

TUV Telecom Services, Inc.

1775 Old Highway 8 NW Suite 107

St. Paul, MN USA 55112

Tel. +1 (651) 639-0775

Fax. +1 (651) 639-0873



TEST REPORT NO.

CTR4/081701/99

Date: August 26, 1999

Total Number of Pages: 106

Equipment: **PM4351 Comet**

Client: **PMC-Sierra**

Address: **105-8555 Baxter Place
Burnaby, B.C. V5A 4V7
Canada**

European Harmonised Standard: **CTR 4**

Authorised Signature:

August 26, 1999

David A. Freemore

Lead Engineer

Date

Name

Title

Signature

The contents of this test report must not be reproduced unless in full without the written permission of TUV Telecom Services, Inc. The copyright in respect of this test report is owned by TUV Telecom Services, Inc. The results of all measurements stated in this test report only relate to the tested product.

Table of contents

1 IDENTIFICATION SUMMARY	4
1.1 Test Laboratory	4
1.2 Limits and Reservations	4
1.3 Client Information	4
1.4 Product	4
1.4.1 IUT Identification	5
1.4.2 System under Test (SUT)	5
1.4.3 Type of Product	5
1.5 Nature of Conformance Testing	6
2 TEST CONDITIONS	6
2.1 Environmental Conditions	6
2.2 Power Supply Limitations	6
3 SYSTEM REPORT SUMMARY	7
3.1 Test Report Summary Layer 1	7
4 OBSERVATIONS	8
5 SUMMARY OF COMPLIANCE	8
5.1 Summary of Overvoltage Protection	8
6 PROTOCOL CONFORMANCE TEST REPORT	9
6.1 Protocol Conformance Test Report Layer 1	9
6.1.1 Dates	9
6.1.2 Operator	9
6.1.3 Test System	9
6.1.4 Test Environment	9
6.1.5 Test Campaign Report	10
6.1.6 PICS/PIXIT Settings	11
6.1.7 Test Results	11
7 PHOTOGRAPHS	13

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



8 TEST DATA

1 IDENTIFICATION SUMMARY

1.1 Test Laboratory

TUV Telecom Services, Inc.
1775 Old Highway 8 NW, Suite 107
St. Paul, MN USA 55112
Tel. +1 (651) 639-0775
Fax. +1 (651) 639-0873

UKAS accredited testing laboratory, no. 1845

1.2 Limits and Reservations

This test report satisfies European Standard EN 45001 (1989), ISO Guide 25, NIST Handbook 150 and NAMAS accreditation standard M10. The test results in this test report apply only to the particular System under Test (SUT) and component Implementations under Test (IUTs) declared in this test report.

1.3 Client Information

Name : **PMC-Sierra**
Street : **105-8555 Baxter Place**
City : **Burnaby, B.C. V5A 4V7**
Country : **Canada**
Phone : **+1 (604) 415-6000**
Fax : **+1 (604) 415-6206**

Contact Person : **Fayaz Khaki**
Phone : **+1 (604) 415-6000**
Fax : **+1 (604) 415-6206**

1.4 Product

Supplier's name : **PMC-Sierra**
Street : **105-8555 Baxter Place**
City : **Burnaby, B.C. V5A 4V7**
Country : **Canada**
Phone : **+1 (604) 415-6000**
Fax : **+1 (604) 415-6206**

1.4.1 IUT Identification

Name	PM4351 Comet
Version/Model	Comet Reference Design Board Rev. 2
Serial No.	83110-2-0001
Interface board	--
Chip set	PM4351 Comet Rev. F
Transformer	Midcom 50436
Connector types	Bantam
Interfaces	2 at E1
Software and Version	--

1.4.2 System under Test (SUT)

(If applicable)

SUT Configuration for testing (PC, Bus System, Clock etc.)	Motherboard used for microprocessor interface
Operating System	--
Version No.	--
Miscellaneous	--

1.4.3 Type of Product

Monolithic device which integrates software selectable full featured T1 and E1 framers and T1 and E1 shorthand and longhand line interfaces

1.5 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 guarantee that an IUT which has passed all the relevant tests conforms to a specification. Neither is there any guarantee that such an IUT will interwork with other real open systems. Rather, the passing of the tests gives confidence that the IUT has the stated capabilities and that its behaviour conforms consistently in representative instances of communication.

2 Test Conditions

2.1 Environmental Conditions

Temperature : In the range of 19°C to 25°C Yes No
Relative humidity : In the range of 5% to 75% Yes No

2.2 Power Supply Limitations

All tests were carried out within +/- 5% of the normal operating voltage of 5.0 VDC

3 System Report Summary

3.1 Test Report Summary Layer 1

Protocol Standard: *TBR 4 (11.95)*
TBR 4 A1 (12.97)
ITAAB Notes AN 067, 068, 070

Protocol Conformance Test Report: *See Section 6.1*

Abstract Test Suite (ATS) Standard: *TBR 4 (11.95)*
TBR 4 A1 (12.97)

Abstract Test Method: *Remote Single Layer Embedded (RSE)*

Real Test system:

Executable Test Suite (ETS) Identification:

Name : CTR 4 Layer 1 Conformance Tests
Version : A.09.10

Test system Identification:

ISDN-S_{2M}-Test System IPATS:

Manufacturer : Hewlett Packard / Admit Design Systems

Conformance Status:

Static Conformance Errors : **No**
Dynamic Conformance Errors : **No**

Test cases run: 18

Passed : 18
Failed : 0

4 Observations

Date: **August 17, 1999**

No observations have been made during the conformance assessment test.

5 Summary of Compliance

Date: **August 17, 1999**

The test results in this test report apply only to the particular System under Test (SUT) and component Implementations under Test (IUTs) declared in this test report.

The SUT/IUT has not been shown by the conformance assessment to be non-conforming to the specified protocol standard. The test campaign did not reveal errors in the SUT/IUT.

5.1 Summary of Overvoltage Protection

Date: **August 17, 1999**

The IUT complies with paragraph 8, subclause 8.1, 8.2 and 8.3.

For full test results see test report **046/081701/99**

6 Protocol Conformance Test Report

6.1 Protocol Conformance Test Report Layer 1

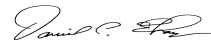
6.1.1 Dates

Receipt of SUT/IUT: **August 16, 1999**

Date of Test: **August 17, 1999**

6.1.2 Operator

Dan Thayer



(Signature)

6.1.3 Test System

Name : CTR 4 Layer 1 Conformance Tests

Version : A.09.10

Test system Identification:

ISDN-S_{2M}-Test System IPATS:

Manufacturer : Hewlett Packard / Admit Design Systems

6.1.4 Test Environment

Temperature : In the range of 19°C to 25°C Yes No

Relative humidity : In the range of 5% to 75% Yes No

All tests are carried out within +/- 5% of the normal operating voltage of 5.0 VDC.

6.1.5 Test Campaign Report

The tables in this section 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 columns are profited below, and referenced as *n*).

Test case	Description	PICS	Verdict	Comment
a)	b)	c)	d)	e)

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

b) Brief description of the test case.

c) PICS dependencies.

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

Possible verdicts:

Complies (C): The test purpose according to the ATS is achieved, test did run as defined in ETS to completion.

Does not comply (NC): The test purpose according to the ATS is not achieved, test did not run as defined in ETS to completion.

Not tested (NT): Test case was not tested.

Not applicable (NA): Test case was not applicable for the SUT configuration considering the possible options.

e) Indicates a reference to any observations made in section 4 of this test report.

6.1.6 PICS/PIXIT Settings

PICS Layer 1 Parameter Settings

PICS 0: Does the IUT have only 1 network interface? yes
 PICS 1: Does the IUT act as master? no
 PICS 2: Is only one input used at a time to extract synchronization? yes

PIXIT Layer 1 Parameter Settings

PIXIT 0: Does the IUT support PTNX interconnection? no
 PIXIT 1: Is the IUT network interface at the S reference point? yes
 PIXIT 2: Does the IUT transmit a 2^{11-1} PBRS in a time slot? no
 PIXIT 3: How many accesses has the IUT? 1
 PIXIT 4: Which of the accesses is used for synchronization? 1
 PIXIT 5: What is the clock synchronization time in seconds? 10
 PIXIT 6: Is the internal clock accuracy better than 1 ppm? no

6.1.7 Test Results

TBR 4	Description	PICS	Verdict	Comment
B.2.1.1	Puls Shape / Amplitude		C	
B.2.1.2	Peak Voltage of Space		C	
B.2.1.3	Puls Amplitude Ratio		C	
B.2.1.4	Puls Width Ratio		C	
B.2.2	Imp. to Ground Trans.		C	
B.2.3	Bit Rate Unsynchronized		C	
B.2.4	Output Jitter		C	
B.2.5	HDB3 Coding		C	
B.3.1	Return Loss Input Port		C	
B.3.2	Immunity against Reflect.		C	
B.3.3	Tolerance to Jitter/Wander		C	
B.3.4	Longitudinal Voltage		C	
B.3.5	Receiver		C	
B.4.1	Frame Alignment Word		C	
B.4.2	CRC Processing		C	

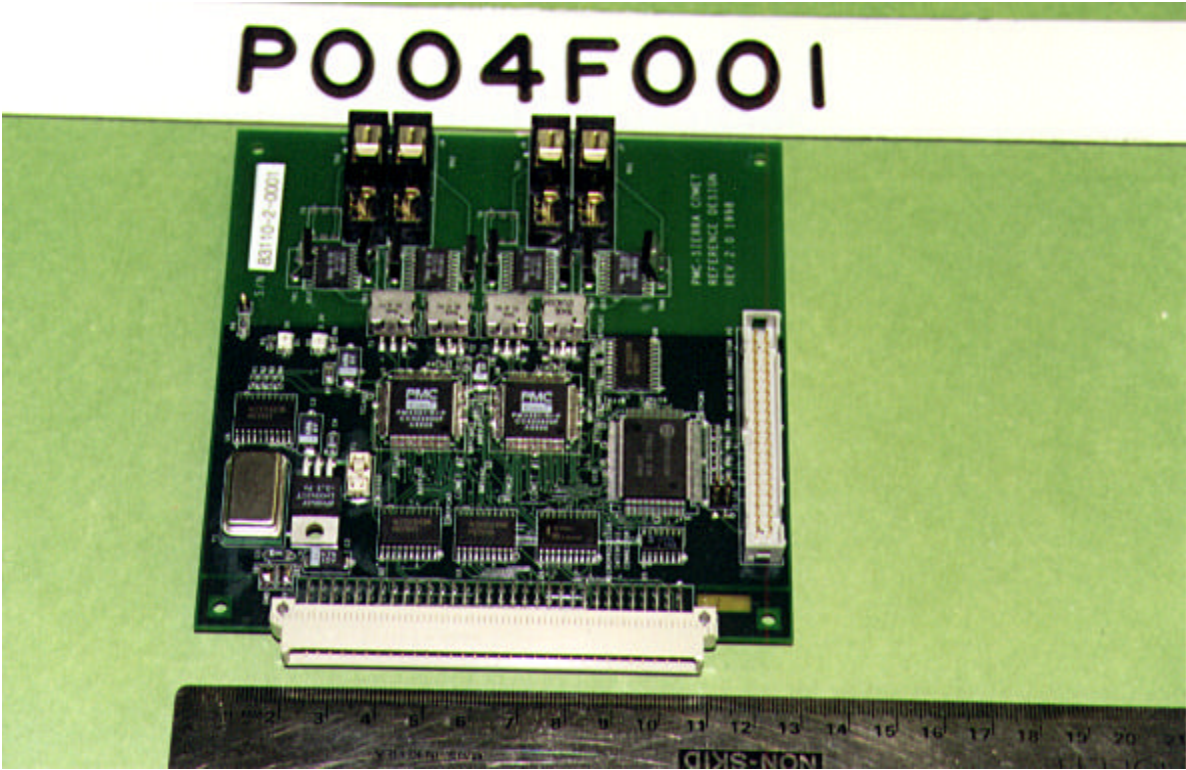
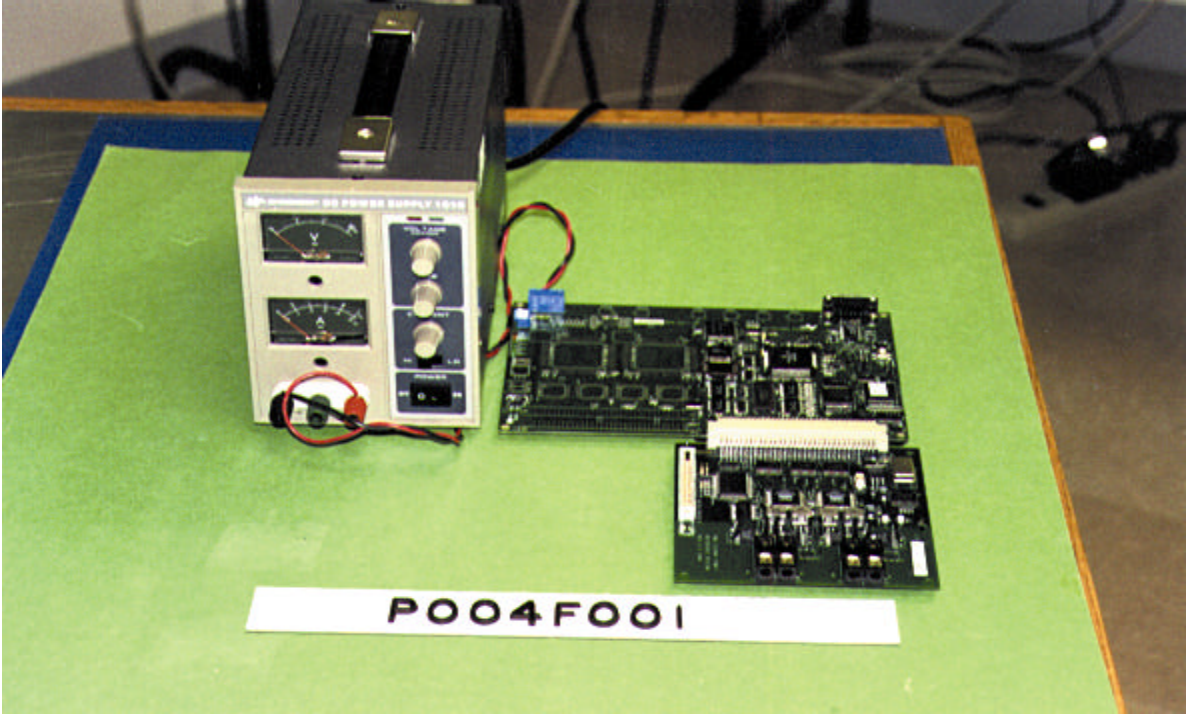
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



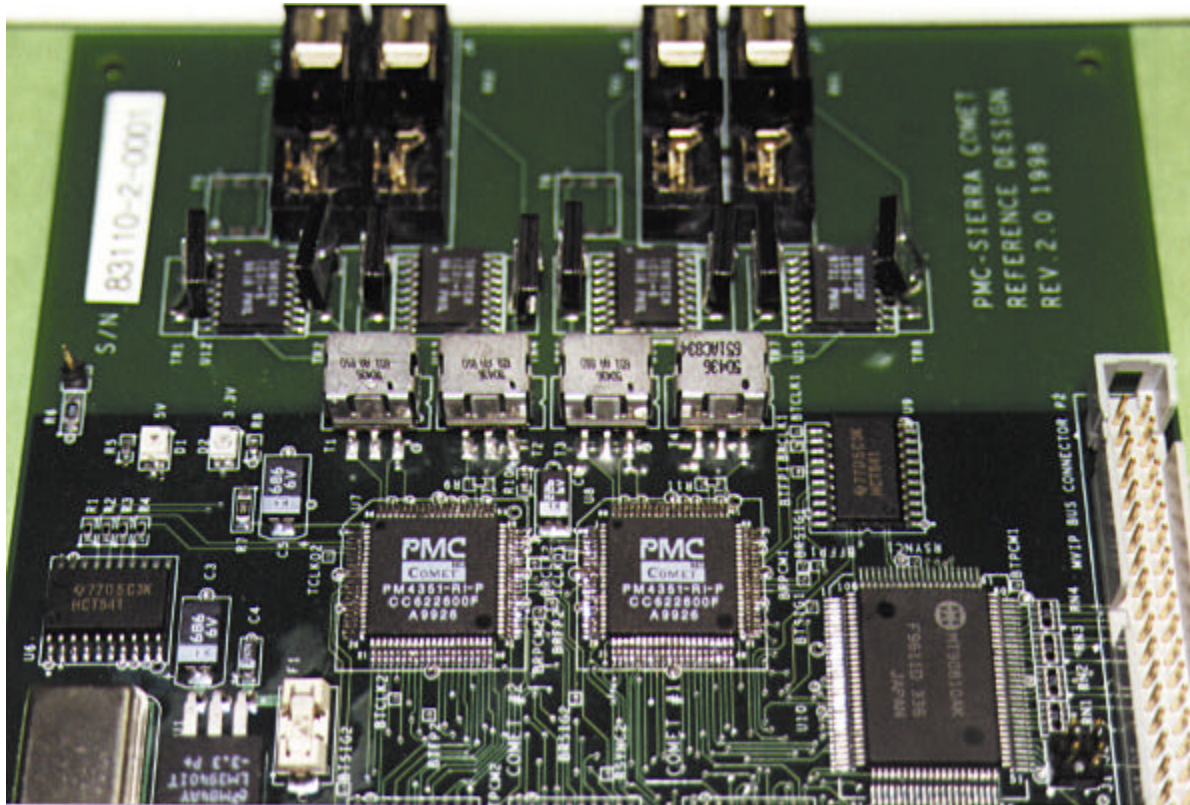
TBR 4	Description	PICS	Verdict	Comment
B.5.1	State Matrix		C	
B.5.2	Frame Alignment		C	
B.5.3	CRC Multiframe Alignm.		C	

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

7 Photographs



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



8 Test Data

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



I.U.T. : PM4351 COMET PMC-Sierra Inc

Test Sequence created on : 17/Aug/1999 09:01:56

Data was stored into : ./TE/CTR4/dir16

SYSTEM CONFORMANCE STATEMENT (SCS) AND CLIENT CHECKLIST

EQUIPMENT

EQUIPMENT IDENTIFICATION

Type : PM4351 COMET
Name : . Model : .
Version : F Serial No. : 83110-2-0001

SUPPLIER

Company Name : . Telephone : .
Street No. : . Telefax : .
City : . Telex : .
Country : . Teletex : .

MANUFACTURER

Company Name : PMC-Sierra Inc. Telephone : (604) 415-6000
Street No. : 105 -8555 Baxter Place Telefax : (604) 415-6206
City : Burnaby, BC V5A 4V7 Telex : .
Country : Canada Teletex : .

