

Nemko Test Report: 4L0570RUS1

Applicant: Andrew Corporation
108 Rand Park Drive
Garner, NC 27529

**Equipment Under Test:
(E.U.T.)** TFAH 85/19

In Accordance With: **FCC Part 22, Subpart H**
Cellular Band Repeaters

Tested By: Nemko Dallas Inc.
802 N. Kealy
Lewisville, TX
75057-3136

Authorized By:



Tom Tidwell, Frontline Group Manager

Date: 9/1/04

Total Number of Pages: 53

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EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Section 1. Summary of Test Results

Manufacturer: [Andrew Corporation](#)

Model No.: [TFAH 85/19](#)

Serial No.: [043003041](#)

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 22, Subpart H.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE. NONE

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EQUIPMENT: TFAH 85/19

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Summary Of Test Data

NAME OF TEST	PARA. NO.	SPEC.	RESULT
RF Power Output	22.913(a)	500W ERP	Complies
Occupied Bandwidth	22.917(c)	Input/Output	Complies
Spurious Emissions at Antenna Terminals	22.917	-13 dBm	Complies
Field Strength of Spurious Emissions	22.917	-13 dBm E.I.R.P.	Complies
Frequency Stability	22.355	1.5 ppm	NA

Footnotes:**Measurement uncertainty for each test configuration is expressed to 95% probability.**

.

EQUIPMENT: TFAH 85/19

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Section 2. General Equipment Specification

Supply Voltage Input:	115 Vac																				
Frequency Range:	Downlink:	869 – 894 MHz																			
Frequency Range:	Uplink:	NA																			
Type of Modulation and Designator:	CDMA (F9W) ☒	GSM (GXW) ☒	NADC (D7W) ☒	EDGE (D7W) ☒	AMPS (F8W, F1D) ☒																
Output Impedance:	50 ohms																				
RF Output (Rated):	Downlink:	<table border="1"> <thead> <tr> <th>Modulation</th> <th>1 Carrier</th> <th>2 Carriers</th> </tr> </thead> <tbody> <tr> <td>Analog</td> <td>37</td> <td>27</td> </tr> <tr> <td>CDMA</td> <td>31</td> <td>24.5</td> </tr> <tr> <td>GSM</td> <td>37</td> <td>27</td> </tr> <tr> <td>EDGE</td> <td>33.5</td> <td>25</td> </tr> <tr> <td>TDMA</td> <td>34.5</td> <td>25.5</td> </tr> </tbody> </table>	Modulation	1 Carrier	2 Carriers	Analog	37	27	CDMA	31	24.5	GSM	37	27	EDGE	33.5	25	TDMA	34.5	25.5	
Modulation	1 Carrier	2 Carriers																			
Analog	37	27																			
CDMA	31	24.5																			
GSM	37	27																			
EDGE	33.5	25																			
TDMA	34.5	25.5																			
Frequency Translation:	F1-F1 ☒	F1-F2 ☐	N/A ☐																		
Band Selection:	Software ☐	Duplexer Change ☐	Fullband Coverage ☒																		

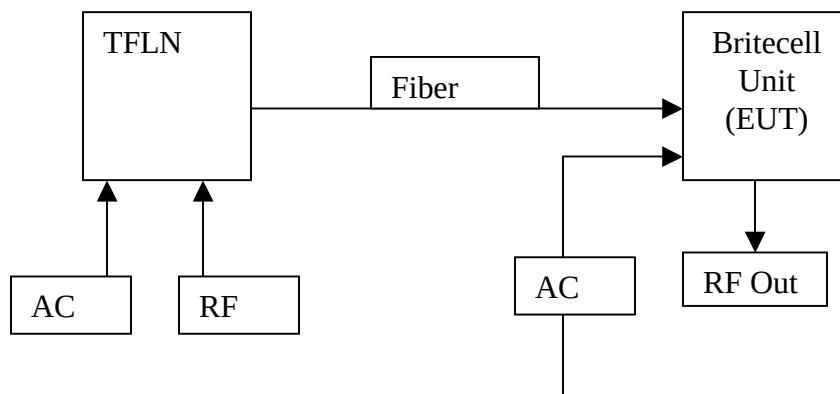
EQUIPMENT: TFAH 85/19

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Description of Operation

TFAH 85/19 is a fiber based tri-band repeater operating in the 800 MHz SMR, the 800 MHz cellular and the 1900 MHz PCS bands

