☒ No
NOTIFY procedure implemented		☐ Yes ☒ No
PROGRESS procedure implemented		☐ Yes ☒ No
CALL RECEIVING state (U7) maintained: Yes: U7 implemented and U7 > 3 sec No: U7 not implemented or U7 < 3 sec	U7_MAINT_P	☒ Yes ☐ No
INC. CALL PROC. state (U9) maintained: Yes: U9 implemented and U9 > 3 sec No: U9 not implemented or U9 < 3 sec	U9_MAINT_P	☒ Yes ☐ No
CONNECT ACKNOWLEDGE PDU implemented (Responding with CON. ACK. ta a CONNECT)	BCA_P	☒ Yes ☐ No

PICS Parameter Settings, Layer 3, for PTP-mode		**Does the IUT support:**
Is the PTP mode implemented		☒ Yes ☐ No
Broadcast data link used in PTP	BDL_P	☐ Yes ☒ No
Overlap receiving procedure implemented (responding with SETUP ACK to an incoming SETUP without SCI)	OVR_P	☒ Yes ☐ No
CALL PROCEEDING PDU implemented (responding with CALL PROCEEDING to an incoming SETUP with SCI)	BCP_P	☒ Yes ☐ No
CALL RECEIVED PDU implemented (responding with ALERT to an incoming SETUP)	BAL_P	☒ Yes ☐ No

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PICS Parameter Settings, Layer 3, for PTMP-mode		**Does the IUT support:**
Is the PTMP mode implemented		☒ Yes ☐ No
Broadcast data link used in PTMP	BDL_P	☒ Yes ☐ No
Overlap receiving procedure implemented (responding with SETUP ACK to an incoming SETUP without SCI)	OVR_P	☐ Yes ☒ No
Call rearrangement procedure implemented (terminal portability)	BSPRE_P	☐ Yes ☒ No
CALL PROCEEDING PDU implemented (responding with CALL PROCEEDING to an incoming SETUP with SCI)	BCP_P	☒ Yes ☐ No
CALL RECEIVED PDU implemented (responding with ALERT to an incoming SETUP)	BAL_P	☒ Yes ☐ No

PICS Parameter Settings, Layer 3		**Does the IUT support:**
T302 in PTP-mode	BT302	☒ Yes ☐ No
T302 in PTMP-mode	BT302	☐ Yes ☒ No
T303	BT303	☒ Yes ☐ No
T304	BT304	☒ Yes ☐ No
T305	BT305	☒ Yes ☐ No
T308	BT308	☒ Yes ☐ No
T310	BT310	☒ Yes ☐ No
T313	BT313	☒ Yes ☐ No
T318 in PTMP-mode	BT318	☐ Yes ☒ No
T319 in PTMP-mode	BT319	☐ Yes ☒ No
T322	BT322	☐ Yes ☒ No

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PICS Parameter Settings, Layer 3		**Does the IUT support:**
Sublementary services:		
MSN (Multiple Subscriber Number)		☒ Yes ☐ No
TP (Terminal Portability)		☐ Yes ☒ No
SUB (Subadressing)		☐ Yes ☒ No
DDI (Direct dailing in)		☒ Yes ☐ No
HOLD (Hold) BAPT 223 ZV7 special testcases		☐ Yes ☒ No
3PTY (Three Party service) BAPT special testcases		☐ Yes ☒ No
CW (Call Waiting)		☐ Yes ☒ No
CLIP (Calling Line Identification Presentation)		☒ Yes ☐ No
CLIR (Calling Line Identification Restriction)		☒ Yes ☐ No
COLP (Connected Line Identification Presentation)		☒ Yes ☐ No
COLR (Connected Line Identification Restriction)		☒ Yes ☐ No
MCID (Malicious Call Identification)		☐ Yes ☒ No
CUG (Closed User Group)		☐ Yes ☒ No
AOC (Advice of Charge)		☐ Yes ☒ No
UUS1 implicit (User to User signalling)		☐ Yes ☒ No
CONF (Conference call)		☐ Yes ☒ No
Others:		☐ Yes ☒ No
		☐ Yes ☐ No
		☐ Yes ☐ No
		☐ Yes ☐ No