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



I.U.T. : PM4351 COMET PMC-Sierra Inc

Test Sequence created on : 17/Aug/1999 09:01:56

Data was stored into : ../TE/CTR4/dir16

PHYSICAL LAYER PICS

OPTIONAL CAPABILITIES

TE/NT2 has only one user-network interface : YES

TE/NT2 has more than one user-network interface : NO

PTNX INTERCONNECTIONS

Does the IUT act as a master : NO

Does the IUT act as a slave : YES

MULTI ACCESSES IUT TIMING METHOD

Only one input used at a point in time to extract synchronization : YES

More than one input used at a point in time to extract synchronization : NO

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



I.U.T. : PM4351 COMET PMC-Sierra Inc

Test Sequence created on : 17/Aug/1999 09:01:56

Data was stored into : ./TB/CTR4/dir16

PHYSICAL LAYER PIXIT

Does the TB support PTNX interconnection : N

Is the TB user/network interface at the S ref. point : YES

Does the TB transmit a PRES 2¹¹-1 in a time slot : NO

How many accesses has the TB : 1

Which of the accesses has the synchronization : 1

Clock synchronization time sec [FULL RANGE] : 10

Internal clock frequency accuracy better than 1ppm ? : NO

Client's additional informations : Order No.:P004P001 CTR4

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Data retrieved from : ../TB/CTR4/dir16/B211

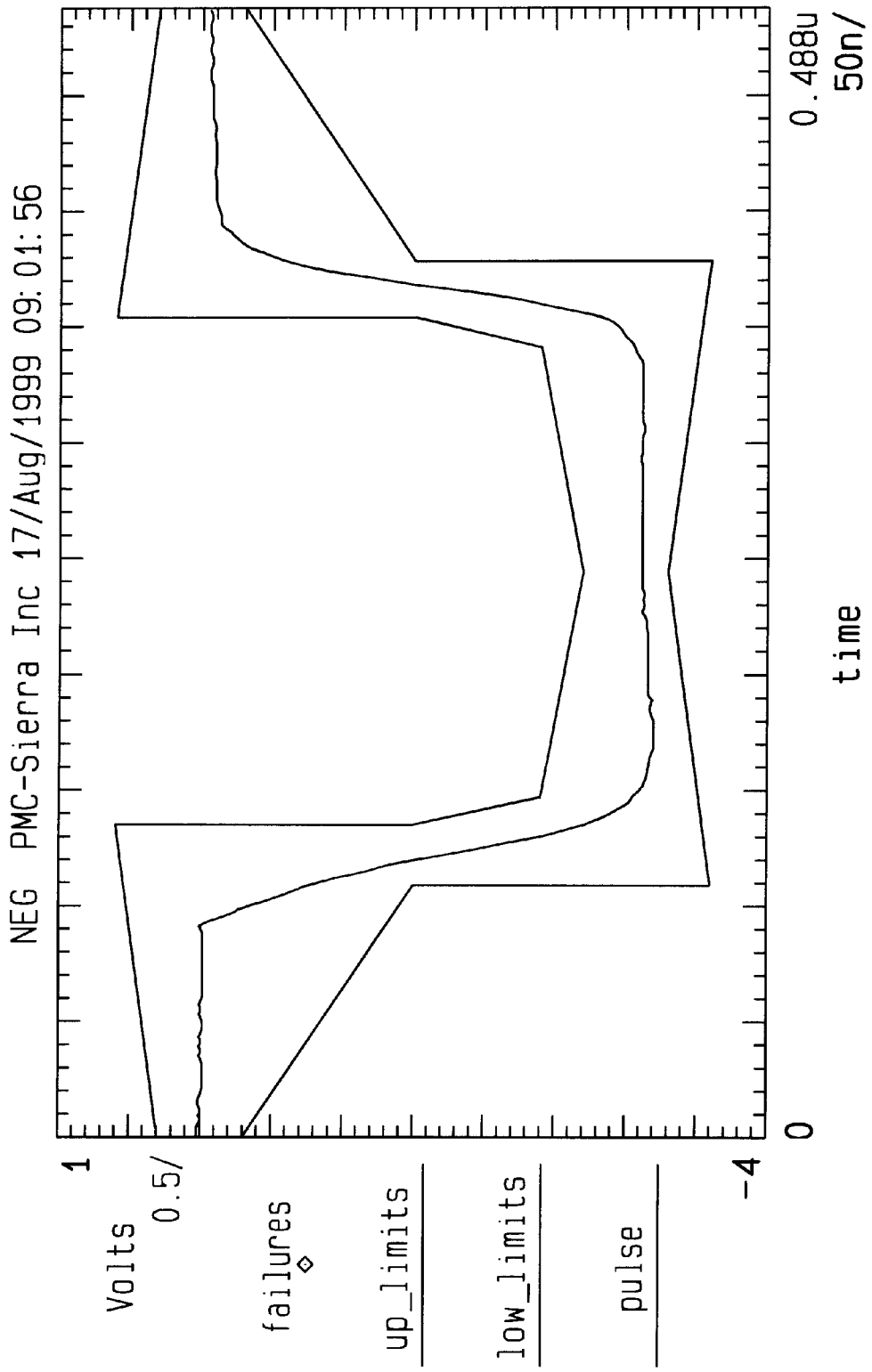
I.U.T. PM4351 COMET PMC-Sierra Inc
Test : B.2.1.1 Pulse shape and amplitude of a mark (pulse)
Test Sequence created on : 17/Aug/1999 09:01:56
TEST RESULT : PASSED

Details of test results

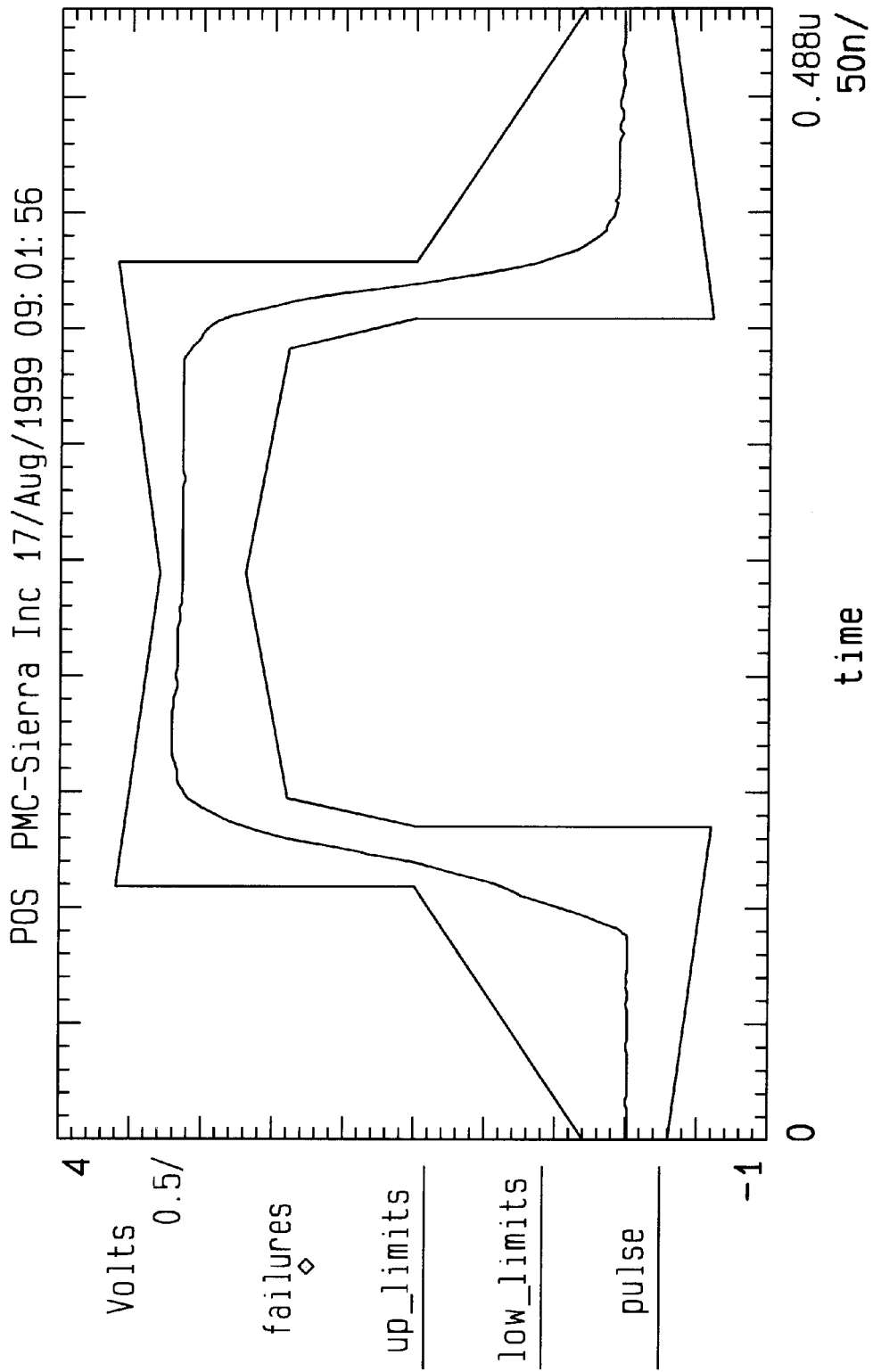
I.U.T. PULSES			
state	sample	positive	negative
F 1	one	passed	passed
F 2	one	passed	passed
F 3	one	passed	passed
F 4	one	passed	passed
F 5	one	passed	passed

®

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873





TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TR/CTR4/dir16/B212

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : B.2.1.2 Peak voltage of a space (no pulse)
Test Sequence created on : 17/Aug/1999 09:01:56
TEST RESULT : PASSED

Trace of test execution case space after pulses

PARTIAL TEST RESULT : PASSED

Trace of test execution

```

|=====|
| I.U.T. | partial test results | | |
|---|---|---|---|
| state | sample | pos pulse | neg pulse |
|=====|
| F 1 | one | passed | passed |
|-----|
| F 2 | one | passed | passed |
|-----|
| F 3 | one | passed | passed |
|-----|
| F 4 | one | passed | passed |
|-----|
| F 5 | one | passed | passed |
|-----|

```

Trace of test execution case space before pulses

PARTIAL TEST RESULT : PASSED

Trace of test execution

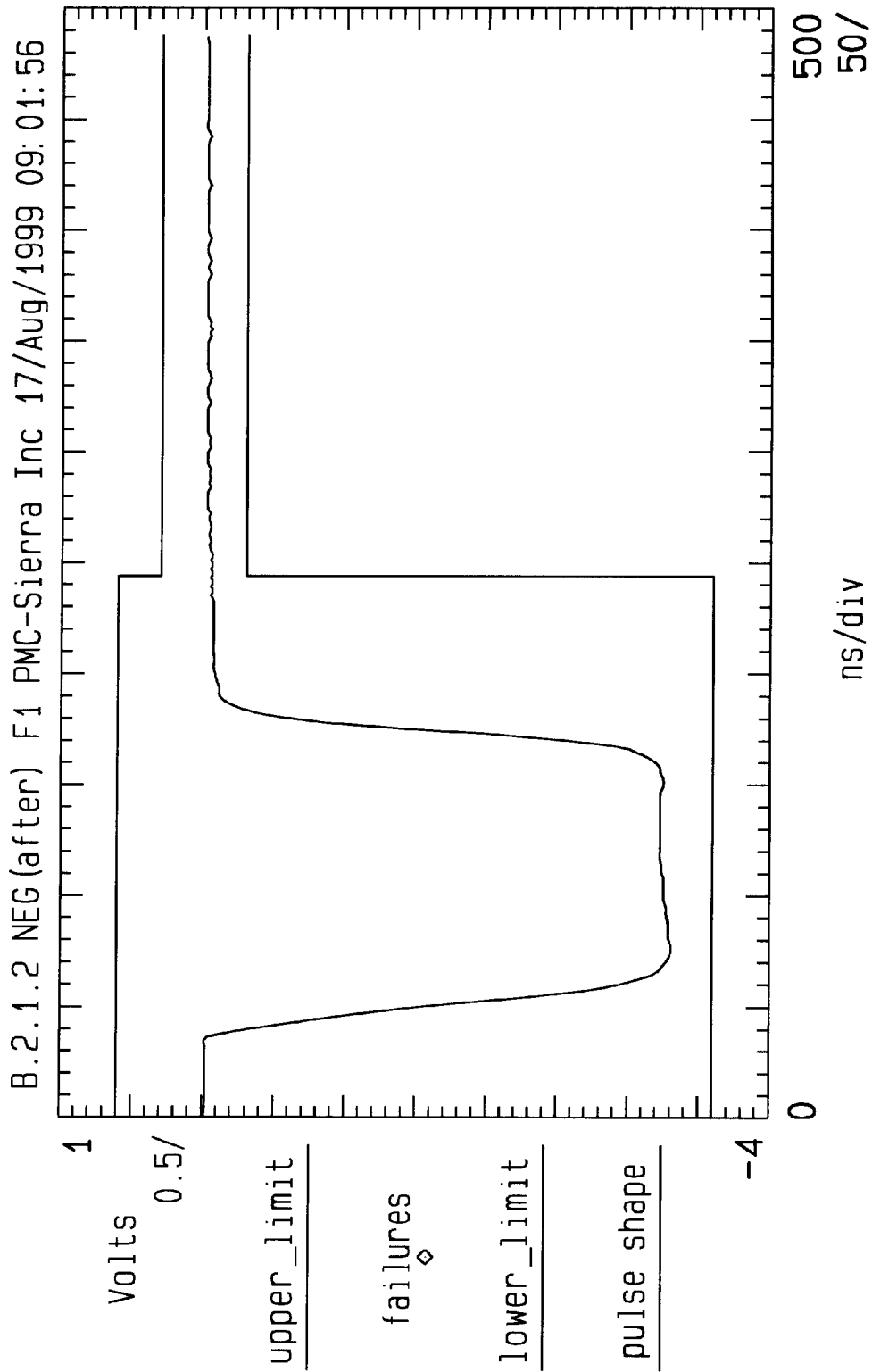
```

|=====|
| I.U.T. | partial test results | | |
|---|---|---|---|
| state | sample | pos pulse | neg pulse |
|=====|
| F 1 | one | passed | passed |
|-----|
| F 2 | one | passed | passed |
|-----|
| F 3 | one | passed | passed |
|-----|
| F 4 | one | passed | passed |
|-----|
| F 5 | one | passed | passed |
|-----|

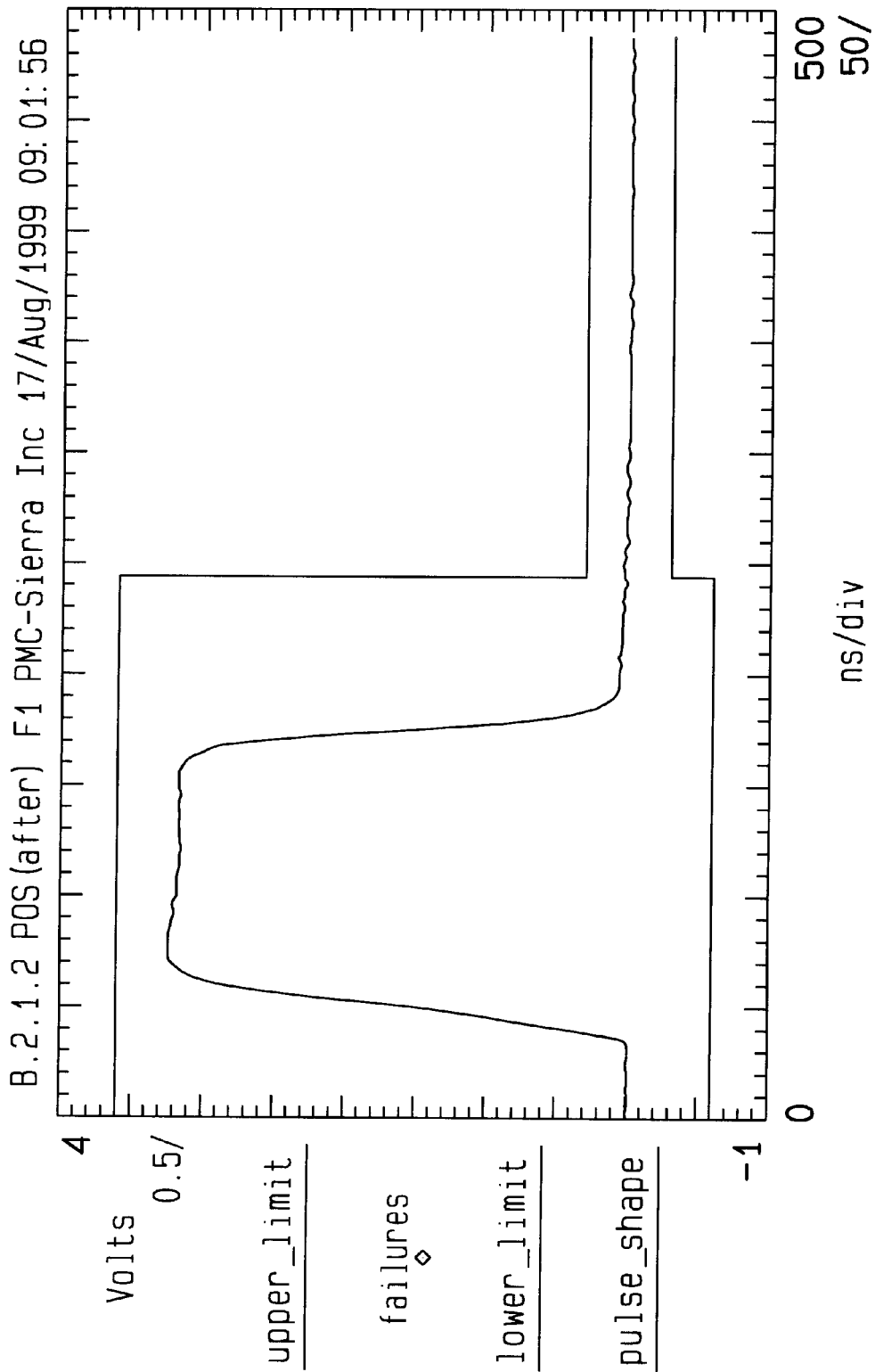
```

@

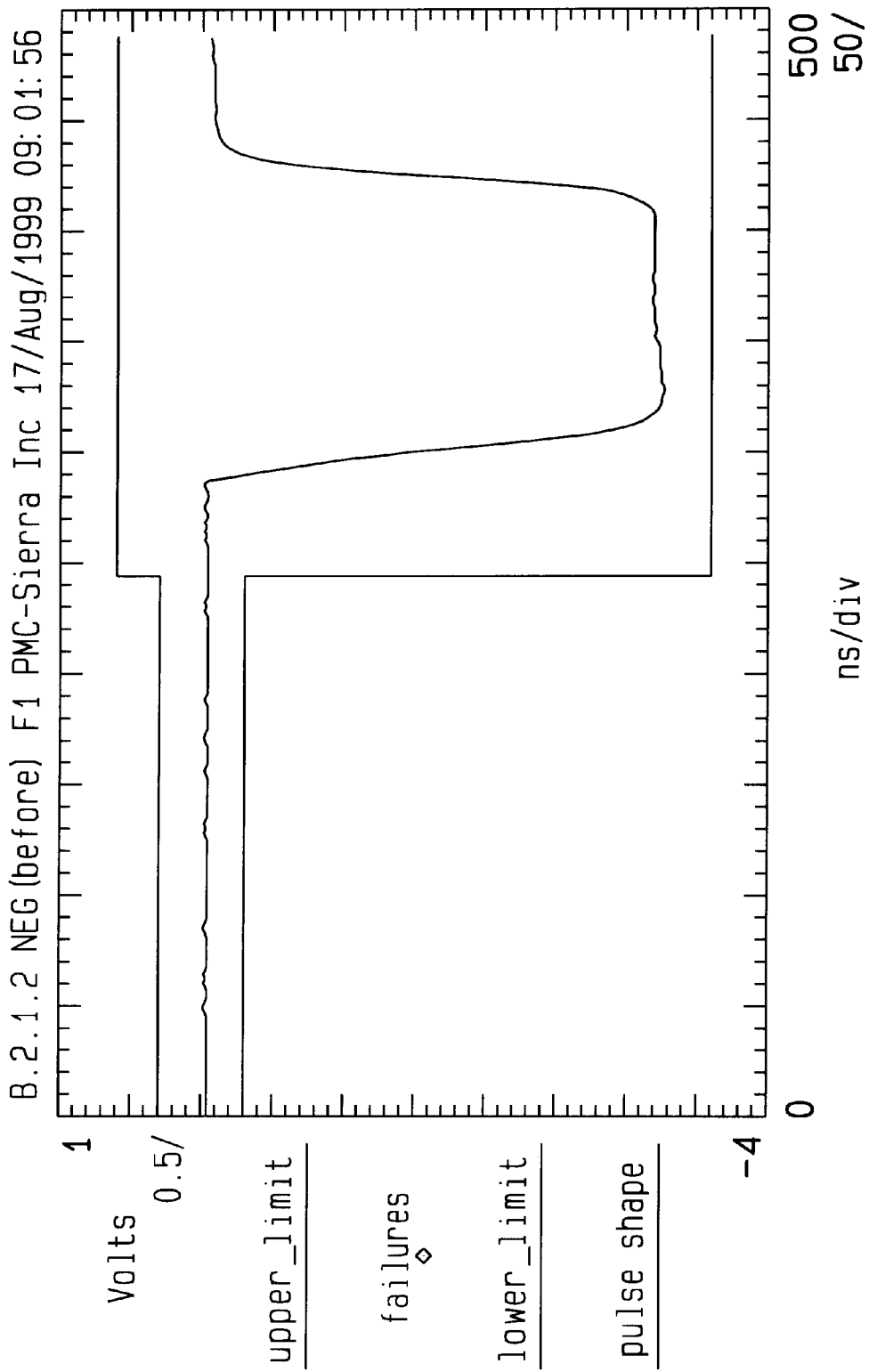
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



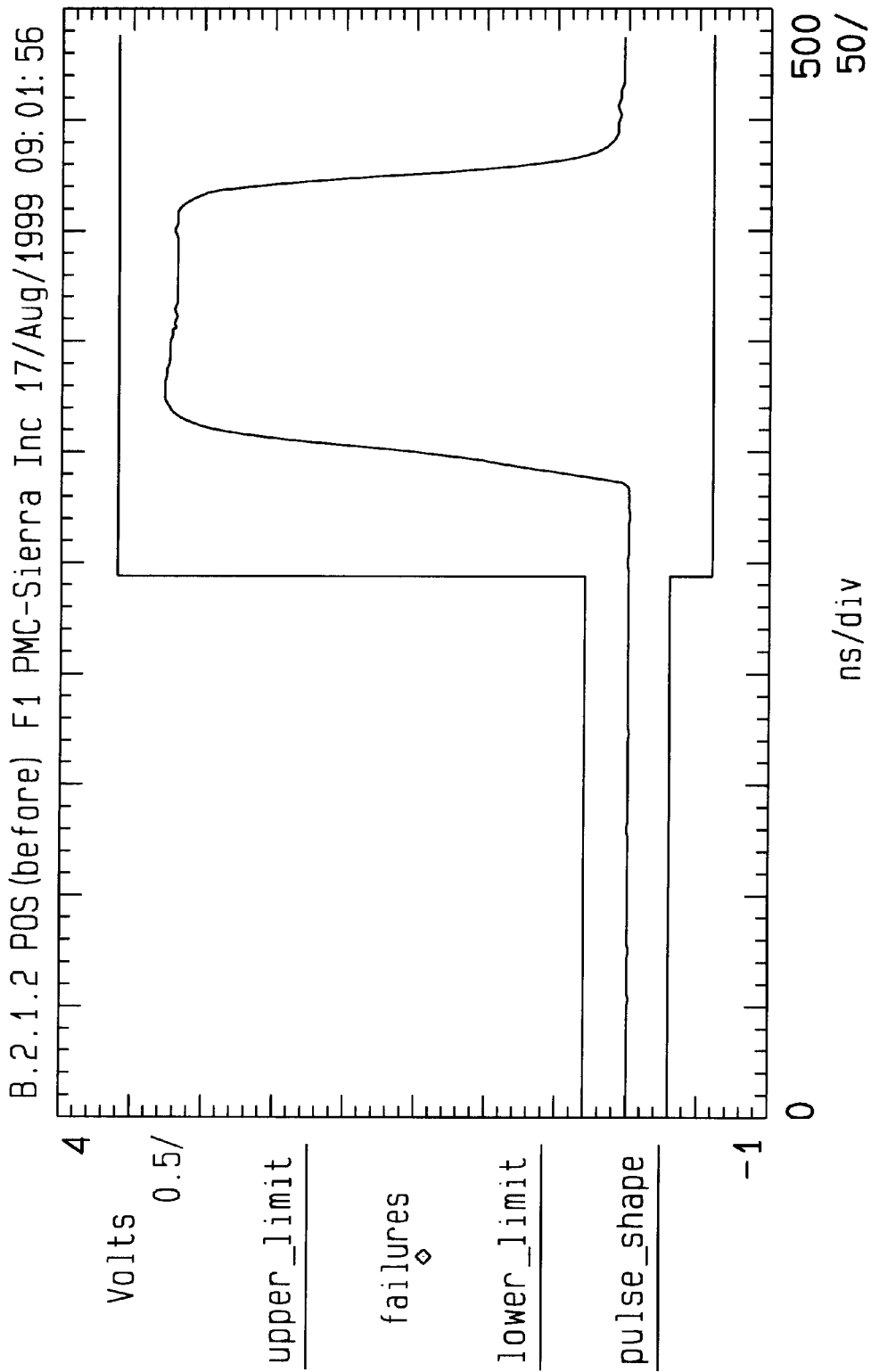
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873





TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TB/CTR4/dir16/B213

I.U.T. PM4351 COMET PMC-Sierra Inc

Test : B.2.1.3 Ratio of the amplitude of pos & neg pulses at the centre

Test Sequence created on : 17/Aug/1999 09:01:56

TEST RESULT : PASSED

Trace of test execution

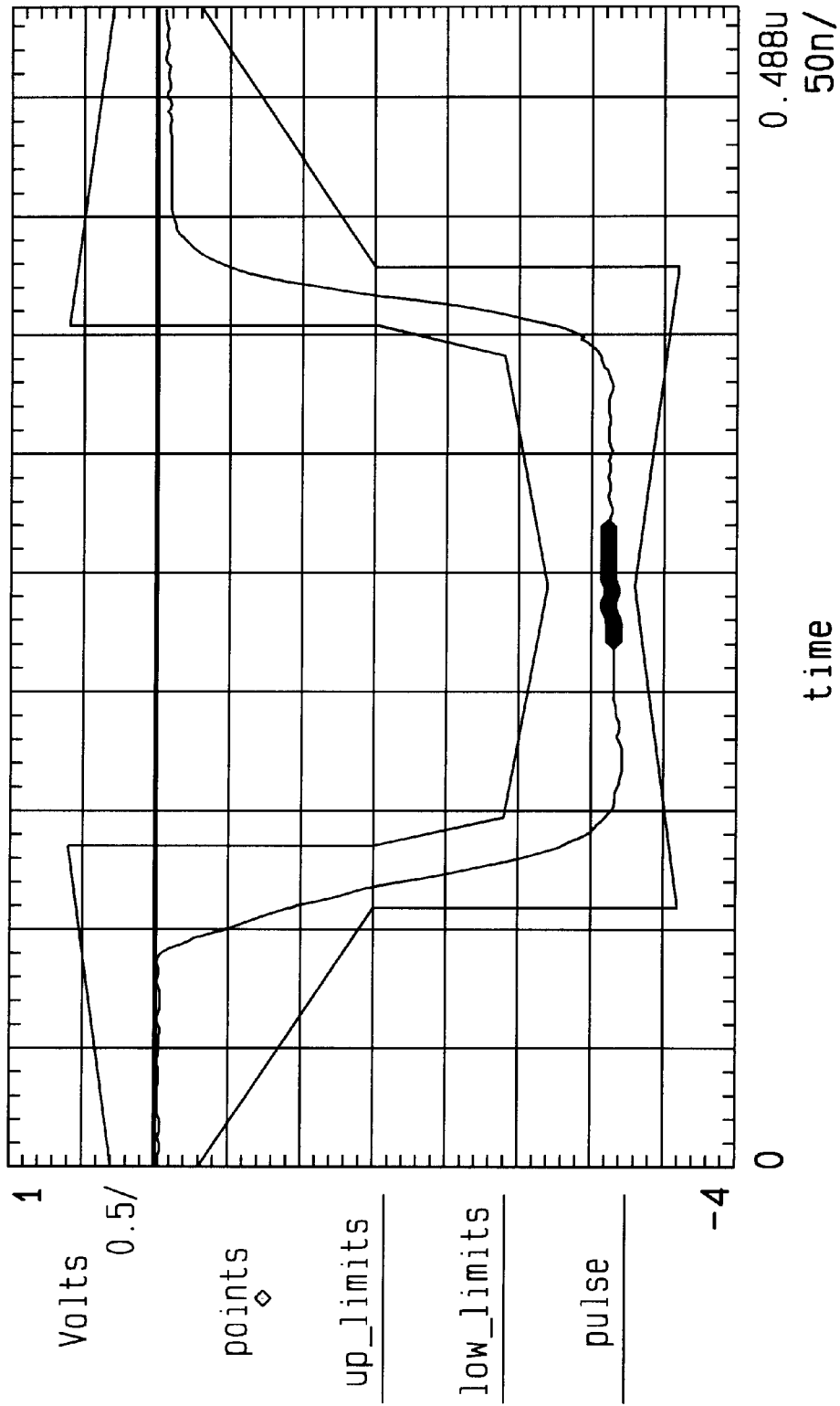
I.U.T	Sample	Ampl.	Pass
state		Ratio	Fail
F 1	one	1.007	pass
F 2	one	1.005	pass
F 3	one	1.007	pass
F 4	one	1.006	pass
F 5	one	1.002	pass

@

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



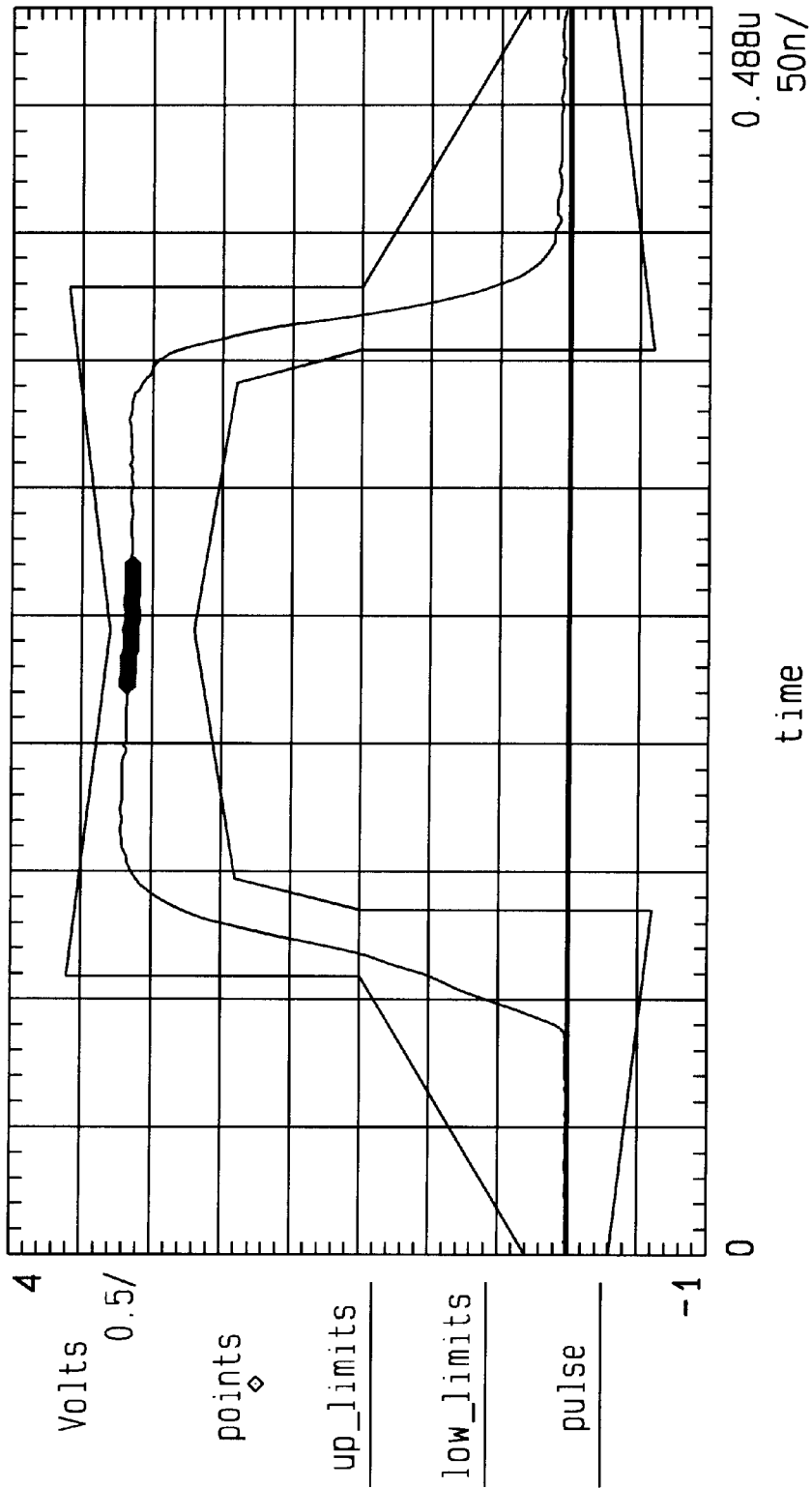
B.2.1.1.3 NEG F1 PMC-Sierra Inc 17/Aug/1999 09:01:56



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



B.2.1.3 POS F1 PMC-Sierra Inc 17/Aug/1999 09:01:56



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Data retrieved from : ./TB/CTR4/dir16/B214

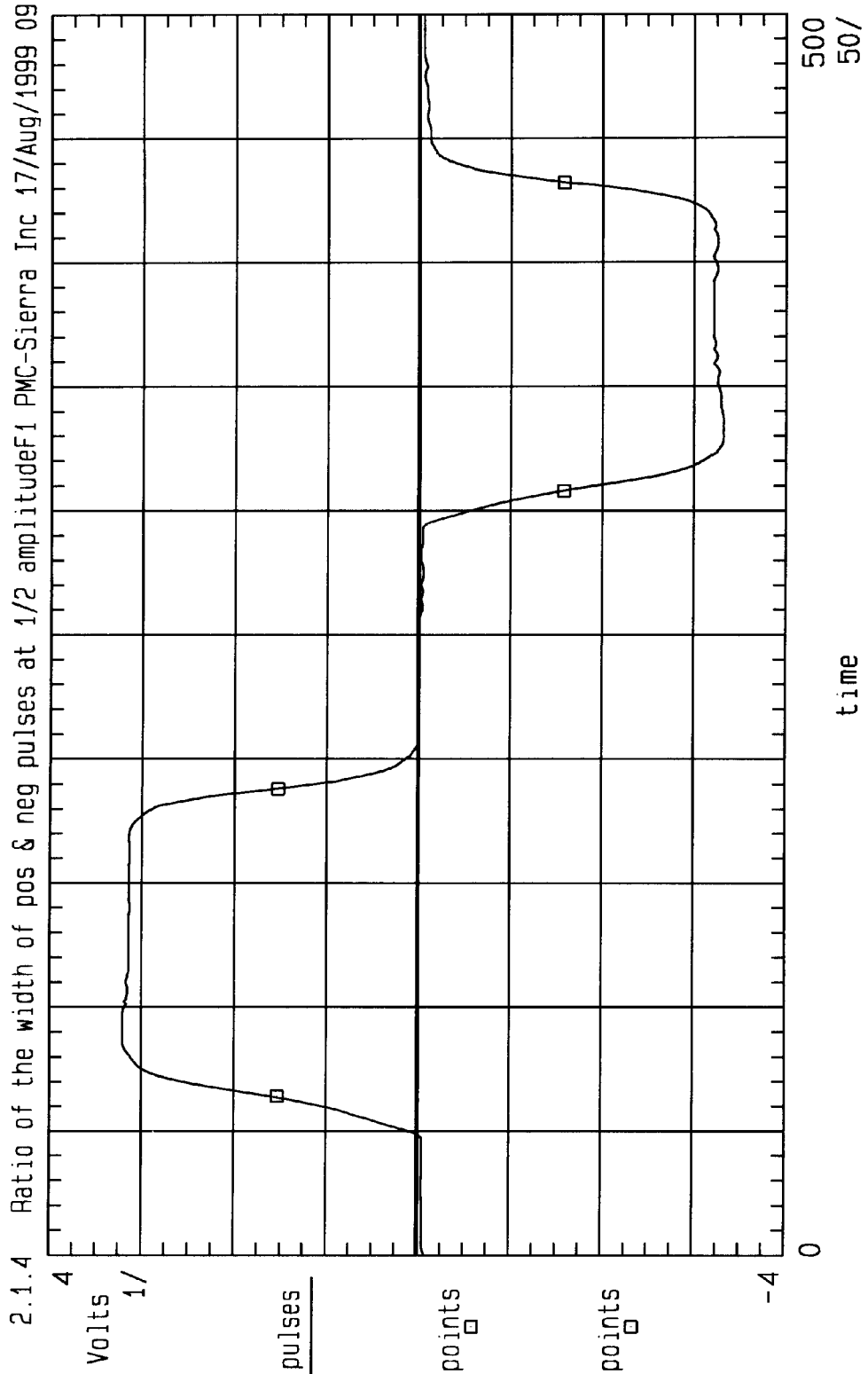
I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.2.1.4 Ratio of the width of pos & neg pulses at 1/2 amplitude
 Test Sequence created on : 17/Aug/1999 09:01:56
 TEST RESULT : PASSED

Trace of test execution

I.U.T	Sample	Width	Width	Widths	Pass
state		pos ns	neg ns	RATIO	Fail
F 1	one	250	250	1.000	pass
F 2	one	250	250	1.000	pass
F 3	one	250	250	1.000	pass
F 4	one	250	252	0.992	pass
F 5	one	250	250	1.000	pass

@

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Data retrieved from : ../TE/CTR4/dir16/B22

I.U.T. PN4351 COMBT PMC-Sierra Inc

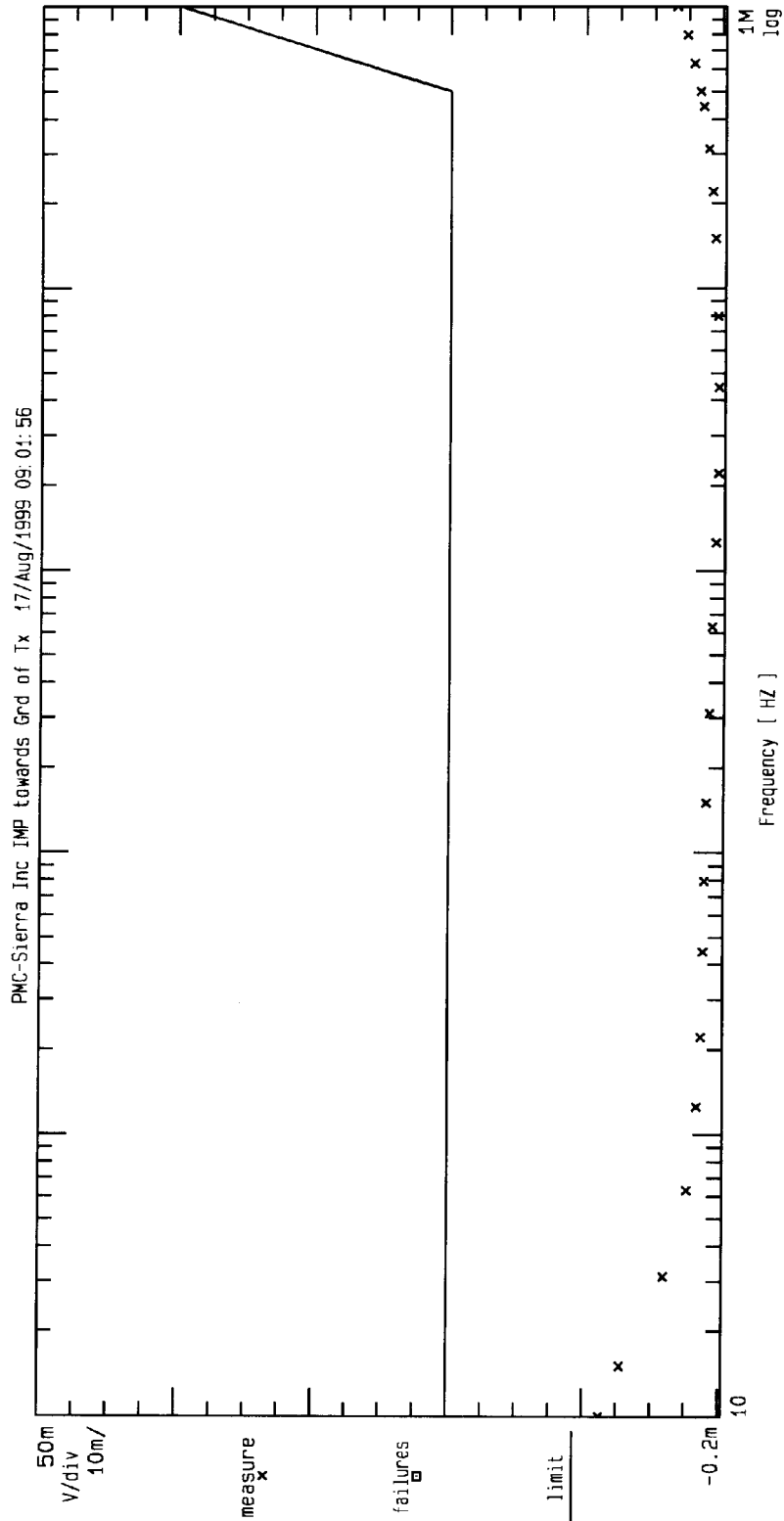
Test : B.2.2 Impedance towards ground of the transmitter output

Test Sequence created on : 17/Aug/1999 09:01:56

TEST RESULT : PASSED

@

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Data retrieved from : ./TR/CTR4/dir16/B23

I.U.T. PM4351 COMBT PMC-Sierra Inc
Test : B.2.3 Bit rate when unsynchronized
Test Sequence created on : 17/Aug/1999 09:01:56
TEST RESULT : PASSED

Measured bit rate [Hz]	deviation [ppm]	Limits [ppm]
2048067.330	+32.88	+/- 50

@



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TB/CTR4/dir16/B24_6dB_Cable

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : B.2.4 Output jitter (with and without 6dB cable)
Test Configuration: IUT's output timing is referenced to RBC CLK from data stream
TEST EXECUTION CONDITIONS: 6dB cable inserted
Test Sequence created on : 17/Aug/1999 09:01:56
TEST RESULT : PASSED

Table with 18 columns: [Hz], [UI], and three pairs of (NOF, SYN), (Jitt, V), (Jitt, V). Rows include NT JITTER and various frequency points from 1 Hz to 100000 Hz.

IUT's SIGNAL : SIGNAL Received from I.U.T. Jitt : Measured Jitter R : Measure range 10 l
NOF : NORMAL OPERATION FRAMES V : Partial Verdict r : Measure range 1 U:
* SYNC : I.U.T. synchronized to the Network X : Result Overage
@



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TE/CTR4/dir16/B24_no_6dB_Cable

I.U.T. PM4351 COMET PMC-Sierra Inc
Test : B.2.4 Output jitter (with and without 6dB cable)
Test Configuration: IUT's output timing is referenced to REC CLK from data stream
TBST EXECUTION CONDITIONS: 6dB cable not inserted
Test Sequence created on : 17/Aug/1999 09:01:56
TBST RESULT : PASSED

Table with columns for NT clock freq (2.048 MHz), NT JITTER, IUT's, Measur. filters, IUT's, Measur. filters, IUT's, Measur. Filters, and various jitter metrics (Hz, UI, NOF, SYN, Jitt, V).