System Diagram



EQUIPMENT: TFAH 85/19

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Section 3. RF Power Output

NAME OF TEST: RF Power Output	PARA. NO.: 2.1046
TESTED BY: David Light	DATE: 8/30/04

Test Results: Complies.**Test Data:**

Direction	Modulation Type	Per Channel Power Output (dBm)	Composite Power Output (dBm)
Downlink	AMPS	27	30
Downlink	CDMA	24.5	27.5
Downlink	GSM	27	30
Downlink	NADC	25	28
Downlink	CDPD	25.5	28.5

Equipment Used: 1036-1065-1604-1629**Measurement Uncertainty:** +/- 1.7 dB**Temperature:** 25 °C**Relative Humidity:** 40 %

EQUIPMENT: TFAH 85/19

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Section 4. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 2.1049
TESTED BY: David Light	DATE: 8/30/04

Test Results: [Complies.](#)

Test Data: [See attached plots](#)

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Test Data – Occupied Bandwidth



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Fax: (972) 436-2667

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Data Plot		Occupied Bandwidth	
Page 1 of 2		Complete <u>X</u>	
Job No.:	4L0570	Date:	8/30/2004
Specification:	PT22	Temperature(°C):	25
Tested By:	David Light	Relative Humidity(%):	40
E.U.T.:	CELL BAND AMPLIFIER		
Configuration:	TX		
Sample Number:	1		
Location:	Lab 1	RBW:	Refer to plots
Detector Type:	Peak	VBW:	Refer to plots
Measurement Distance: NA m			
Test Equipment Used			
Antenna:		Directional Coupler:	
Pre-Amp:		Cable #1:	1629
Filter:		Cable #2:	
Receiver:	1036	Cable #3:	
Attenuator #1:	1065	Cable #4:	
Attenuator #2:	1604	Mixer:	
Additional equipment used:			
Measurement Uncertainty:	+/-1.7 dB		
Date: 30.AUG.2004 14:40:04			
Notes: ANALOG OUTPUT			
MAX POWER 37 dBm			
2 kHz Tone - 2.5 kHz Deviation			