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PIXIT Parameter Settings, Layer 3		**Does the IUT support/Value:**
Fixed TEI value in PTP-mode	TEI_VALUE	0
Layer 3 service type, Outgoing calls	☒ Speech ☐ Audio 3,1 kHz ☐ Audio 7,0 kHz ☐ Data ☐ Video	
Layer 3 service type, Incomming calls	☒ Speech ☒ Audio 3,1 kHz ☐ Audio 7,0 kHz ☐ Data ☐ Video	
Sending of a SETUP on demand	BXSET_P	☒ Yes ☐ No
Sending of an INFORMATION on demand	BXINF_P	☒ Yes ☒ No
Sending of a CONNECT on demand	BXCON	☒ Yes ☐ No
Sending of a DISCONNECT on demand	BXDIS	☒ Yes ☐ No
Sending of a RELEASE on demand	BXREL	☐ Yes ☒ No
Sending of a SUSPEND on demand	BXSUS	☐ Yes ☒ No
Sending of a RESUME on demand	BXRES	☐ Yes ☒ No
Sending of a NOTIFY on demand	BXNOT	☐ Yes ☒ No
Sending of a PROGRESS on demand	BXPRO	☐ Yes ☒ No
Status enquiry procedure (sending of an STATUS ENQUIRY on demand)	BXSTQ	☐ Yes ☒ No
Restart procedure in PTP-mode		☒ Yes ☐ No
Message segmentation (not allowed !)		☐ Yes ☒ No
HLC is included in SETUP	SU_HLC_P	☐ Yes ☒ No
LLC is included in SETUP	SU_LLC_P	☐ Yes ☒ No
If not specially listed, tested with: (filled out by the test laboratory)	BC: HLC: LLC: MSN: SUB: IncompHLC:	04 03 80 90 A3 7D 02 91 81 7C 02 91 81 4711007 7D 02 88 90
Additional Information:	-	

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Annex Photo

SCTR Number: 21119728_001

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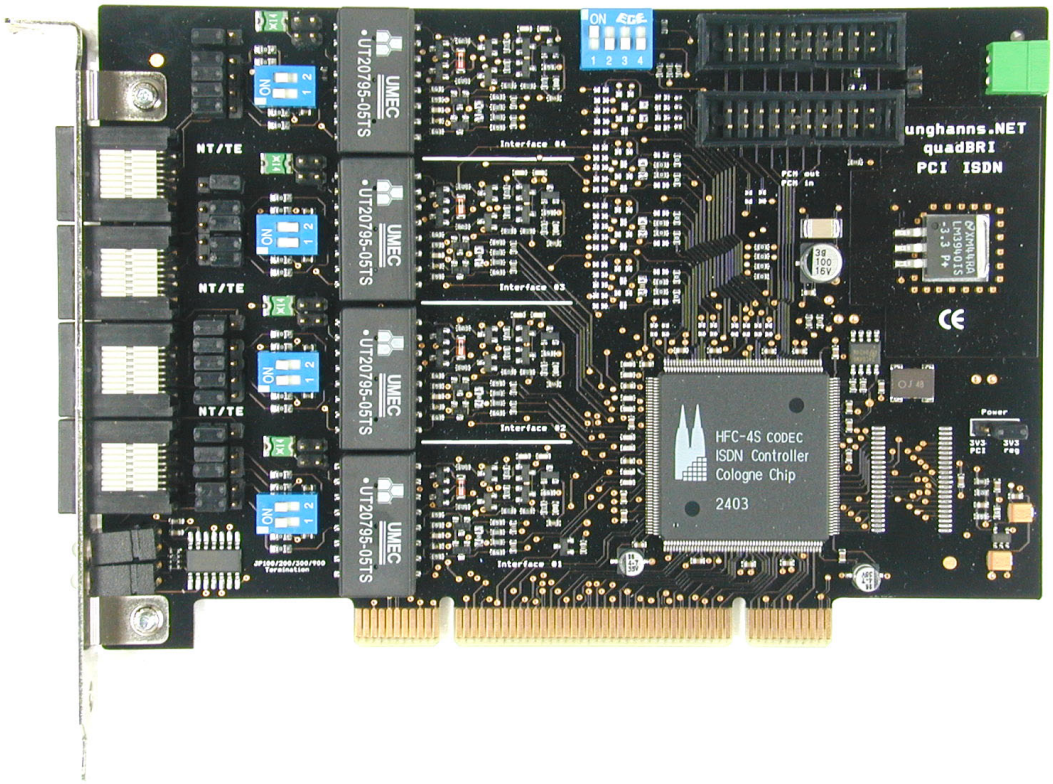