IUT's SIGNAL : SIGNAL Received from I.U.T. Jitt : Measured Jitter R : Measure range 10 U
NOP : NORMAL OPERATION FRAMES V : Partial Verdict r : Measure range 1 UI
* SYNC : I.U.T. synchronized to the Network X : Result Overrange



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TB/CTR4/dir16/B25

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : HDB3 B.2.5 HDB3 Coding
 Test Sequence created on : 17/Aug/1999 09:01:56
 TEST RESULT : PASSED

Network Em.	I.U.T. rec.	ALARMS					ERRORS count				I.U.T
Freq. CLOCK	Freq. CLOCK	SGL	AIS	RAI	FML	CRC	CODE	FRAME	CRC	Ebit	sync
[Hz]	[Hz]										
2048000.000	2047999.999	no	no	no	no	no	0	0	0	0	YES

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : AMI B.2.5 HDB3 Coding
 Test Sequence created on : 17/Aug/1999 09:01:56
 TEST RESULT : PASSED

Network Em.	I.U.T. rec.	ALARMS					ERRORS count				I.U.T
Freq. CLOCK	Freq. CLOCK	SGL	AIS	RAI	FML	CRC	CODE	FRAME	CRC	Ebit	sync
[Hz]	[Hz]										
2048000.000	2047999.995	no	no	no	YES	no	798266	420	555	1	YES

@

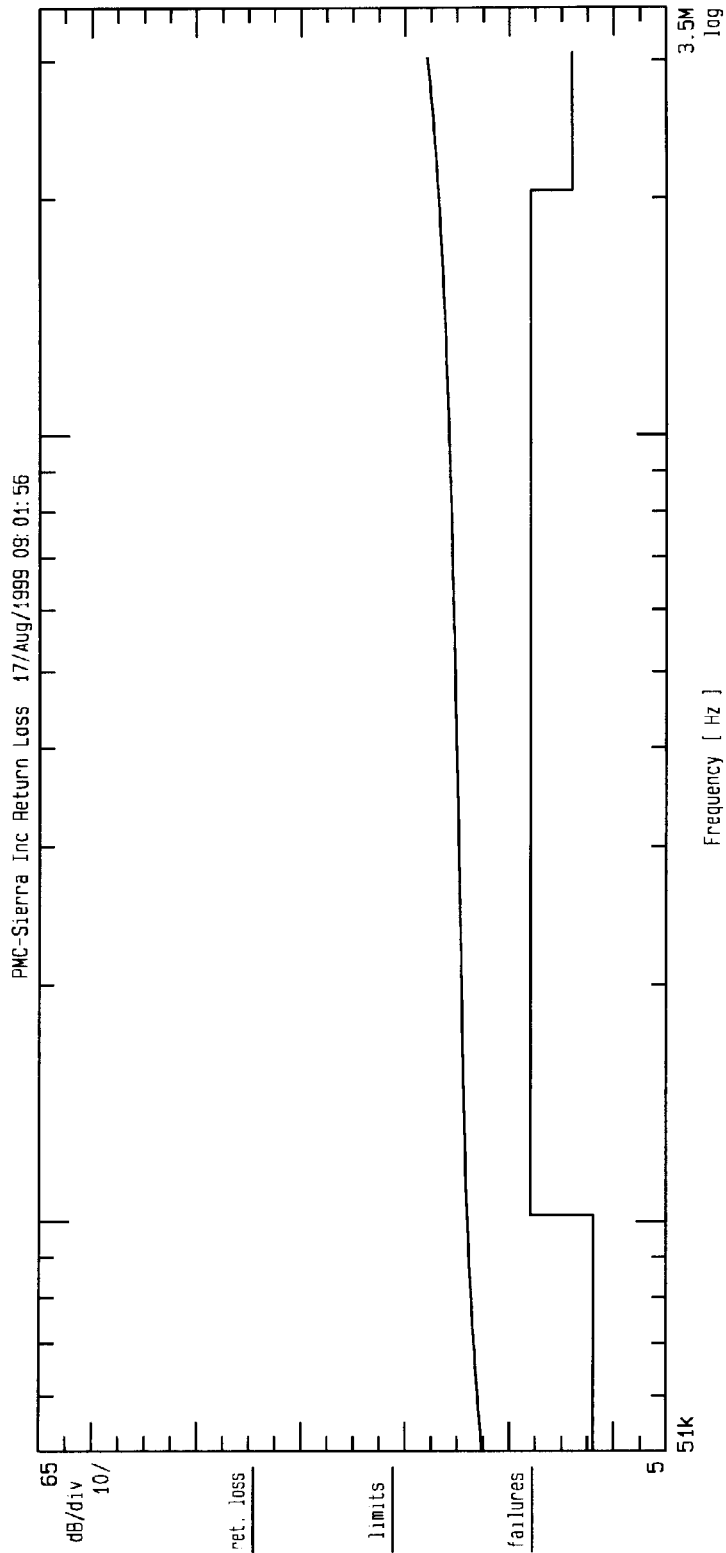
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Data retrieved from : ./TE/CTR4/dir16/B31

I.U.T. PM4351 COMET PNC-Sierra Inc
Test : B.3.1 Return loss
Test Sequence created on : 17/Aug/1999 09:01:56
TEST RESULT : PASSED
®

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873





TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ../TB/CTR4/dir16/B32

I.U.T. PW4351 COMET PMC-Sierra Inc
 Test Sequence created on : 17/Aug/1999 09:01:56
 Test B.3.2 Immunity to attenuation and reflections
 TEST RESULT : PASSED

TEST RESULTS SUMMARY

STEP	Partial Result	Error count	E_bit Error free seconds	NT clock freq. [Hz]	IUT SYNC
1.a	passed	0	60	2048000	yes
2.a	passed	0	60	2048000	yes
3.a	passed	0	60	2048000	yes
4.a	passed	0	60	2048000	yes
1.b	passed	0	60	2048065.536	yes
2.b	passed	0	60	2048065.536	yes
3.b	passed	0	60	2048065.536	yes
4.b	passed	0	60	2048065.536	yes
1.c	passed	0	60	2047934.464	yes
2.c	passed	0	60	2047934.464	yes
3.c	passed	0	60	2047934.464	yes
4.c	passed	0	60	2047934.464	yes

step 1.a

PARTIAL TEST RESULT : passed
 TEST CONDITIONS step 1.a
 Network Emulator frequency CLOCK : 2048000 MHz
 With cable a/b -10% output level NT
 Time start : 17/Aug/1999 11:11:18

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 60 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 * FRAME 0
 CRC MULTI FRAME LOSS 0
 PATTERN 0
 REMOTE ALARM 0

ERRORS COUNT

BIT 0
 CODE 0
 FRAME 0
 CRC 0
 E_BIT 0

ERROR FREE SECONDS

BIT 60
 CODE 60
 FRAME 60

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



```

CRC                60
E_BIT              60
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop          : 17/Aug/1999 11:12:18
-----

step 2.a
PARTIAL TEST RESULT : passed
TEST CONDITIONS step 2.a
Network Emulator frequency CLOCK : 2048000 MHz
With cable b/a -10% output level NT
Time start         : 17/Aug/1999 11:12:30
I.U.T. SIGNAL ANALYSIS
TEST PERIOD       60 s
=====
ALARM SECONDS
POWER LOSS        0
SIGNAL LOSS       0
AIS               0
FRAME             0
CRC MULTI FRAME LOSS 0
PATTERN          0
REMOTE ALARM      0
=====
ERRORS COUNT
BIT               0
CODE             0
FRAME            0
CRC              0
E_BIT            0
=====
ERROR FREE SECONDS
BIT              60
CODE            60
FRAME           60
CRC             60
E_BIT           60
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
* Time stop          : 17/Aug/1999 11:13:30
-----

step 3.a
PARTIAL TEST RESULT : passed
TEST CONDITIONS step 3.a
Network Emulator frequency CLOCK : 2048000 MHz
Without cable a/b +10% output level NT
Time start         : 17/Aug/1999 11:13:42
I.U.T. SIGNAL ANALYSIS
TEST PERIOD       60 s
=====
ALARM SECONDS
POWER LOSS        0
SIGNAL LOSS       0
AIS               0
    
```



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

```

FRAME                0
CRC MULTI FRAME LOSS 0
PATTERN              0
REMOTE ALARM         0
    
```

```

=====
ERRORS COUNT
BIT                  0
CODE                 0
FRAME                0
CRC                  0
E_BIT                0
    
```

```

=====
ERROR FREE SECONDS
BIT                  60
CODE                 60
FRAME                60
CRC                  60
E_BIT                60
    
```

```

=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop           : 17/Aug/1999 11:14:42
    
```

```

-----
step 4.a
PARTIAL TEST RESULT : passed
TEST CONDITIONS     step 4.a
Network Emulator frequency CLOCK : 2048000 MHz
Without cable b/a +10% output level NT
Time start          : 17/Aug/1999 11:14:54
    
```

```

I.U.T. SIGNAL ANALYSIS
TEST PERIOD         60 s
=====
ALARM SECONDS
POWER LOSS          0
SIGNAL LOSS         0
AIS                 0
FRAME                0
CRC MULTI FRAME LOSS 0
PATTERN              0
REMOTE ALARM         0
    
```

```

=====
ERRORS COUNT
BIT                  0
CODE                 0
FRAME                0
CRC                  0
E_BIT                0
    
```

```

=====
ERROR FREE SECONDS
BIT                  60
CODE                 60
FRAME                60
CRC                  60
E_BIT                60
    
```

```

=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
    
```

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Time stop : 17/Aug/1999 11:15:54

step 1.b

PARTIAL TEST RESULT : passed

TEST CONDITIONS step 1.b

Network Emulator frequency CLOCK : 2048065.536 MHz

With cable a/b -10% output level NT

Time start : 17/Aug/1999 11:16:25

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 60 s

=====

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

FRAME 0

CRC MULTI FRAME LOSS 0

PATTERN 0

REMOTE ALARM 0

=====

ERRORS COUNT

BIT 0

CODE 0

FRAME 0

CRC 0

E_BIT 0

=====

ERROR FREE SECONDS

BIT 60

CODE 60

FRAME 60

CRC 60

E_BIT 60

=====

I.U.T. final STATUS ALARM

Normal Operational Frames

Time stop : 17/Aug/1999 11:17:26

step 2.b

PARTIAL TEST RESULT : passed

TEST CONDITIONS step 2.b

* Network Emulator frequency CLOCK : 2048065.536 MHz

With cable b/a -10% output level NT

Time start : 17/Aug/1999 11:17:37

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 60 s

=====

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

FRAME 0

CRC MULTI FRAME LOSS 0

PATTERN 0

REMOTE ALARM 0

=====

ERRORS COUNT



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

```

BIT                0
CODE               0
FRAME             0
CRC               0
E_BIT            0
    
```

```

=====
ERROR FREE SECONDS
BIT                60
CODE               60
FRAME             60
CRC               60
E_BIT            60
    
```

```

=====
I.U.T. final STATUS ALARM
Normal Operational Frames
    
```

```

=====
Time stop          : 17/Aug/1999 11:18:38
-----
    
```

step 3.b

```

PARTIAL TEST RESULT : passed
TEST CONDITIONS     step 3.b
Network Emulator frequency CLOCK : 2048065.536 MHz
Without cable a/b +10% output level NT
Time start          : 17/Aug/1999 11:18:49
    
```

```

I.U.T. SIGNAL ANALYSIS
TEST PERIOD        60 s
    
```

```

=====
ALARM SECONDS
POWER LOSS        0
SIGNAL LOSS       0
AIS               0
FRAME             0
CRC MULTI FRAME LOSS 0
PATTERN           0
REMOTE ALARM      0
    
```

```

=====
ERRORS COUNT
BIT                0
CODE               0
FRAME             0
CRC               0
E_BIT            0
    
```

```

=====
ERROR FREE SECONDS
BIT                60
CODE               60
FRAME             60
CRC               60
E_BIT            60
    
```

```

=====
I.U.T. final STATUS ALARM
Normal Operational Frames
    
```

```

=====
Time stop          : 17/Aug/1999 11:19:50
-----
    
```

step 4.b

```

PARTIAL TEST RESULT : passed
TEST CONDITIONS     step 4.b
    
```



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Network Emulator frequency CLOCK : 2048065.536 MHz

Without cable b/a +10% output level NT

Time start : 17/Aug/1999 11:20:01

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 60 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 FRAME 0
 CRC MULTI FRAME LOSS 0
 PATTERN 0
 REMOTE ALARM 0

ERRORS COUNT

BIT 0
 CODE 0
 FRAME 0
 CRC 0
 E_BIT 0

ERROR FREE SECONDS

BIT 60
 CODE 60
 FRAME 60
 CRC 60
 E_BIT 60

I.U.T. final STATUS ALARM

Normal Operational Frames

Time stop : 17/Aug/1999 11:21:02

step 1.c

PARTIAL TEST RESULT : passed

TEST CONDITIONS step 1.c

Network Emulator frequency CLOCK : 2047934.464 MHz

With cable a/b -10% output level NT

Time start : 17/Aug/1999 11:21:33

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 60 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 FRAME 0
 CRC MULTI FRAME LOSS 0
 PATTERN 0
 REMOTE ALARM 0

ERRORS COUNT

BIT 0
 CODE 0
 FRAME 0
 CRC 0
 E_BIT 0



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

```

ERROR FREE SECONDS
BIT                60
CODE               60
FRAME              60
CRC                60
E_BIT              60
    
```

```

=====
I.U.T. final STATUS ALARM
Normal Operational Frames
    
```

```

=====
Time stop           : 17/Aug/1999 11:22:33
    
```

step 2.c

```

PARTIAL TBST RESULT : passed
TEST CONDITIONS     step 2.c
Network Emulator frequency CLOCK : 2047934.464 MHz
With cable b/a -10% output level NT
Time start          : 17/Aug/1999 11:22:45
    
```

```

I.U.T. SIGNAL ANALYSIS
TEST PERIOD        60 s
    
```

```

=====
ALARM SECONDS
POWER LOSS         0
SIGNAL LOSS        0
AIS                0
FRAME              0
CRC MULTI FRAME LOSS 0
PATTERN           0
REMOTE ALARM       0
    
```

```

=====
BRRORS COUNT
BIT                0
CODE               0
FRAME              0
CRC                0
E_BIT              0
    
```

```

=====
ERROR FREE SECONDS
BIT                60
CODE               60
FRAME              60
CRC                60
E_BIT              60
    
```

```

=====
I.U.T. final STATUS ALARM
Normal Operational Frames
    
```

```

=====
Time stop           : 17/Aug/1999 11:23:45
    
```

step 3.c

```

PARTIAL TBST RESULT : passed
TEST CONDITIONS     step 3.c
Network Emulator frequency CLOCK : 2047934.464 MHz
Without cable a/b +10% output level NT
Time start          : 17/Aug/1999 11:23:57
    
```

```

I.U.T. SIGNAL ANALYSIS
TEST PERIOD        60 s
    
```



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

```
ALARM SECONDS
POWER LOSS      0
SIGNAL LOSS     0
AIS             0
FRAME           0
CRC MULTI FRAME LOSS 0
PATTERN         0
REMOTE ALARM    0
=====
```

```
ERRORS COUNT
BIT             0
CODE            0
FRAME           0
CRC             0
E_BIT           0
=====
```

```
ERROR FREE SECONDS
BIT            60
CODE           60
FRAME          60
CRC            60
E_BIT          60
=====
```

```
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
```

Time stop : 17/Aug/1999 11:24:57

step 4.c

```
PARTIAL TEST RESULT : passed
TEST CONDITIONS step 4.c
Network Emulator frequency CLOCK : 2047934.464 MHz
Without cable b/a +10% output level NT
Time start : 17/Aug/1999 11:25:09
```

```
I.U.T. SIGNAL ANALYSIS
TEST PERIOD 60 s
=====
```

```
ALARM SECONDS
POWER LOSS      0
SIGNAL LOSS     0
AIS             0
FRAME           0
CRC MULTI FRAME LOSS 0
PATTERN         0
REMOTE ALARM    0
=====
```

```
ERRORS COUNT
BIT             0
CODE            0
FRAME           0
CRC             0
E_BIT           0
=====
```

```
ERROR FREE SECONDS
BIT            60
CODE           60
FRAME          60
CRC            60
E_BIT          60
```



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

```
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop           : 17/Aug/1999 11:26:09
-----
@
-----
```




TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TE/CTR4/dir16/B33_6dB_Cable

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.3.3 Minimum tolerance to jitter (with and without 6dB cable)
 TEST EXECUTION CONDITIONS : 6db cable inserted
 Test Sequence created on : 17/Aug/1999 09:01:56
 TEST RESULT : PASSED

JITTER of the		I.U.T. OUTPUT SIGNAL					
NT EMULATOR		NT clock freq.		NT clock freq.		NT clock freq.	
		2.048 MHz		2.048 MHz		2.048 MHz	
		nominal		plus 32 ppm		minus 32 ppm	
Freq.	Amplit.						
[Hz]	[UI]	NOP	SYNC	NOP	SYNC	NOP	SYNC
1	1.88	yes	yes	yes	yes	yes	yes
3	1.5	yes	yes	yes	yes	yes	yes
6	1.29	yes	yes	yes	yes	yes	yes
12	1.12	yes	yes	yes	yes	yes	yes
20	1	yes	yes	yes	yes	yes	yes
31	1	yes	yes	yes	yes	yes	yes
63	1	yes	yes	yes	yes	yes	yes
125	1	yes	yes	yes	yes	yes	yes
250	1	yes	yes	yes	yes	yes	yes
500	1	yes	yes	yes	yes	yes	yes
1000	1	yes	yes	yes	yes	yes	yes
2000	1	yes	yes	yes	yes	yes	yes
3600	1	yes	yes	yes	yes	yes	yes
4000	0.9	yes	yes	yes	yes	yes	yes
8000	0.46	yes	yes	yes	yes	yes	yes
16000	0.22	yes	yes	yes	yes	yes	yes
32000	0.2	yes	yes	yes	yes	yes	yes
64000	0.2	yes	yes	yes	yes	yes	yes
100000	0.2	yes	yes	yes	yes	yes	yes

@



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ../TB/CTR4/dir16/B33_no_6dB_Cable

I.U.T. PM4351 COMBT PMC-Sierra Inc
 Test : B.3.3 Minimum tolerance to jitter (with and without 6dB cable)
 TEST EXECUTION CONDITIONS : 6db cable not inserted
 Test Sequence created on : 17/Aug/1999 09:01:56
 TEST RESULT : PASSED

JITTER of the		I.U.T. OUTPUT SIGNAL							
NT EMULATOR		NT clock freq.		NT clock freq.		NT clock freq.			
		2.048 MHz		2.048 MHz		2.048 MHz			
		nominal		plus 32 ppm		minus 32 ppm			
Freq.	Amplit.								
[Hz]	[UI]	NOF	SYNC	NOF	SYNC	NOF	SYNC	NOF	SYNC
1	1.88	yes	yes	yes	yes	yes	yes	yes	yes
3	1.5	yes	yes	yes	yes	yes	yes	yes	yes
6	1.29	yes	yes	yes	yes	yes	yes	yes	yes
12	1.12	yes	yes	yes	yes	yes	yes	yes	yes
20	1	yes	yes	yes	yes	yes	yes	yes	yes
31	1	yes	yes	yes	yes	yes	yes	yes	yes
63	1	yes	yes	yes	yes	yes	yes	yes	yes
125	1	yes	yes	yes	yes	yes	yes	yes	yes
250	1	yes	yes	yes	yes	yes	yes	yes	yes
500	1	yes	yes	yes	yes	yes	yes	yes	yes
1000	1	yes	yes	yes	yes	yes	yes	yes	yes
2000	1	yes	yes	yes	yes	yes	yes	yes	yes
3600	1	yes	yes	yes	yes	yes	yes	yes	yes
4000	0.9	yes	yes	yes	yes	yes	yes	yes	yes
8000	0.46	yes	yes	yes	yes	yes	yes	yes	yes
16000	0.22	yes	yes	yes	yes	yes	yes	yes	yes
32000	0.2	yes	yes	yes	yes	yes	yes	yes	yes
64000	0.2	yes	yes	yes	yes	yes	yes	yes	yes
100000	0.2	yes	yes	yes	yes	yes	yes	yes	yes

®



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TE/CTR4/dir16/B34

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.3.4 Tolerable longitudinal voltage
 Test Sequence created on : 17/Aug/1999 09:01:56
 TBST RESULT : PASSED

Longitudinal Signal		ALARMS					ERRORS count				pass
Frequency	Amplitude	SGL	AIS	RAI	FML	CRC	CODE	FRAME	CRC	Sbit	fail
[Hz]	[V rms]										
1.000E+01	1.972E+00	no	no	no	no	no	0	0	0	0	pass
1.500E+01	1.977E+00	no	no	no	no	no	0	0	0	0	pass
3.100E+01	1.980E+00	no	no	no	no	no	0	0	0	0	pass
6.300E+01	1.985E+00	no	no	no	no	no	0	0	0	0	pass
1.250E+02	1.980E+00	no	no	no	no	no	0	0	0	0	pass
2.500E+02	1.968E+00	no	no	no	no	no	0	0	0	0	pass
5.000E+02	1.957E+00	no	no	no	no	no	0	0	0	0	pass
1.000E+03	1.952E+00	no	no	no	no	no	0	0	0	0	pass
2.000E+03	1.954E+00	no	no	no	no	no	0	0	0	0	pass
4.000E+03	1.969E+00	no	no	no	no	no	0	0	0	0	pass
8.000E+03	1.997E+00	no	no	no	no	no	0	0	0	0	pass
1.600E+04	1.982E+00	no	no	no	no	no	0	0	0	0	pass
3.200E+04	1.973E+00	no	no	no	no	no	0	0	0	0	pass
6.400E+04	1.966E+00	no	no	no	no	no	0	0	0	0	pass
1.280E+05	1.953E+00	no	no	no	no	no	0	0	0	0	pass
1.500E+05	1.994E+00	no	no	no	no	no	0	0	0	0	pass

®

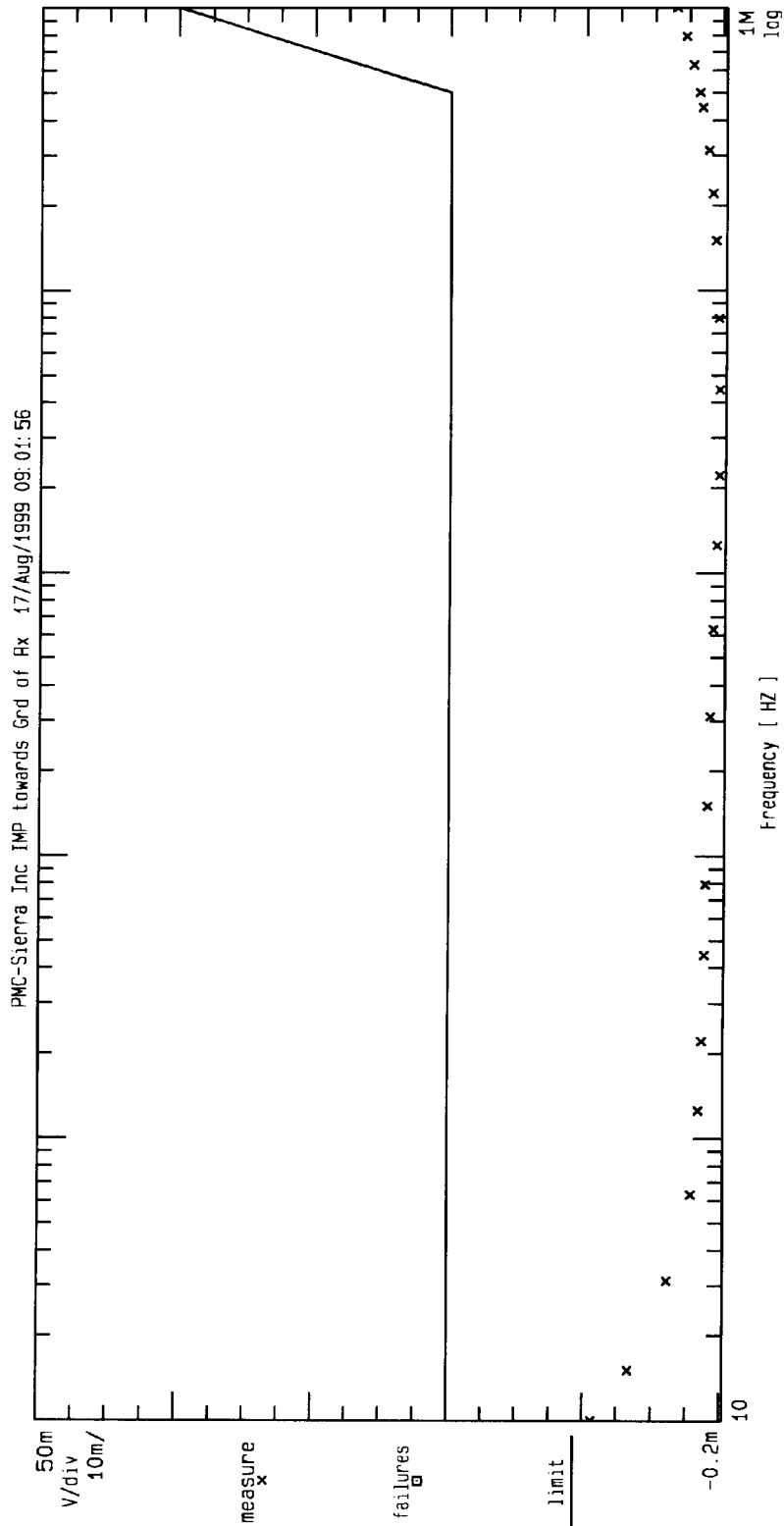
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Data retrieved from : ./TR/CTR4/dir16/B35

I.U.T. PM4351 COMBT PMC-Sierra Inc
Test : B.3.5 Impedance towards ground of the receiver inputs
Test Sequence created on : 17/Aug/1999 09:01:56
TEST RESULT : PASSED
®

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873





TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TE/CTR4/dir16/B41

I.U.T. PW4351 COMET PMC-Sierra Inc
 Test : E.4.1 Generation of frame alignment word
 Test Sequence created on : 17/Aug/1999 09:01:56
 TEST RESULT : PASSED

STBP	ALARMS					ERRORS count					ERROR FREE SECONDS					
	num.	SIG	AIS	RAI	FML	CRC	BIT	CODE	FRAME	CRC	E_bit	BIT	CODE	FRAME	CRC	E_bit
1	no	no	no	no	no	0	0	0	0	0	0	0	1	1	2	2
2	no	no	no	no	no	0	0	0	0	0	0	0	1	1	2	2
3	no	no	YES	no	no	0	0	0	0	0	0	0	1	2	2	2
4	no	no	YES	no	no	0	0	0	0	0	0	0	1	2	2	2
5	no	no	no	no	no	0	0	0	0	0	0	0	1	1	2	2

@



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TE/CTR4/dir16/B42

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.4.2 CRC processing step n. : 1
 Test Sequence created on : 17/Aug/1999 09:01:56
 Time start : 17/Aug/1999 13:29:57
 P.R.A.S.G. sequences :

C-1.1

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 0

ERRORS COUNT

CODE 0
 FRAME 0
 CRC 0
 E_bit 0

ERROR FREE SECONDS

CODE 10
 FRAME 10
 CRC 10
 E_bit 10

I.U.T. final STATUS ALARM

Normal Operational Frames

Time stop : 17/Aug/1999 13:30:07

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.4.2 CRC processing step n. : 2
 Test Sequence created on : 17/Aug/1999 09:01:56
 Time start : 17/Aug/1999 13:30:12
 P.R.A.S.G. sequences :

C.2.1

C.2.2

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 0

ERRORS COUNT

CODE 0
 FRAME 0
 CRC 0
 E_bit 1

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



```

=====
ERROR FREE SECONDS
CODE          10
FRAME         10
CRC           10
E_bit        9
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop          : 17/Aug/1999 13:30:23
-----
I.U.T.  PM4351 COMET    PMC-Sierra Inc
Test   : B.4.2      CRC processing step n. : 3
Test Sequence created on : 17/Aug/1999 09:01:56
Time start          : 17/Aug/1999 13:30:41
P.R.A.S.G. sequences :
C-3.0
C-3.1
C-3.2
LOOP
I.U.T.  SIGNAL ANALYSIS
TEST PERIOD          10 s
=====
ALARM SECONDS
POWER LOSS          0
SIGNAL LOSS         0
AIS                 0
CRC MULTI FRAME LOSS 0
REMOTE ALARM        0
=====
ERRORS COUNT
CODE          0
FRAME         0
CRC           0
E_bit        2
=====
ERROR FREE SECONDS
CODE          10
FRAME         10
CRC           10
E_bit        9
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop          : 17/Aug/1999 13:30:52
-----
I.U.T.  PM4351 COMET    PMC-Sierra Inc
Test   : B.4.2      CRC processing step n. : 4
Test Sequence created on : 17/Aug/1999 09:01:56
Time start          : 17/Aug/1999 13:31:11
P.R.A.S.G. sequences :
C-4.1
C-4.2
C-4.3
C-4.4
LOOP
I.U.T.  SIGNAL ANALYSIS
TEST PERIOD          10 s
    
```


TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



```
=====
ALARM SECONDS
POWER LOSS      0
SIGNAL LOSS     0
AIS             0
CRC MULTI FRAME LOSS 0
REMOTE ALARM    0
=====
```

```
=====
ERRORS COUNT
CODE            0
FRAME          0
CRC            0
E_bit         1828
=====
```

```
=====
ERROR FREE SECONDS
CODE           10
FRAME         10
CRC           10
E_bit         7
=====
```

```
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop      : 17/Aug/1999 13:31:21
=====
```

```
I.U.T.  PM4351 COMET   PMC-Sierra Inc
Test   : B.4.2      CRC processing step n. : 5
Test Sequence created on : 17/Aug/1999 09:01:56
Time start      : 17/Aug/1999 13:31:40
P.R.A.S.G. sequences :
```

- C-5.0
- C-5.1.1
- C-5.1.2
- C-5.2
- C-5.3.2
- C-5.4

LOOP

```
I.U.T.  SIGNAL ANALYSIS
TEST PERIOD      10 s
=====
```

```
=====
ALARM SECONDS
POWER LOSS      0
SIGNAL LOSS     0
AIS             0
CRC MULTI FRAME LOSS 0
REMOTE ALARM    1
=====
```

```
=====
ERRORS COUNT
CODE            0
FRAME          0
CRC            0
E_bit         1825
=====
```

```
=====
ERROR FREE SECONDS
CODE           10
FRAME         10
CRC           10
E_bit         7
=====
```

```
I.U.T. final STATUS ALARM
```

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Normal Operational Frames

Time stop : 17/Aug/1999 13:31:51

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.4.2 CRC processing step n. : 6
 Test Sequence created on : 17/Aug/1999 09:01:56
 Time start : 17/Aug/1999 13:32:10
 P.R.A.S.G. sequences :
 C-6.1
 END

I.U.T. SIGNAL ANALYSIS
 TEST PERIOD 10 s

ALARM SECONDS
 POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 10

ERRORS COUNT
 CODE 0
 FRAME 0
 CRC 0
 E_bit 0

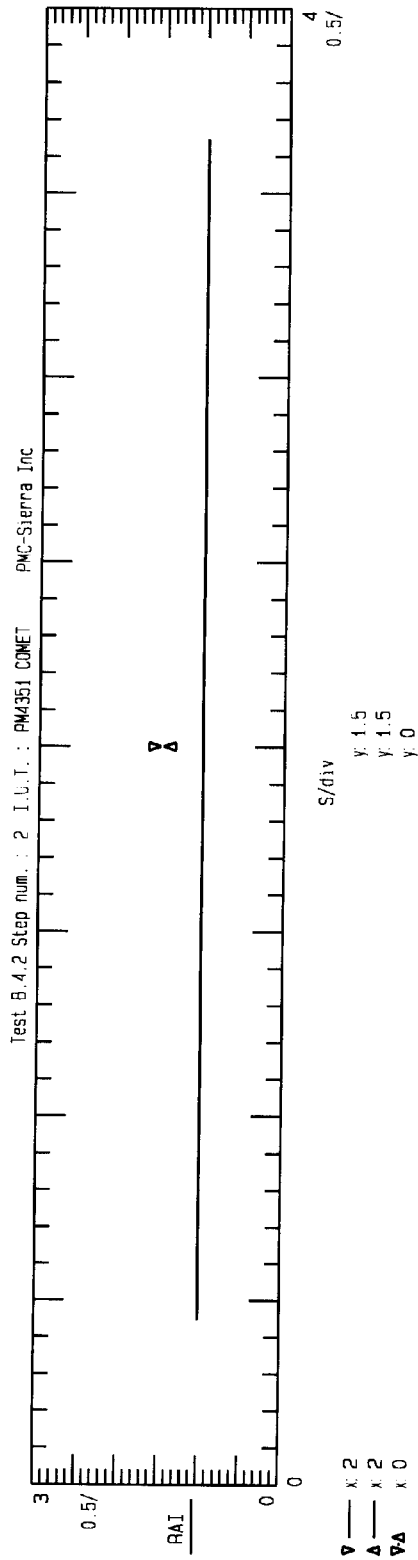
ERROR FREE SECONDS
 CODE 10
 FRAME 10
 CRC 10
 E_bit 10

I.U.T. final STATUS ALARM
 REMOTE ALARM

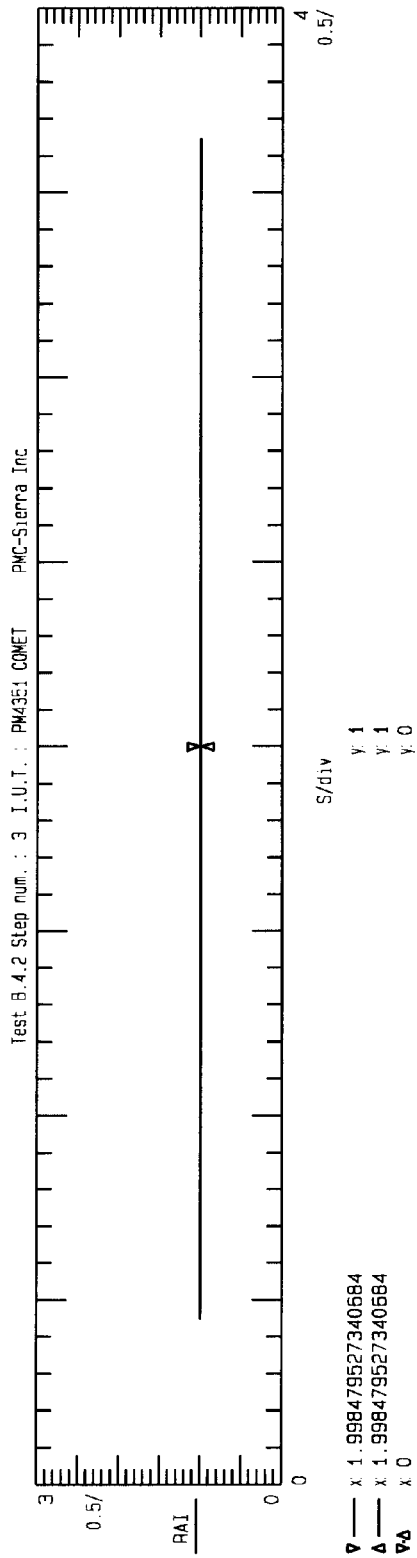
Time stop : 17/Aug/1999 13:32:20

@

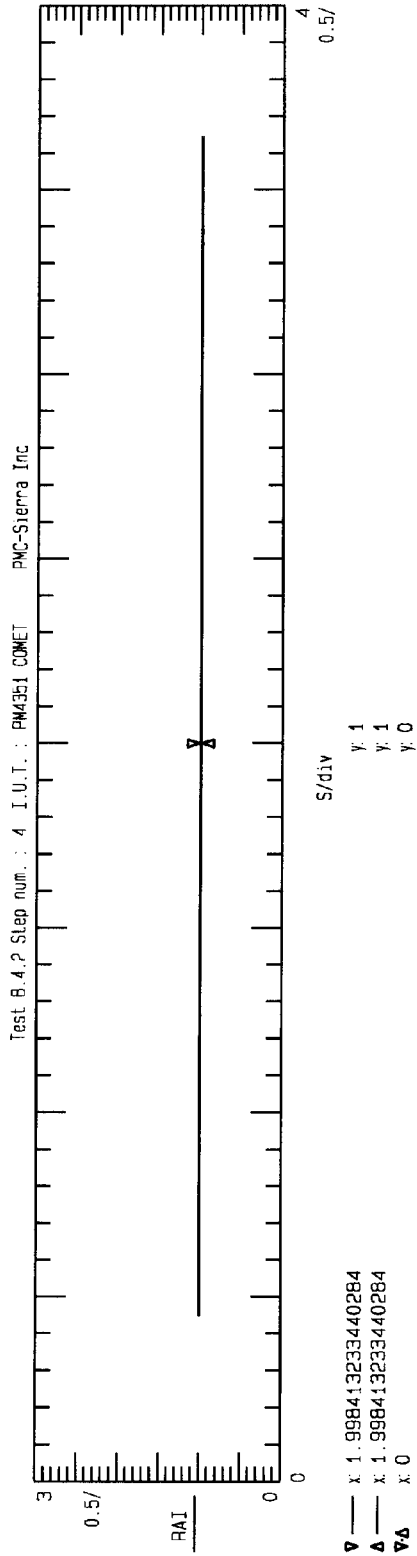
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



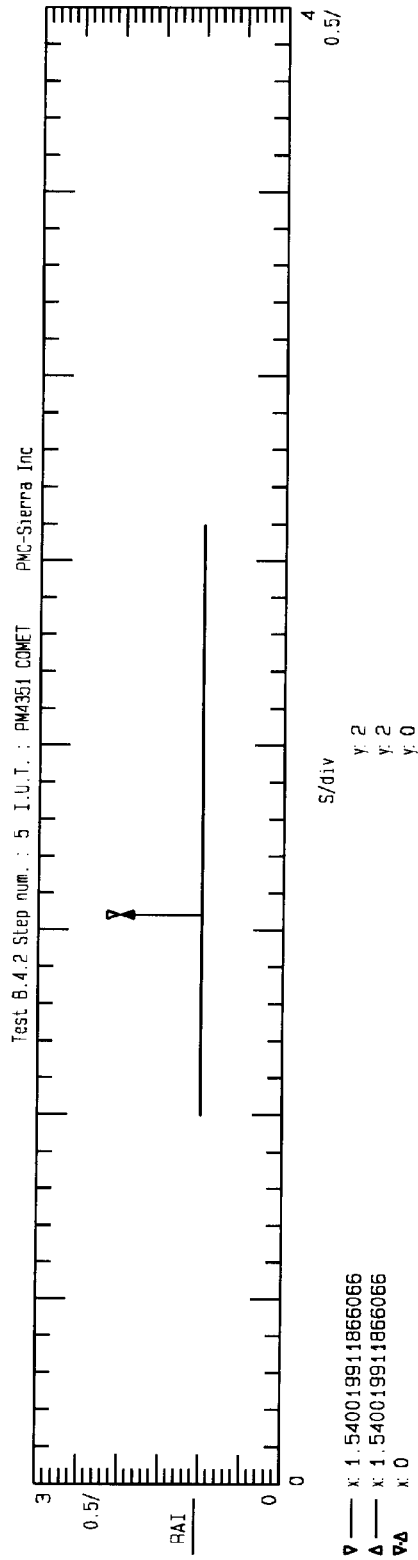
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



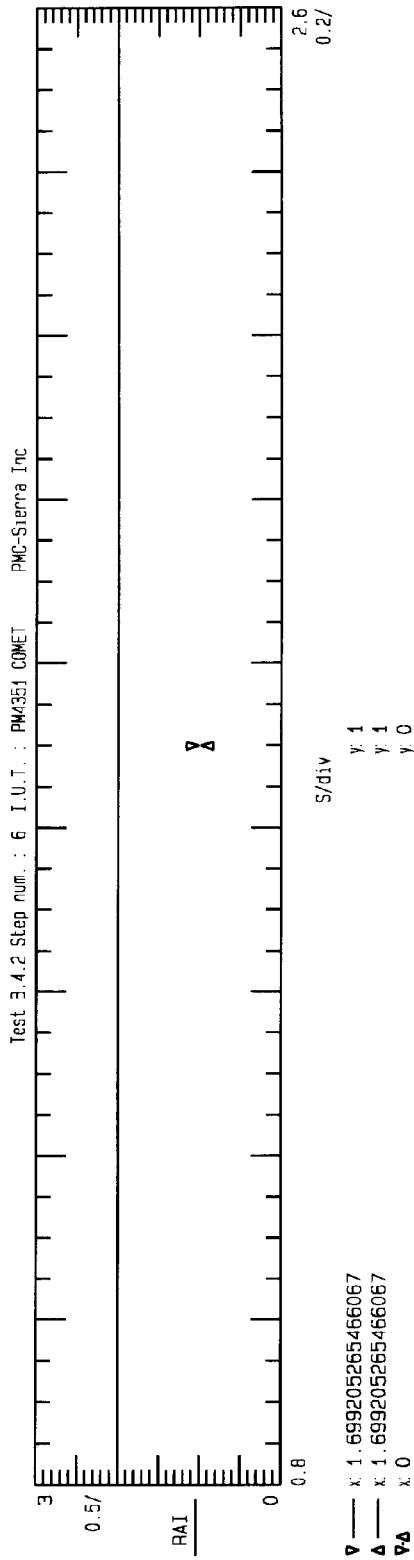
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



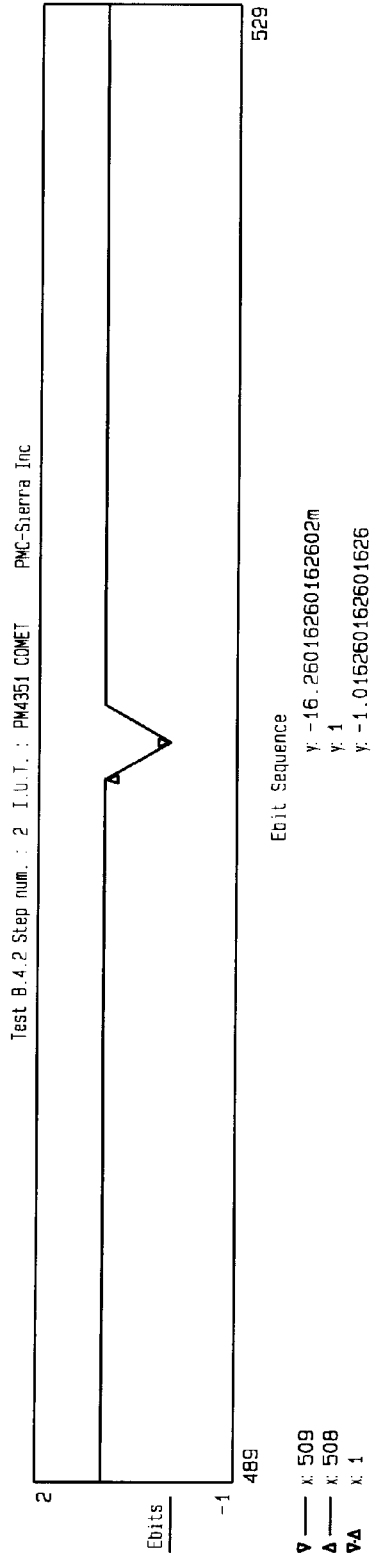
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



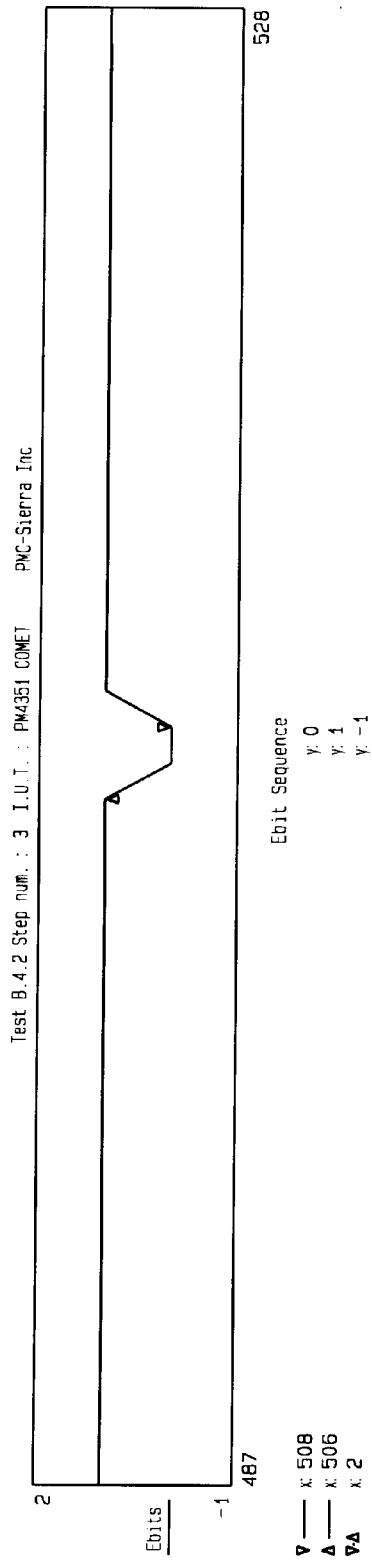
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