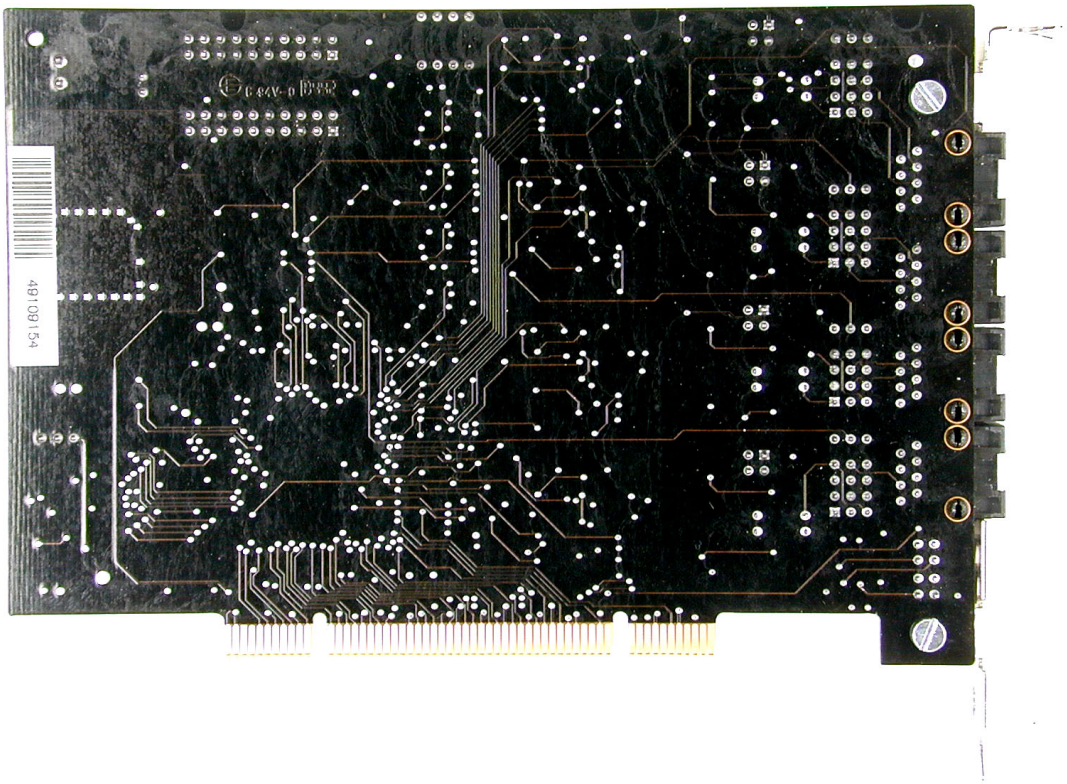

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