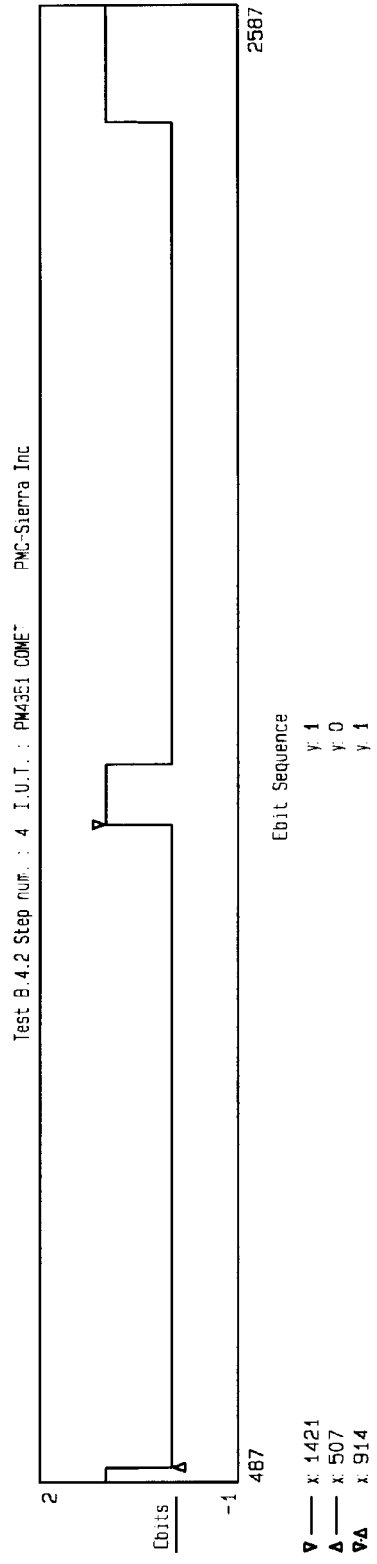
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



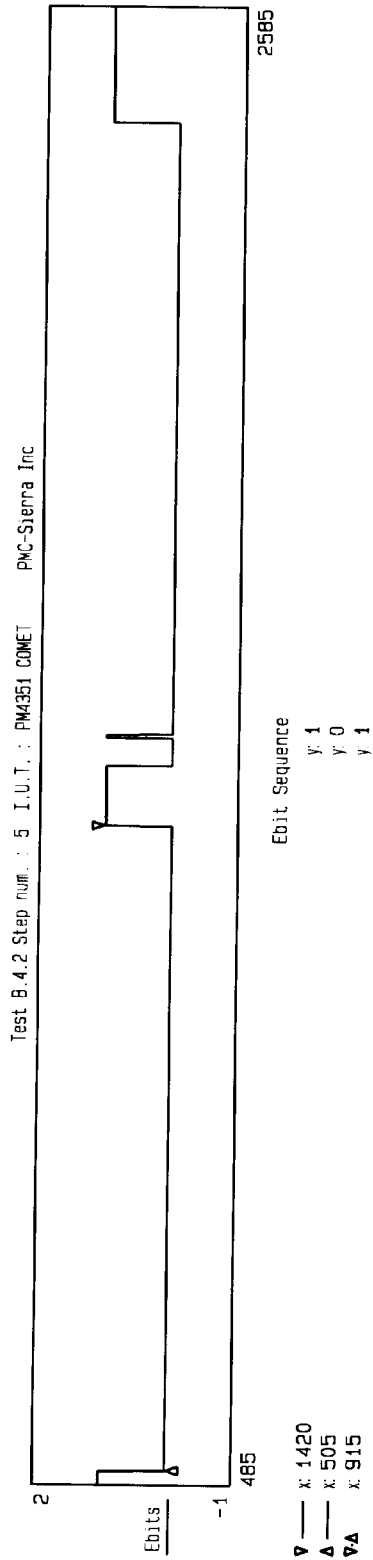
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873





TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TE/CTR4/dir16/B51

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.5.1 State-matrix at the IUT user side (ITAAB note 62 applied)
 Test Sequence created on : 17/Aug/1999 09:01:56
 TEST RESULT : PASSED

PCTR	FINAL STATE	SIGNAL FROM I.U.T.
step Num.	I.U.T.	
1	N/A	Normal Operational Frames
23	N/A	Normal Operational Frames
9	N/A	REMOTE ALARM
15	N/A	REMOTE ALARM
21	N/A	REMOTE ALARM
15a	N/A	REMOTE ALARM
19	N/A	REMOTE ALARM
16	N/A	Normal Operational Frames
24	N/A	REMOTE ALARM
15	N/A	REMOTE ALARM
20	N/A	Normal Operational Frames
21a	N/A	REMOTE ALARM
16a	N/A	Normal Operational Frames
25	N/A	REMOTE ALARM
17	N/A	Normal Operational Frames
3	N/A	Normal Operational Frames
8	N/A	Normal Operational Frames
4	N/A	REMOTE ALARM
13	N/A	Normal Operational Frames
7	N/A	REMOTE ALARM
13a	N/A	Normal Operational Frames
5	N/A	REMOTE ALARM
17	N/A	Normal Operational Frames
6	N/A	Normal Operational Frames
22	N/A	Normal Operational Frames
3	N/A	Normal Operational Frames
9	N/A	REMOTE ALARM
14	N/A	Normal Operational Frames
12	N/A	REMOTE ALARM
14a	N/A	Normal Operational Frames
10	N/A	REMOTE ALARM
18	N/A	Normal Operational Frames
11	N/A	Normal Operational Frames



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TE/CTR4/dir16/B52

I.U.T. PM4351 COMET PMC-Sierra Inc
Test B.5.2 Frame alignment (without the test of CRC procedure)step : 1
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 17/Aug/1999 09:01:56
Time start : 17/Aug/1999 13:41:04
P.R.A.S.G. sequences :

A-1.1
LOOP
I.U.T. SIGNAL ANALYSIS
TEST PERIOD 10 s
=====

ALARM SECONDS
POWER LOSS 0
SIGNAL LOSS 0
AIS 0
CRC MULTI FRAME LOSS 0
REMOTE ALARM 0
=====

ERRORS COUNT
CODE 0
FRAME 0
CRC 0
E_bit 0
=====

ERROR FREE SECONDS
CODE 10
FRAME 10
CRC 10
E_bit 10
=====

I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop : 17/Aug/1999 13:41:14

I.U.T. PM4351 COMET PMC-Sierra Inc
Test B.5.2 Frame alignment (without the test of CRC procedure)step : 2
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
READY
Test Sequence created on : 17/Aug/1999 09:01:56
Time start : 17/Aug/1999 13:41:20
P.R.A.S.G. sequences :

A-2.1
A-2.2
LOOP
I.U.T. SIGNAL ANALYSIS
TEST PERIOD 10 s
=====

ALARM SECONDS
POWER LOSS 0
SIGNAL LOSS 0
AIS 0
CRC MULTI FRAME LOSS 0
REMOTE ALARM 0

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



```

=====
ERRORS COUNT
CODE          0
FRAME         0
CRC           0
E_bit        0
=====
    
```

```

=====
ERROR FREE SECONDS
CODE          10
FRAME         10
CRC           10
E_bit        10
=====
    
```

I.U.T. final STATUS ALARM

Normal Operational Frames

=====

Time stop : 17/Aug/1999 13:41:30

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test B.5.2 Frame alignment (without the test of CRC procedure)step : 3
 PRA/E1 SEQUENCE GENERATOR A.04.00
 Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994

READY

Test Sequence created on : 17/Aug/1999 09:01:56

Time start : 17/Aug/1999 13:41:37

P.R.A.S.G. sequences :

A-3.1

A-3.2

LOOP

I.U.T. SIGNAL ANALYSIS

TRST PERIOD 10 s

=====

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

ALS 0

CRC MULTI FRAME LOSS 0

REMOTE ALARM 0

=====

ERRORS COUNT

CODE 0

FRAME 0

CRC 0

E_bit 0

* =====

ERROR FREE SECONDS

CODE 10

FRAME 10

CRC 10

E_bit 10

=====

I.U.T. final STATUS ALARM

Normal Operational Frames

=====

Time stop : 17/Aug/1999 13:41:48

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test B.5.2 Frame alignment (without the test of CRC procedure)step : 4
 PRA/E1 SEQUENCE GENERATOR A.04.00
 Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



READY
 Test Sequence created on : 17/Aug/1999 09:01:56
 Time start : 17/Aug/1999 13:41:55
 P.R.A.S.G. sequences :

A-4.1
 A-4.2

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 1

ERRORS COUNT

CODE 0
 FRAME 0
 CRC 0
 E_bit 0

ERROR FRBE SECONDS

CODE 10
 FRAME 10
 CRC 10
 E_bit 10

I.U.T. final STATUS ALARM

Normal Operational Frames

Time stop : 17/Aug/1999 13:42:05

I.U.T. PM4351 COMET PMC-Sierra Inc

Test B.5.2 Frame alignment (without the test of CRC procedure)step : 5

PRA/E1 SEQUENCE GENERATOR A.04.00

Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSBLT Italy 1994

READY

Test Sequence created on : 17/Aug/1999 09:01:56

Time start : 17/Aug/1999 13:42:13

P.R.A.S.G. sequences :

A-5.1

A-5.2

* LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 10

ERRORS COUNT

CODE 0
 FRAME 0
 CRC 0
 E_bit 0

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



=====

ERROR FREE SECONDS

CODE 10
 FRAME 10
 CRC 10
 E_bit 10

=====

I.U.T. final STATUS ALARM

REMOTE ALARM

=====

Time stop : 17/Aug/1999 13:42:23

I.U.T. PM4351 COMET PMC-Sierra Inc

Test B.5.2 Frame alignment (without the test of CRC procedure)step : 6

PRA/E1 SEQUENCE GENERATOR A.04.00

Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994

READY

Test Sequence created on : 17/Aug/1999 09:01:56

Time start : 17/Aug/1999 13:42:31

P.R.A.S.G. sequences :

A-6.1

A-6.2

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

=====

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 10

=====

ERRORS COUNT

CODE 0
 FRAME 0
 CRC 0
 E_bit 0

=====

ERROR FREE SECONDS

CODE 10
 FRAME 10
 CRC 10
 E_bit 10

* =====

I.U.T. final STATUS ALARM

REMOTE ALARM

=====

Time stop : 17/Aug/1999 13:42:41

I.U.T. PM4351 COMET PMC-Sierra Inc

Test B.5.2 Frame alignment (without the test of CRC procedure)step : 7

PRA/E1 SEQUENCE GENERATOR A.04.00

Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994

READY

Test Sequence created on : 17/Aug/1999 09:01:56

Time start : 17/Aug/1999 13:42:49

P.R.A.S.G. sequences :

A-7.1

LOOP



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

```

I.U.T. SIGNAL ANALYSIS
TEST PERIOD          10 s
=====
ALARM SECONDS
POWER LOSS          0
SIGNAL LOSS         0
AIS                 0
CRC MULTI FRAME LOSS 0
REMOTE ALARM        1
=====
ERRORS COUNT
CODE                0
FRAME               0
CRC                 0
E_bit               0
=====
ERROR FREE SECONDS
CODE                10
FRAME               10
CRC                 10
E_bit               10
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop           : 17/Aug/1999 13:42:59
    
```

```

I.U.T. PM4351 COMET      PMC-Sierra Inc
Test B.5.2      Frame alignment (without the test of CRC procedure)step : 8
PRA/E1 SEQUENCE GENERATOR A.04.00
Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
    
```

```

READY
Test Sequence created on : 17/Aug/1999 09:01:56
Time start                : 17/Aug/1999 13:43:07
P.R.A.S.G. sequences :
    
```

```

A-8.1
LOOP
I.U.T. SIGNAL ANALYSIS
TEST PERIOD          10 s
=====
ALARM SECONDS
POWER LOSS          0
SIGNAL LOSS         0
AIS                 0
* CRC MULTI FRAME LOSS 0
REMOTE ALARM        0
=====
ERRORS COUNT
CODE                0
FRAME               0
CRC                 0
E_bit               0
=====
ERROR FREE SECONDS
CODE                10
FRAME               10
CRC                 10
E_bit               10
=====
I.U.T. final STATUS ALARM
    
```

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Normal Operational Frames

Time stop : 17/Aug/1999 13:43:17

I.U.T. PM4351 COMET PMC-Sierra Inc

Test B.5.2 Frame alignment (without the test of CRC procedure)step : 9

PRA/E1 SEQUENCE GENERATOR A.04.00

Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994

READY

Test Sequence created on : 17/Aug/1999 09:01:56

Time start : 17/Aug/1999 13:43:24

P.R.A.S.G. sequences :

A-9.1

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

CRC MULTI FRAME LOSS 0

REMOTE ALARM 0

ERRORS COUNT

CODE 0

FRAME 0

CRC 0

E_bit 0

ERROR FREE SECONDS

CODE 10

FRAME 10

CRC 10

E_bit 10

I.U.T. final STATUS ALARM

Normal Operational Frames

Time stop : 17/Aug/1999 13:43:35

I.U.T. PM4351 COMET PMC-Sierra Inc

Test B.5.2 Frame alignment (without the test of CRC procedure)step : 10

PRA/E1 SEQUENCE GENERATOR A.04.00

* Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994

READY

Test Sequence created on : 17/Aug/1999 09:01:56

Time start : 17/Aug/1999 13:43:42

P.R.A.S.G. sequences :

A-10.1

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

CRC MULTI FRAME LOSS 0

REMOTE ALARM 10

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



```
=====
ERRORS COUNT
CODE          0
FRAME         0
CRC           0
E_bit        0
=====
```

```
ERROR FREE SECONDS
CODE          10
FRAME         10
CRC           10
E_bit        10
=====
```

I.U.T. final STATUS ALARM

REMOTE ALARM

=====

Time stop : 17/Aug/1999 13:43:53

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test B.5.2 Frame alignment (without the test of CRC procedure)step : 11
 PRA/E1 SEQUENCE GENERATOR A.04.00
 Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
 READY

Test Sequence created on : 17/Aug/1999 09:01:56

Time start : 17/Aug/1999 13:44:00

P.R.A.S.G. sequences :

A-11.1

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

=====

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

CRC MULTI FRAME LOSS 0

REMOTE ALARM 1

=====

ERRORS COUNT

CODE 0

FRAME 0

CRC 0

E_bit 0

=====

* ERROR FREE SECONDS

CODE 10

FRAME 10

CRC 10

E_bit 10

=====

I.U.T. final STATUS ALARM

Normal Operational Frames

=====

Time stop : 17/Aug/1999 13:44:11

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test B.5.2 Frame alignment (without the test of CRC procedure)step : 12
 PRA/E1 SEQUENCE GENERATOR A.04.00
 Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994
 READY



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Test Sequence created on : 17/Aug/1999 09:01:56
 Time start : 17/Aug/1999 13:44:18

P.R.A.S.G. sequences :

A-12.1

A-12.2

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

CRC MULTI FRAME LOSS 0

REMOTE ALARM 0

ERRORS COUNT

CODE 0

FRAME 0

CRC 0

E_bit 0

ERROR FRMB SECONDS

CODE 10

FRAME 10

CRC 10

E_bit 10

I.U.T. final STATUS ALARM

Normal Operational Frames

Time stop : 17/Aug/1999 13:44:29

I.U.T. FM4351 COMET PMC-Sierra Inc

Test B.5.2 Frame alignment (without the test of CRC procedure)step : 13

PRA/E1 SEQUENCE GENERATOR A.04.00

Copyright Hewlett-Packard Canada Ltd. 1992-95 & CSELT Italy 1994

READY

Test Sequence created on : 17/Aug/1999 09:01:56

Time start : 17/Aug/1999 13:44:36

P.R.A.S.G. sequences :

A-13.1

A-13.2

BND

* I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

CRC MULTI FRAME LOSS 0

REMOTE ALARM 1

ERRORS COUNT

CODE 0

FRAME 0

CRC 0

E_bit 0

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



ERROR FREE SECONDS

CODE	10
FRAME	10
CRC	10
E_bit	10

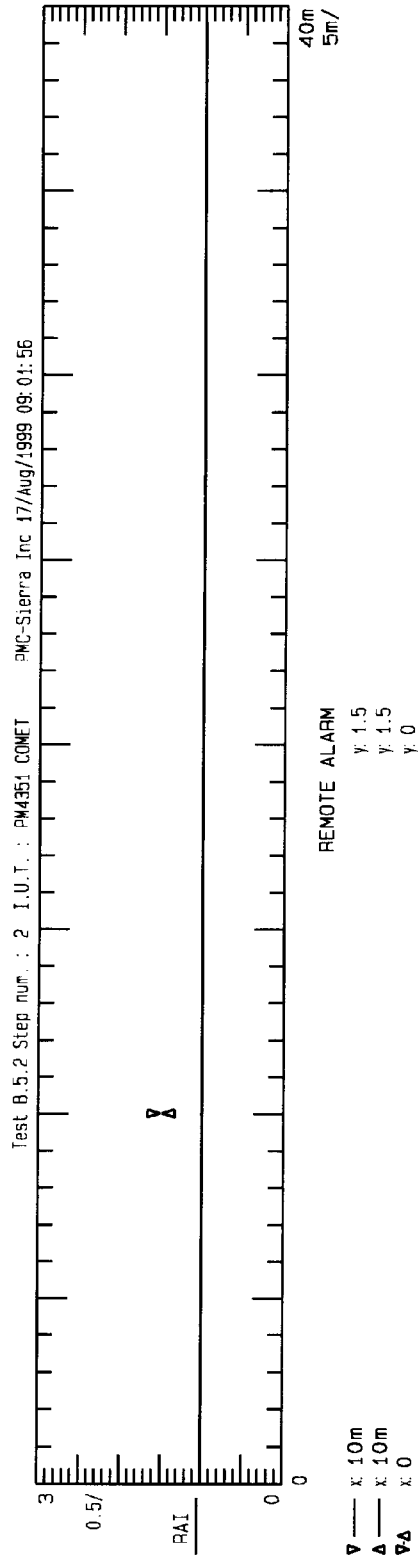
I.U.T. final STATUS ALARM

Normal Operational Frames

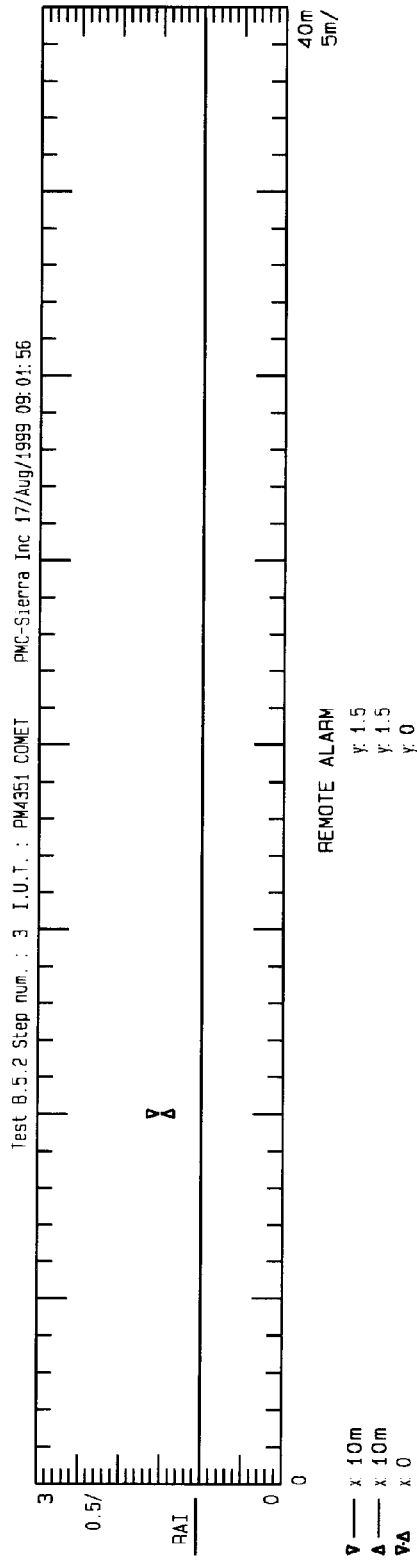
Time stop : 17/Aug/1999 13:44:47

@

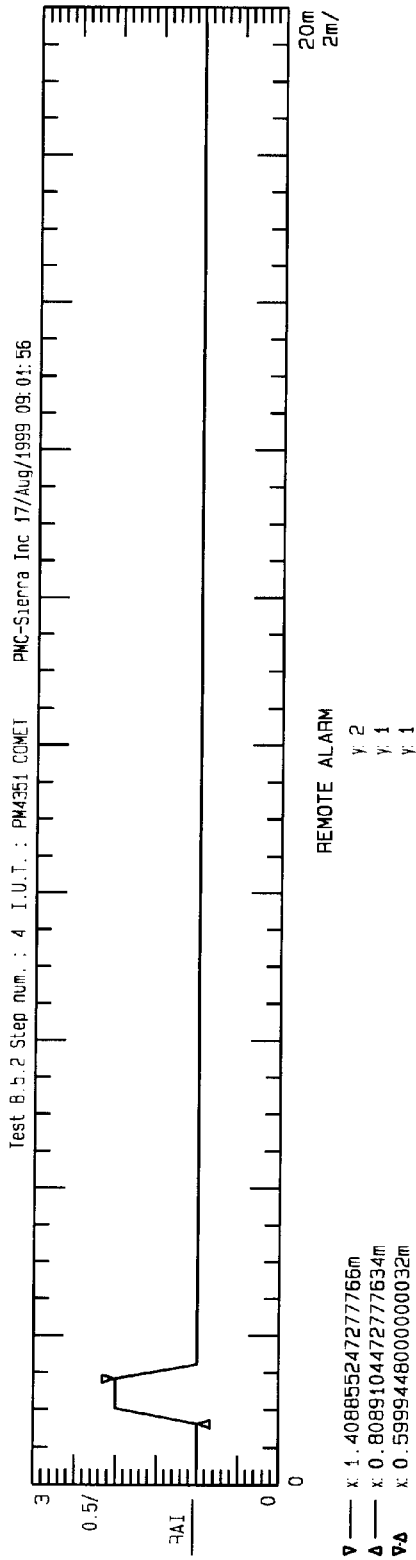
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