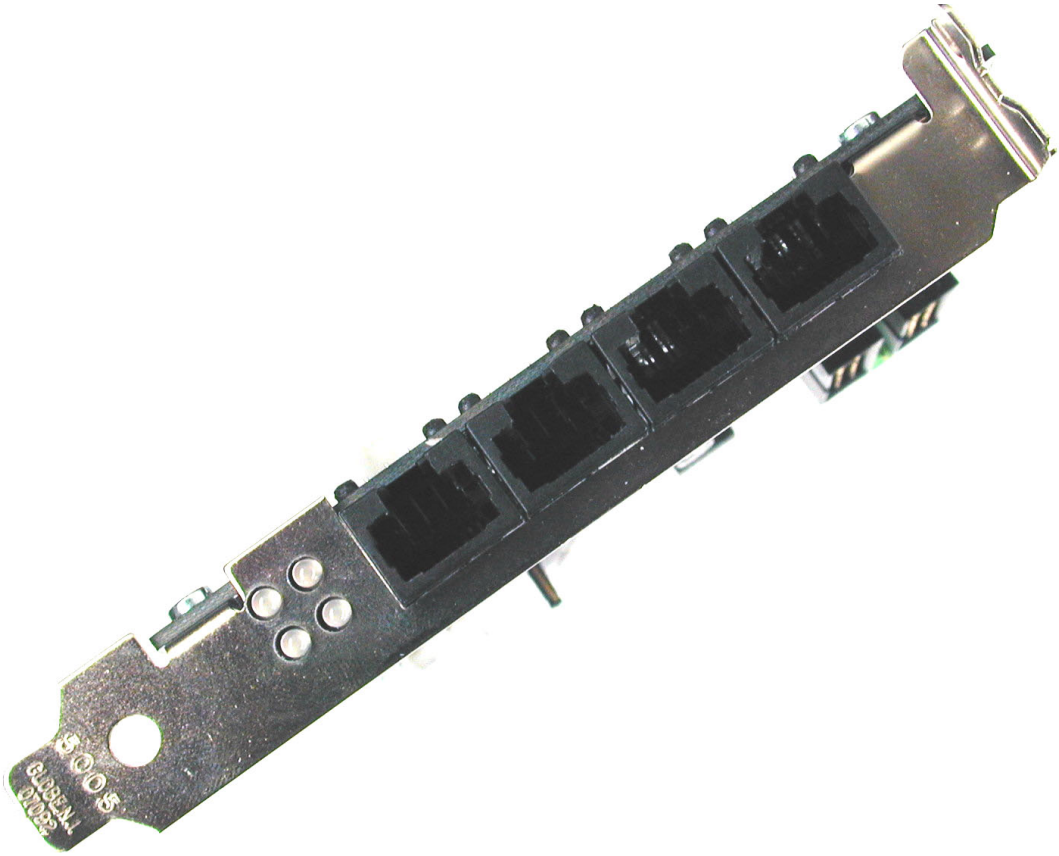