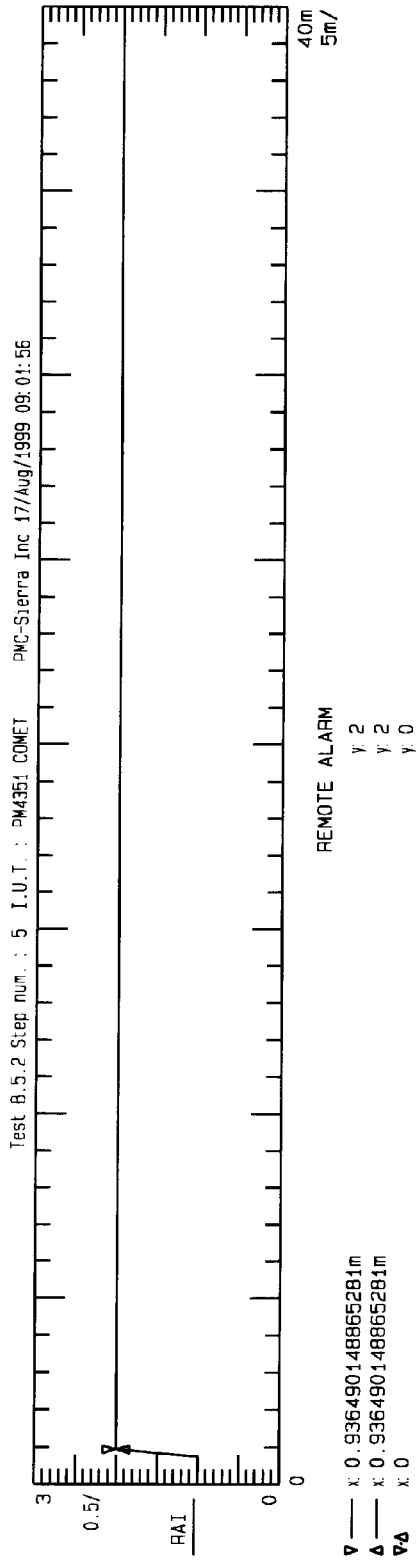
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



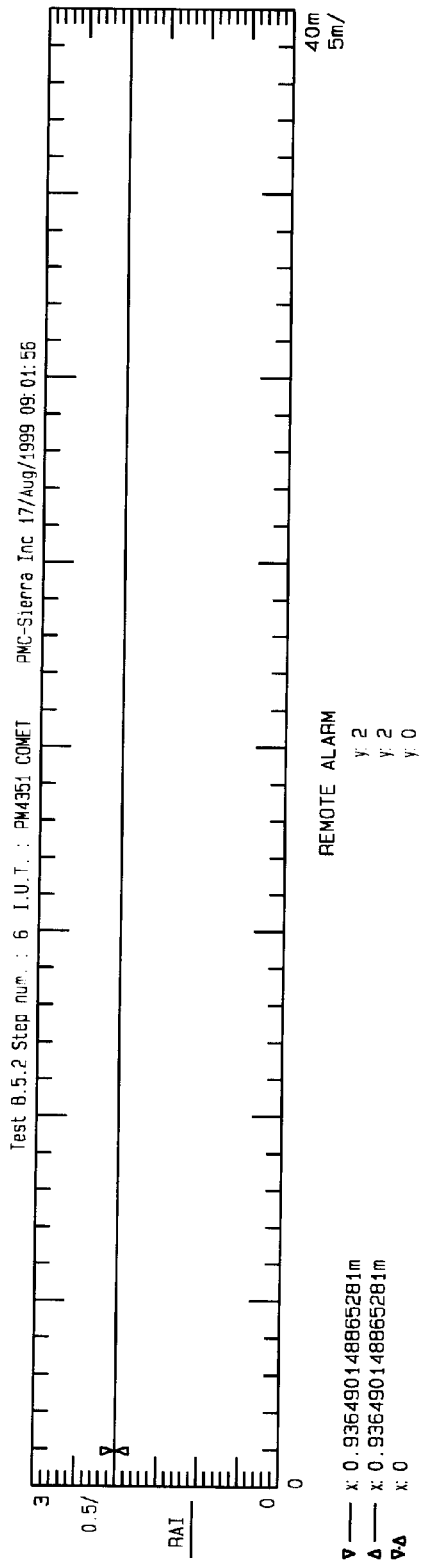
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



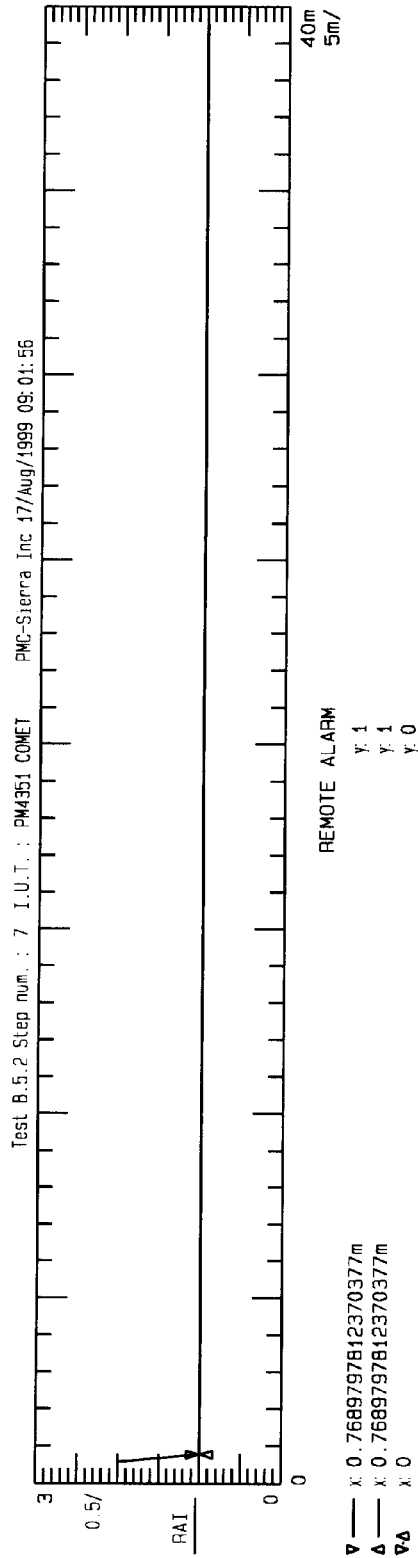
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



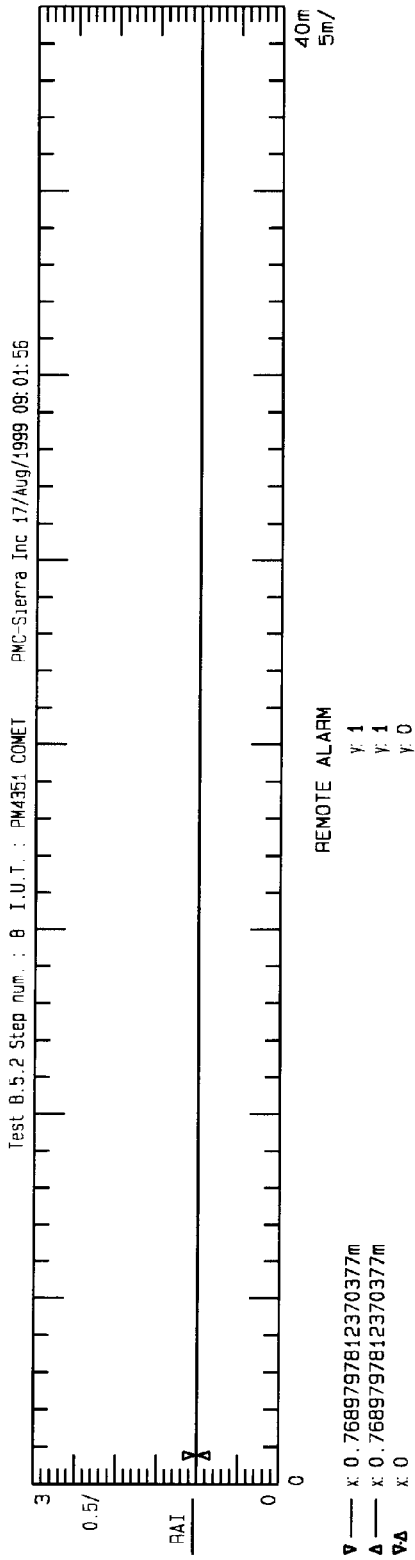
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



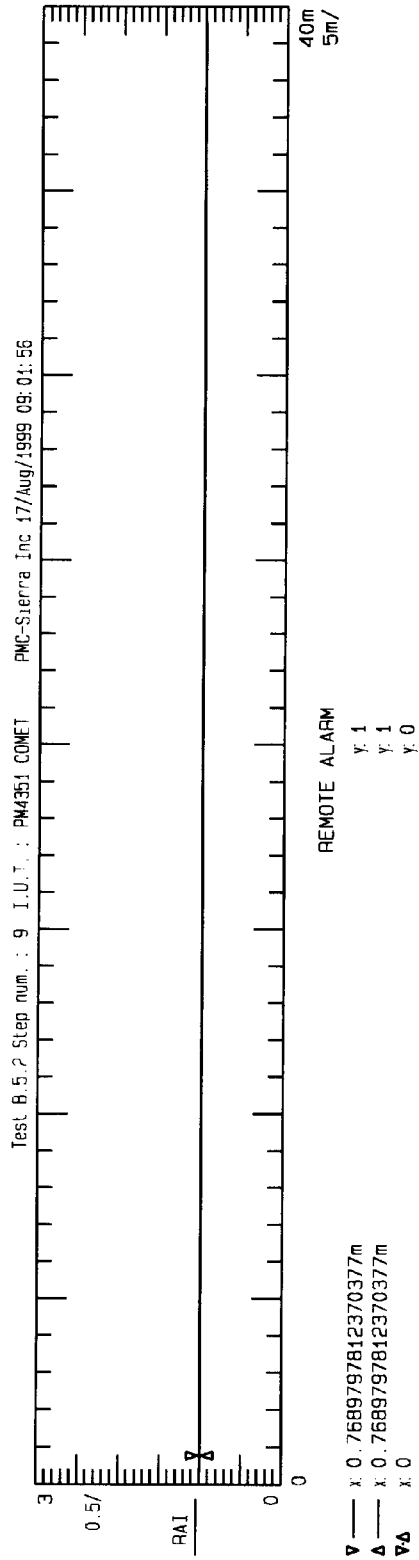
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



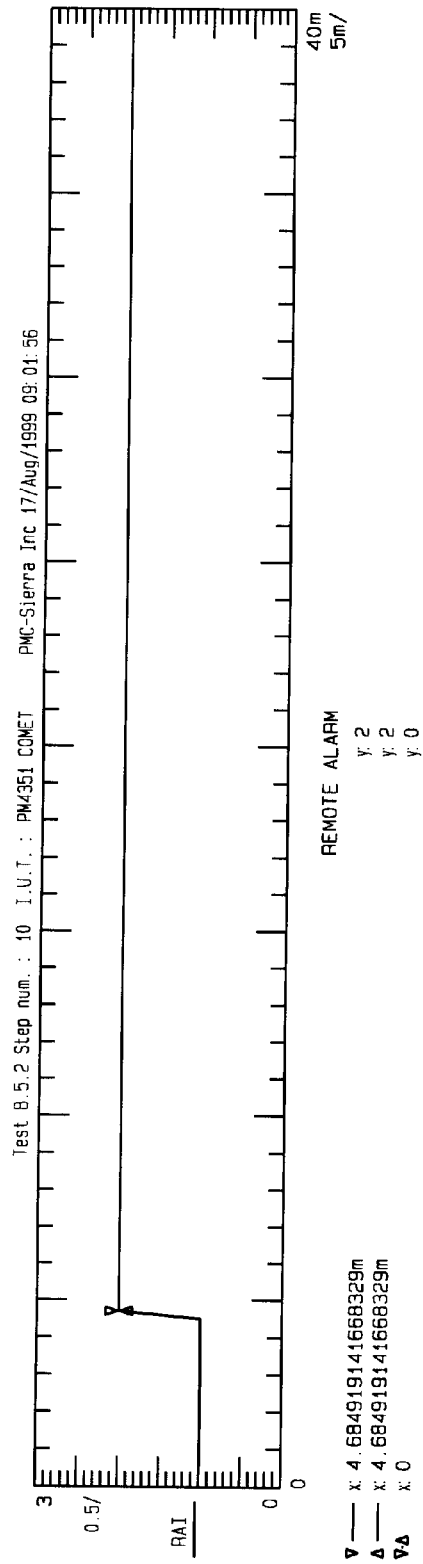
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



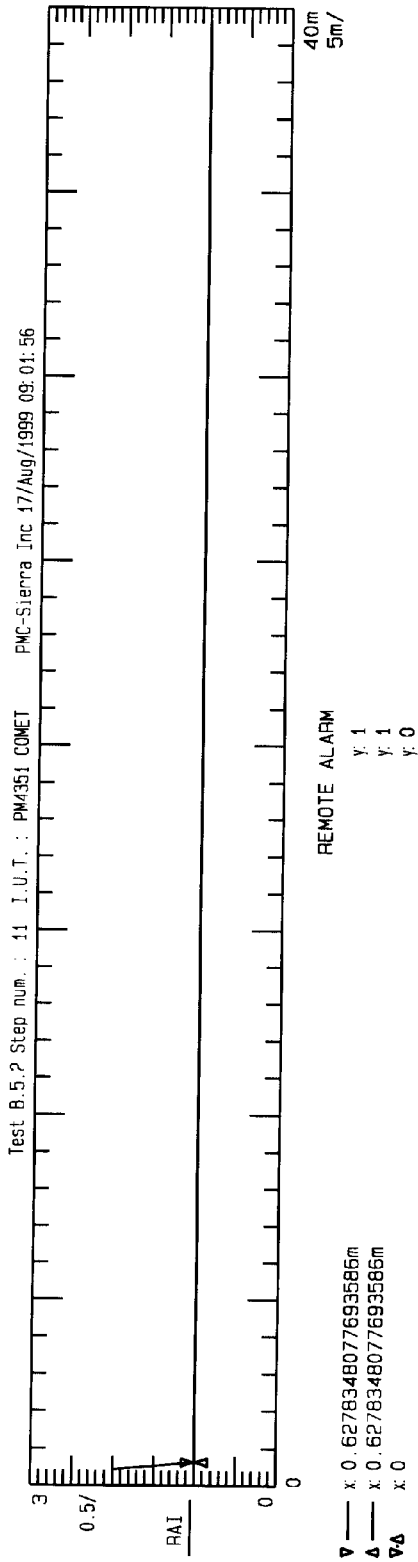
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



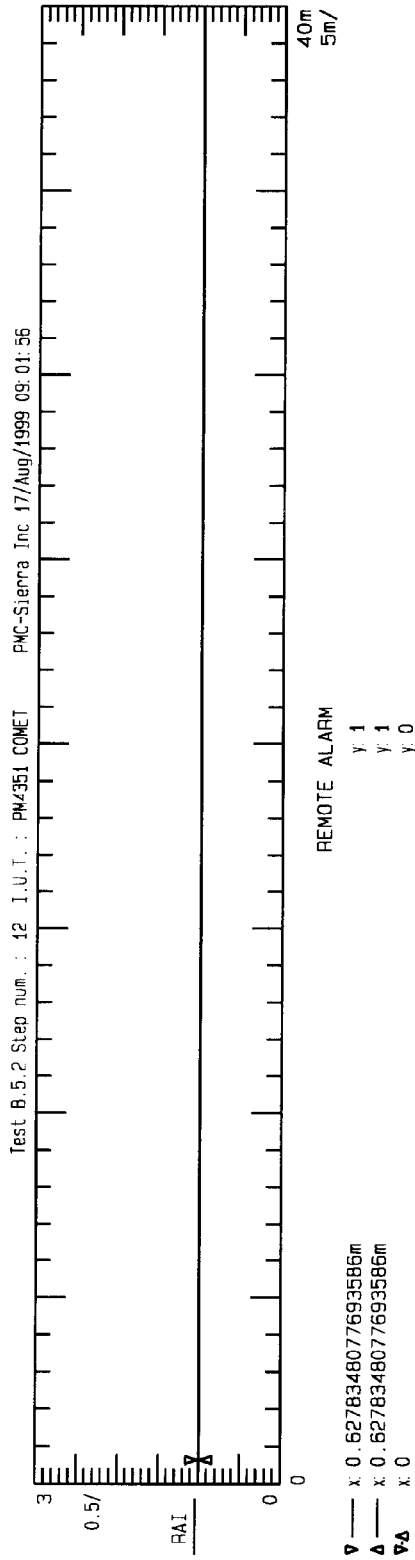
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



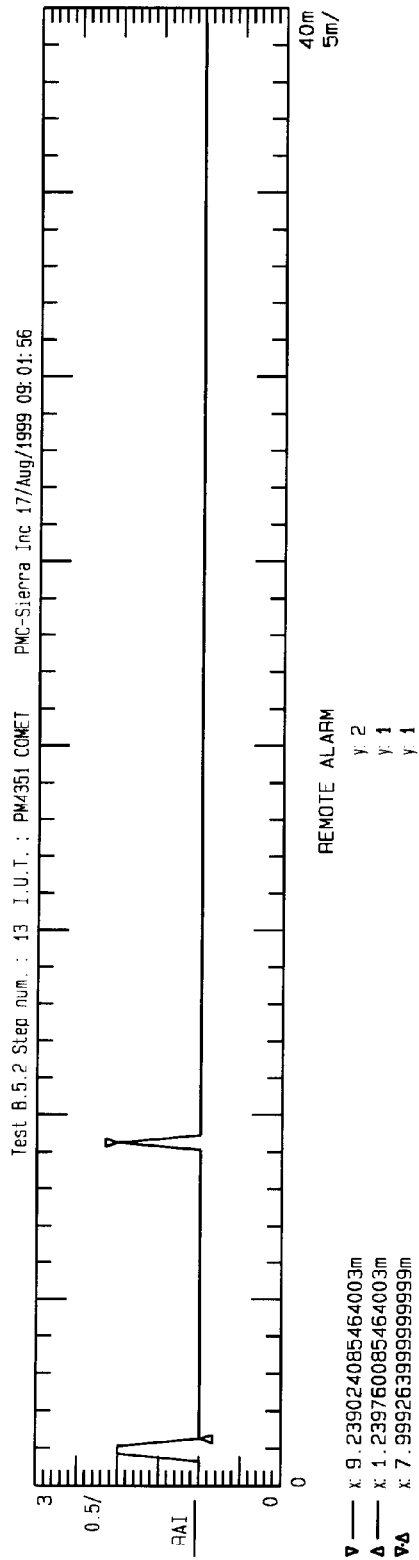
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



Data retrieved from : ./TE/CTR4/dir16/B53D

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.5.3 CRC multiframe alignment (D sequence) step n. : 1
 Test Sequence created on : 17/Aug/1999 09:01:56
 Time start : 17/Aug/1999 13:45:36
 P.R.A.S.G. sequences :

D-1.1

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

=====

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

CRC MULTI FRAME LOSS 0

REMOTE ALARM 0

=====

ERRORS COUNT

CODE 0

FRAME 0

CRC 0

E_bit 0

=====

ERROR FREE SECONDS

CODE 10

FRAME 10

CRC 10

E_bit 10

=====

I.U.T. final STATUS ALARM

Normal Operational Frames

=====

Time stop : 17/Aug/1999 13:45:47

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.5.3 CRC multiframe alignment (D sequence) step n. : 2
 Test Sequence created on : 17/Aug/1999 09:01:56
 Time start : 17/Aug/1999 13:45:52
 P.R.A.S.G. sequences :

D-2.1

D-2.2

* D-2.3

D-2.4

D-2.5

D-2.6

D-2.7

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

=====

ALARM SECONDS

POWER LOSS 0

SIGNAL LOSS 0

AIS 0

CRC MULTI FRAME LOSS 0

REMOTE ALARM 1

=====



TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

```

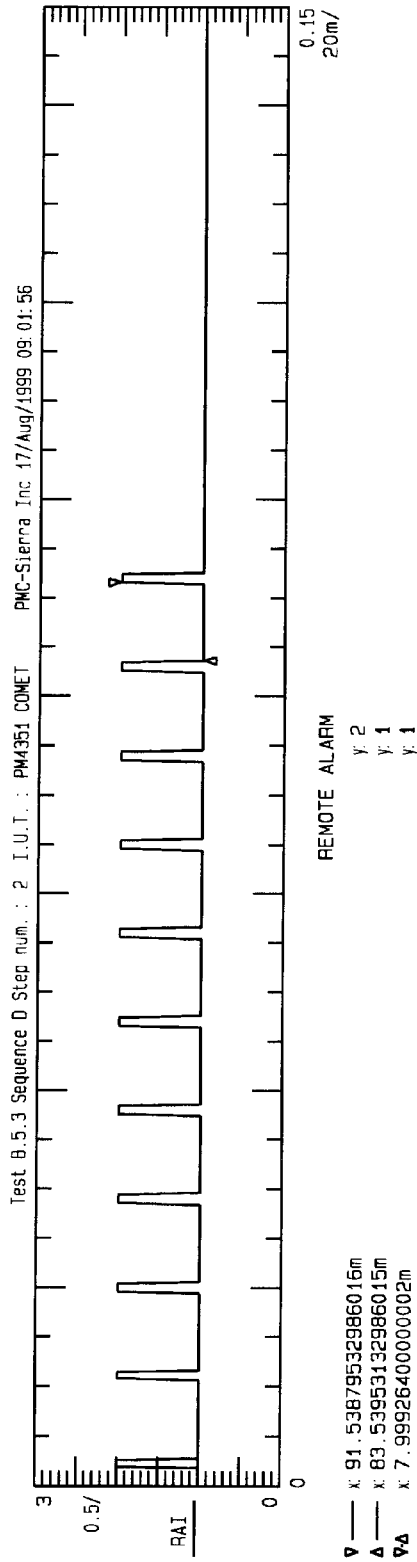
ERRORS COUNT
CODE          0
FRAME         0
CRC           0
E_bit        0
=====
ERROR FREE SECONDS
CODE          10
FRAME         10
CRC           10
E_bit        10
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop           : 17/Aug/1999 13:46:03
=====
I.U.T.  PM4351 COMET   PMC-Sierra Inc
Test   : B.5.3      CRC multiframe alignment (D sequence) step n. : 3
Test Sequence created on : 17/Aug/1999 09:01:56
Time start           : 17/Aug/1999 13:46:10
P.R.A.S.G. sequences :
D-3.1
D-3.2
LOOP
I.U.T.  SIGNAL ANALYSIS
TEST PERIOD          10 s
=====
ALARM SECONDS
POWER LOSS           0
SIGNAL LOSS          0
AIS                  0
CRC MULTI FRAME LOSS 0
REMOTE ALARM         10
=====
ERRORS COUNT
CODE          0
FRAME         0
CRC           0
E_bit        0
=====
ERROR FREE SECONDS
CODE          10
FRAME         10
CRC           10
E_bit        10
=====
I.U.T. final STATUS ALARM
REMOTE ALARM
=====
Time stop           : 17/Aug/1999 13:46:21
=====
I.U.T.  PM4351 COMET   PMC-Sierra Inc
Test   : B.5.3      CRC multiframe alignment (D sequence) step n. : 4
Test Sequence created on : 17/Aug/1999 09:01:56
Time start           : 17/Aug/1999 13:46:29
P.R.A.S.G. sequences :
D-4.1
D-4.2
D-4.3
    
```

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

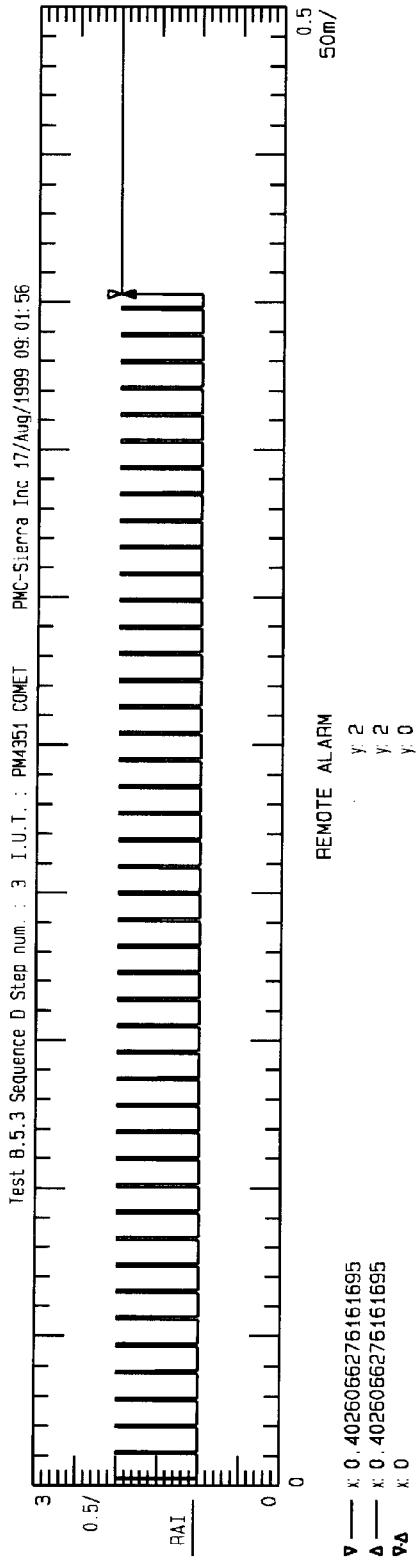


```
D-4.4
D-4.5
END
I.U.T. SIGNAL ANALYSIS
TEST PERIOD          10 s
=====
ALARM SECONDS
POWER LOSS           0
SIGNAL LOSS          0
AIS                  0
CRC MULTI FRAME LOSS 0
REMOTE ALARM         1
=====
ERRORS COUNT
CODE                 0
FRAME                0
CRC                  0
E_bit                0
=====
ERROR FRBE SECONDS
CODE                 10
FRAME                10
CRC                  10
E_bit                10
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop             : 17/Aug/1999 13:46:39
-----
@
```

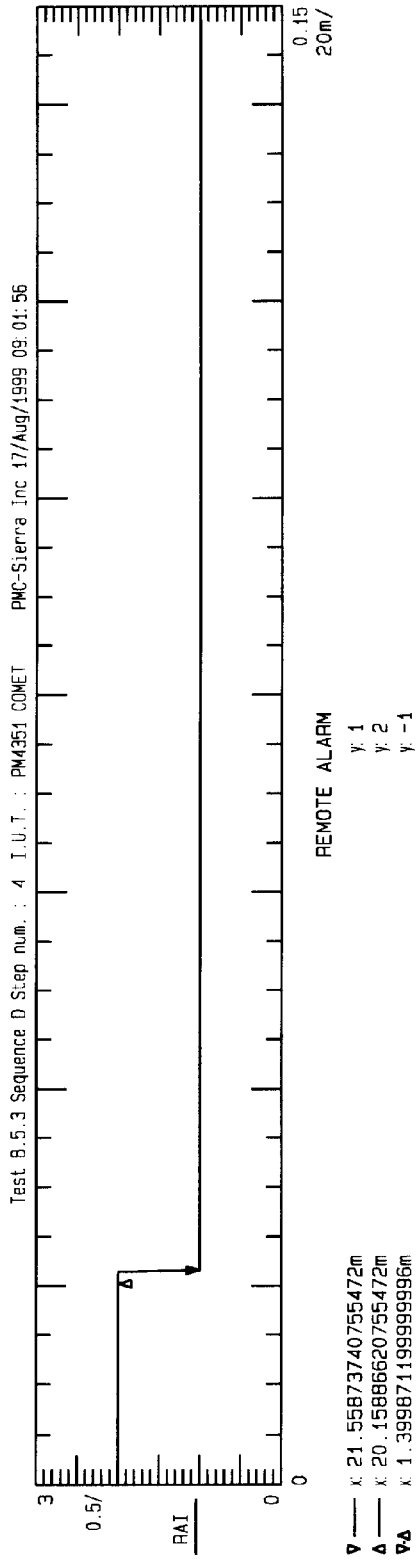
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873





TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

Data retrieved from : ./TE/CTR4/dir22/B53B

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.5.3 CRC multiframe alignment (ITTAB note 75 applied) step n. : 1
 Test Sequence created on : 17/Aug/1999 16:39:15
 Time start : 17/Aug/1999 16:40:20
 P.R.A.S.G. sequences :

D-1.1

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 0

ERRORS COUNT

CODE 0
 FRAME 0
 CRC 0
 E_bit 0

ERROR FREE SECONDS

CODE 10
 FRAME 10
 CRC 10
 E_bit 10

I.U.T. final STATUS ALARM

Normal Operational Frames

Time stop : 17/Aug/1999 16:40:30

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.5.3 CRC multiframe alignment (ITTAB note 75 applied) step n. : 2
 Test Sequence created on : 17/Aug/1999 16:39:15
 Time start : 17/Aug/1999 16:40:36
 P.R.A.S.G. sequences :

D-2.1

D-2.2

* D-2.3

D-2.4

D-2.5

D-2.6

D-2.7

LOOP

I.U.T. SIGNAL ANALYSIS

TEST PERIOD 10 s

ALARM SECONDS

POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 1

TUV Telecom Services, Inc.
 1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
 Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



ERRORS COUNT
 CODE 0
 FRAME 0
 CRC 0
 E_bit 99

=====

ERROR FREE SECONDS
 CODE 10
 FRAME 10
 CRC 10
 E_bit 9

=====

I.U.T. final STATUS ALARM
 Normal Operational Frames
 =====

Time stop : 17/Aug/1999 16:40:46

I.U.T. PM4351 COMET PMC-Sierra Inc
 Test : B.5.3 CRC multiframe alignment (ITTAB note 75 applied) step n. : 3
 Test Sequence created on : 17/Aug/1999 16:39:15
 Time start : 17/Aug/1999 16:41:04
 P.R.A.S.G. sequences :

D-3.1
 D-3.2
 LOOP

I.U.T. SIGNAL ANALYSIS
 TEST PERIOD 10 s

=====

ALARM SECONDS
 POWER LOSS 0
 SIGNAL LOSS 0
 AIS 0
 CRC MULTI FRAME LOSS 0
 REMOTE ALARM 1

=====

ERRORS COUNT
 CODE 0
 FRAME 0
 CRC 0
 E_bit 9660

=====

ERROR FREE SECONDS
 CODE 10
 FRAME 10
 * CRC 10
 E_bit 0

=====

I.U.T. final STATUS ALARM
 ERRORS
 UNAVAILABLE
 =====

Time stop : 17/Aug/1999 16:41:15

I.U.T. PM4351 COMBT PMC-Sierra Inc
 Test : B.5.3 CRC multiframe alignment (ITTAB note 75 applied) step n. : 4
 Test Sequence created on : 17/Aug/1999 16:39:15
 Time start : 17/Aug/1999 16:41:33
 P.R.A.S.G. sequences :

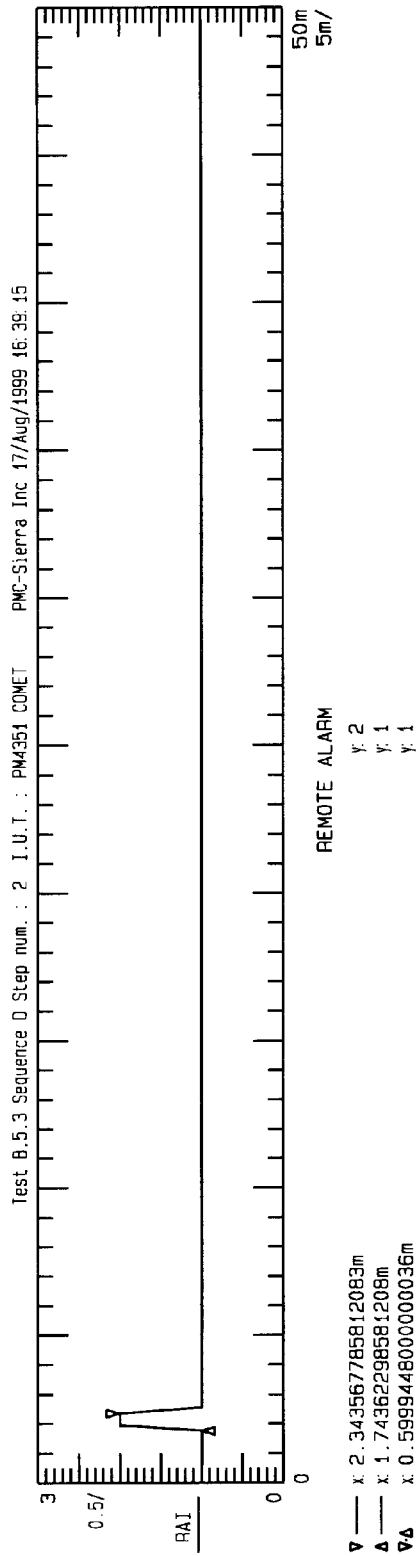
D-4.1
 D-4.2

TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873

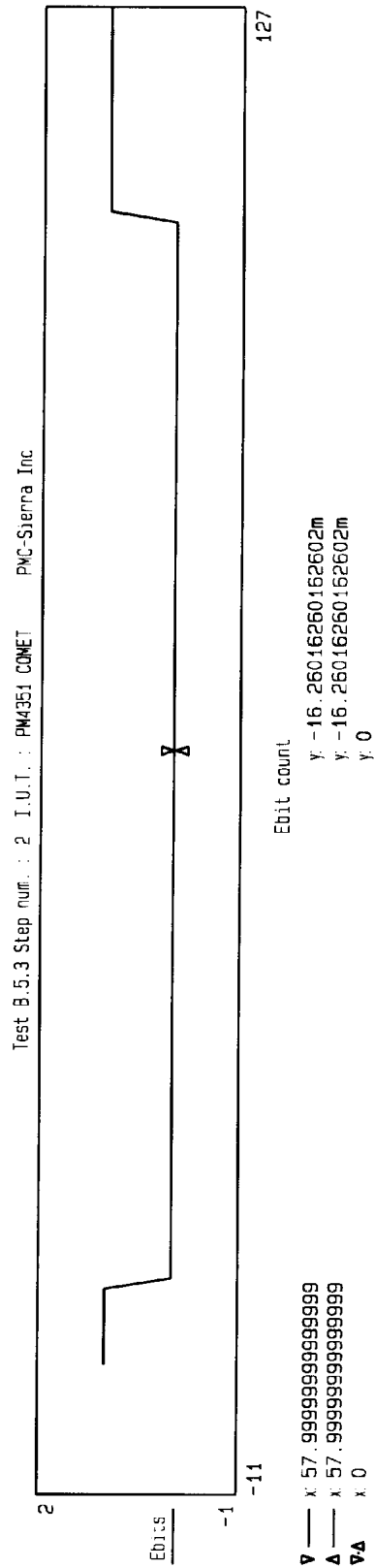


```
D-4.3
D-4.4
D-4.5
END
I.U.T. SIGNAL ANALYSIS
TEST PERIOD      10 s
=====
ALARM SECONDS
POWER LOSS      0
SIGNAL LOSS     0
AIS             0
CRC MULTI FRAME LOSS 0
REMOTE ALARM    0
=====
ERRORS COUNT
CODE            0
FRAME          0
CRC            0
E_bit          371
=====
ERROR FREE SECONDS
CODE           10
FRAME         10
CRC           10
E_bit         9
=====
I.U.T. final STATUS ALARM
Normal Operational Frames
=====
Time stop      : 17/Aug/1999 16:41:43
-----
@
```

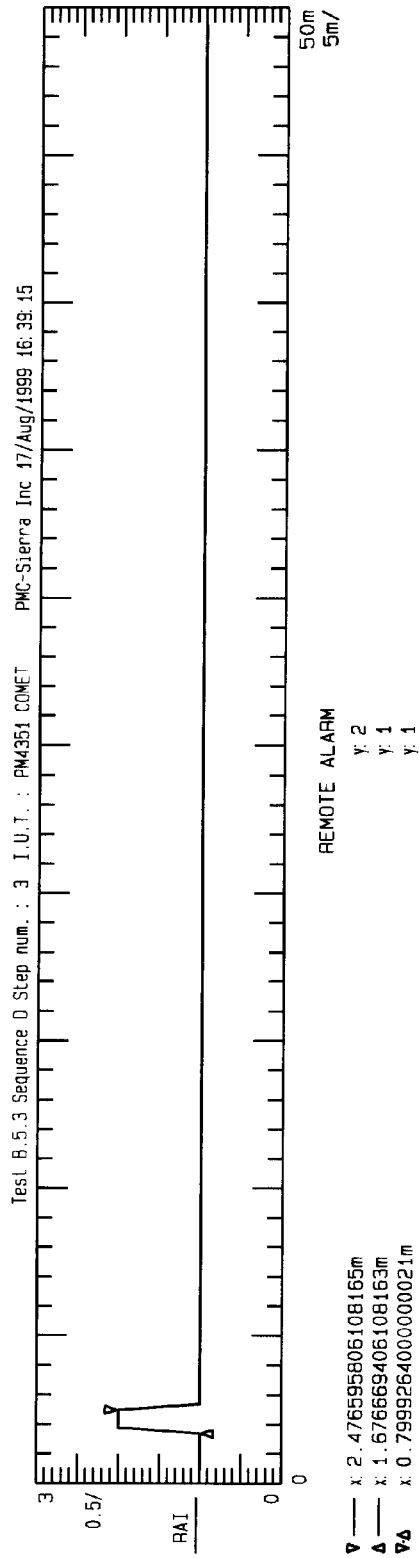
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



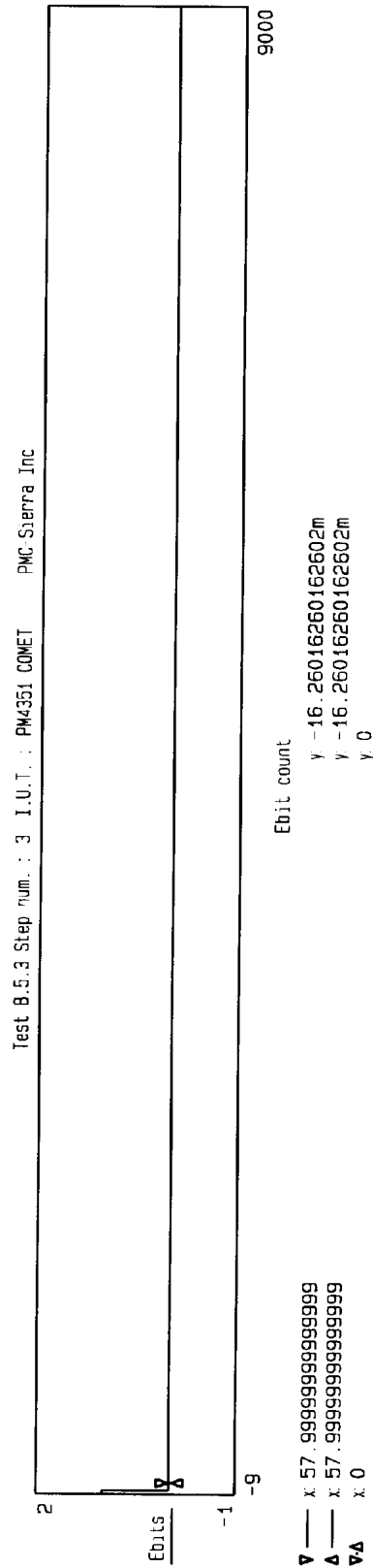
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



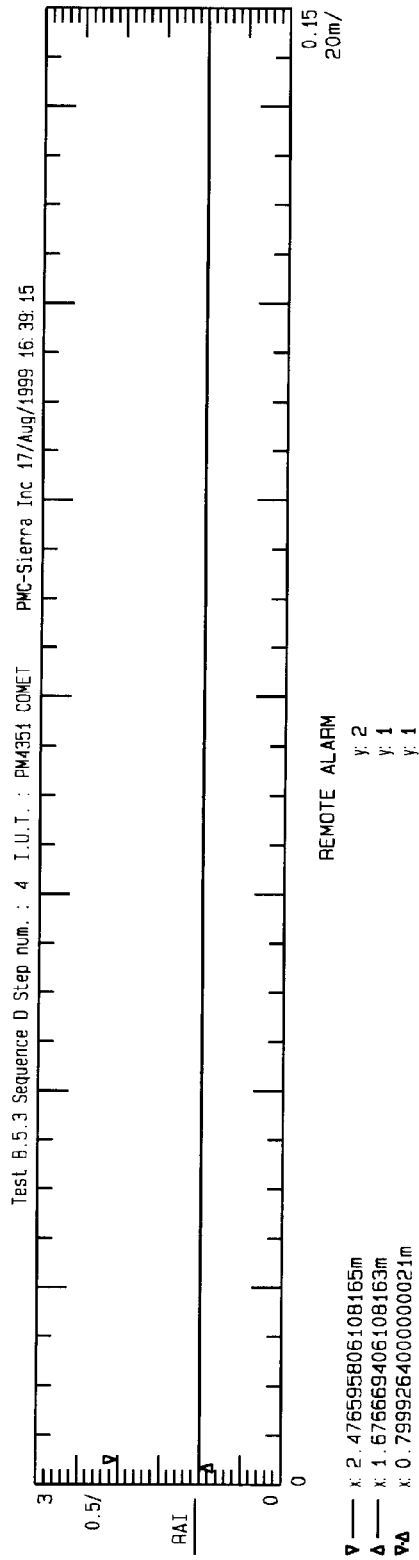
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



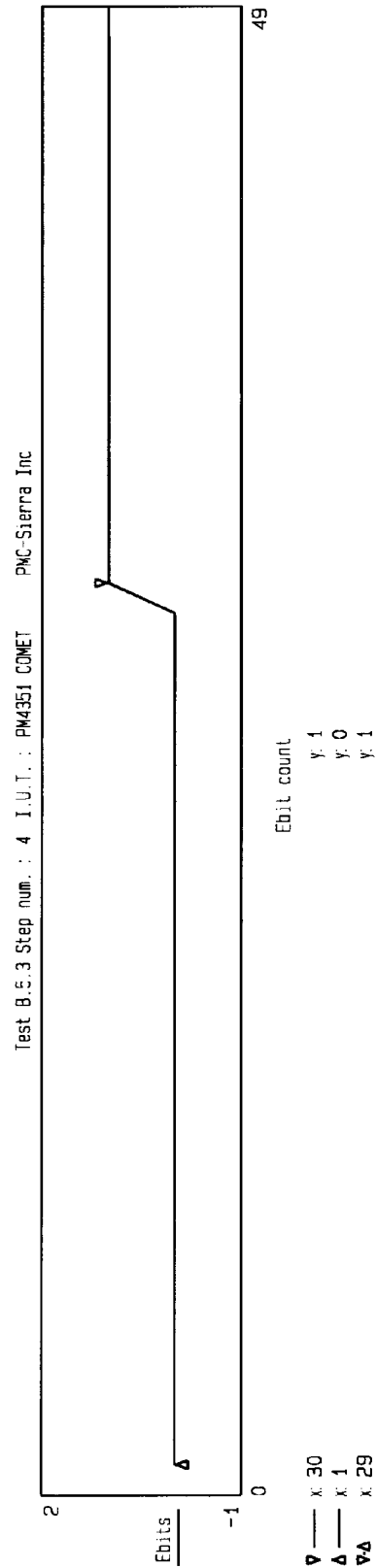
TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



TUV Telecom Services, Inc.
1775 Old Highway 8 NW Suite 107, St. Paul, MN 55112
Tel. +1 (651) 639-0775 Fax. +1 (651) 639-0873



*