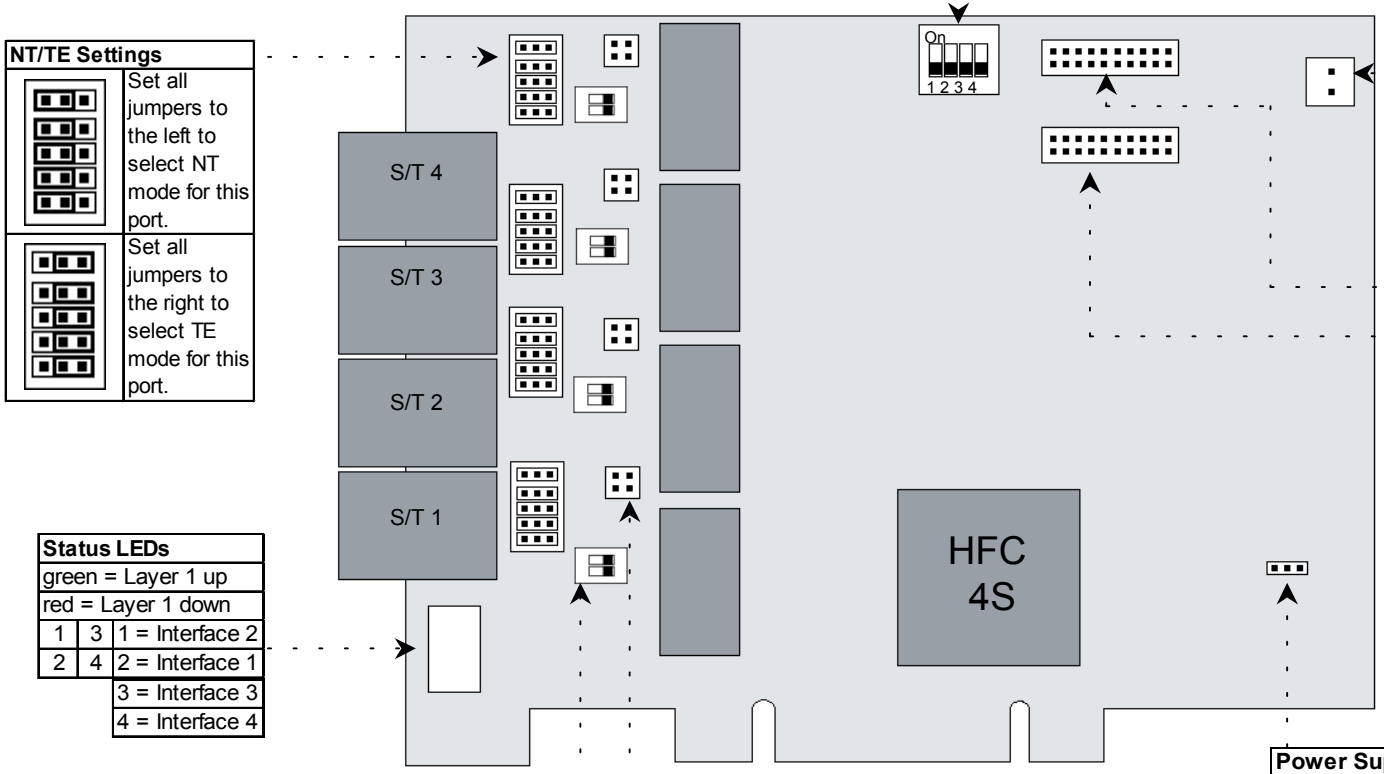
quadBRI PCI ISDN

Configuration Overview

Card ID switches

DIP switches 1 to 3 can be used to set the card ID (very useful for remotely identifying individual cards)

Card-ID	0	1	2	3	4	5	6	7
SW 1	OFF	ON	OFF	ON	OFF	ON	OFF	ON
SW 2	OFF	OFF	ON	ON	OFF	OFF	ON	ON
SW 3	OFF	OFF	OFF	OFF	ON	ON	ON	ON



NT/TE Settings

	Set all jumpers to the left to select NT mode for this port.
	Set all jumpers to the right to select TE mode for this port.

Power Connector

Connector for external pow er feeding module to feed S/T Interfaces of up to 4 quadBRI cards. (Available optionally)

PCM Out

PCM In

Status LEDs

green = Layer 1 up

red = Layer 1 down

1	3	1 = Interface 2
2	4	2 = Interface 1
		3 = Interface 3
		4 = Interface 4

Termination of S/T Interface (100 Ω)

	Both Switches in ON Position : Termination = ON
	Both Switches in OFF Position : Termination = OFF

Power Feeding (only for NT Mode)

	Power feeding enabled for the the corresponding port if jumpers set (PFM required)
	Not powered if no jumpers set.

Power Supply Configuration

	uses 3.3 V from the PCI bus (only available in 3.3 V PCI slots)
	generates 3.3 V out of the 5 V from the PCI bus (factory default)

CE

Warning

This equipment will be inoperable when main power fails

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