EQUIPMENT: TFAH 85/19

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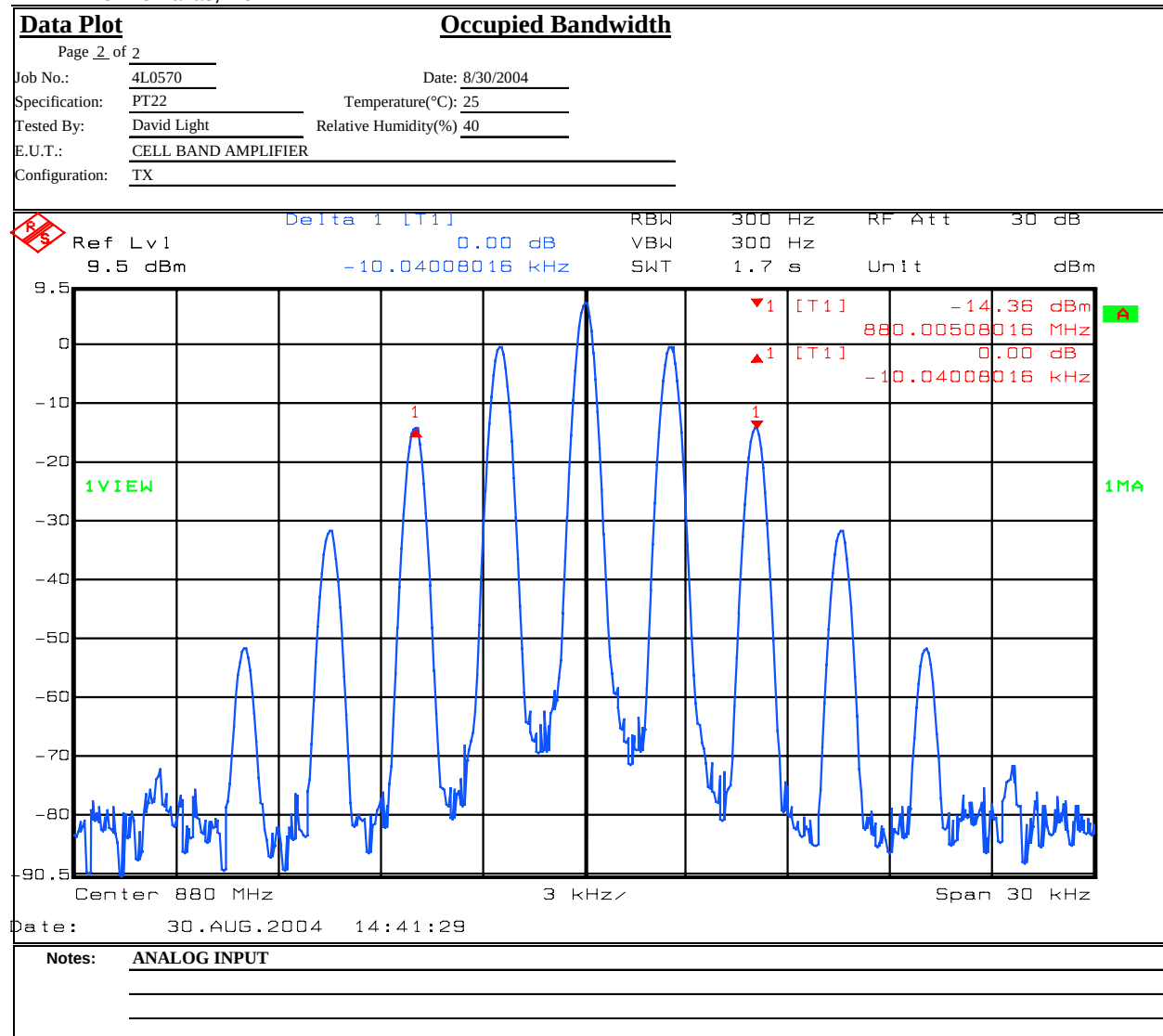
Test Data – Occupied Bandwidth



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Data Plot		Occupied Bandwidth	
Page 1 of 2		Complete <u>X</u>	
Job No.:	4L0570	Date:	8/30/2004
Specification:	PT22	Temperature(°C):	25
Tested By:	David Light	Relative Humidity(%):	40
E.U.T.:	CELL BAND AMPLIFIER		
Configuration:	TX		
Sample Number:	1		
Location:	Lab 1	RBW:	30 kHz
Detector Type:	Peak	VBW:	30 kHz
Measurement Distance:		NA m	
Test Equipment Used			
Antenna:		Directional Coupler:	
Pre-Amp:		Cable #1:	1629
Filter:		Cable #2:	
Receiver:	1036	Cable #3:	
Attenuator #1:	1065	Cable #4:	
Attenuator #2:	1604	Mixer:	
Additional equipment used:			
Measurement Uncertainty:	+/-1.7 dB		
RS Ref Lvl 40 dBm RBW 30 kHz VBW 30 kHz SWT 14 ms RF Att 20 dB Mixer -10 dBm Unit dBm			
30.5 dB Offset 1VIEW 1MA Center 880 MHz 500 kHz Span 5 MHz			
Date: 30.AUG.2004 15:00:28			
Notes: CDMA OUTPUT MAX POWER 31 dBm			

EQUIPMENT: TFAH 85/19

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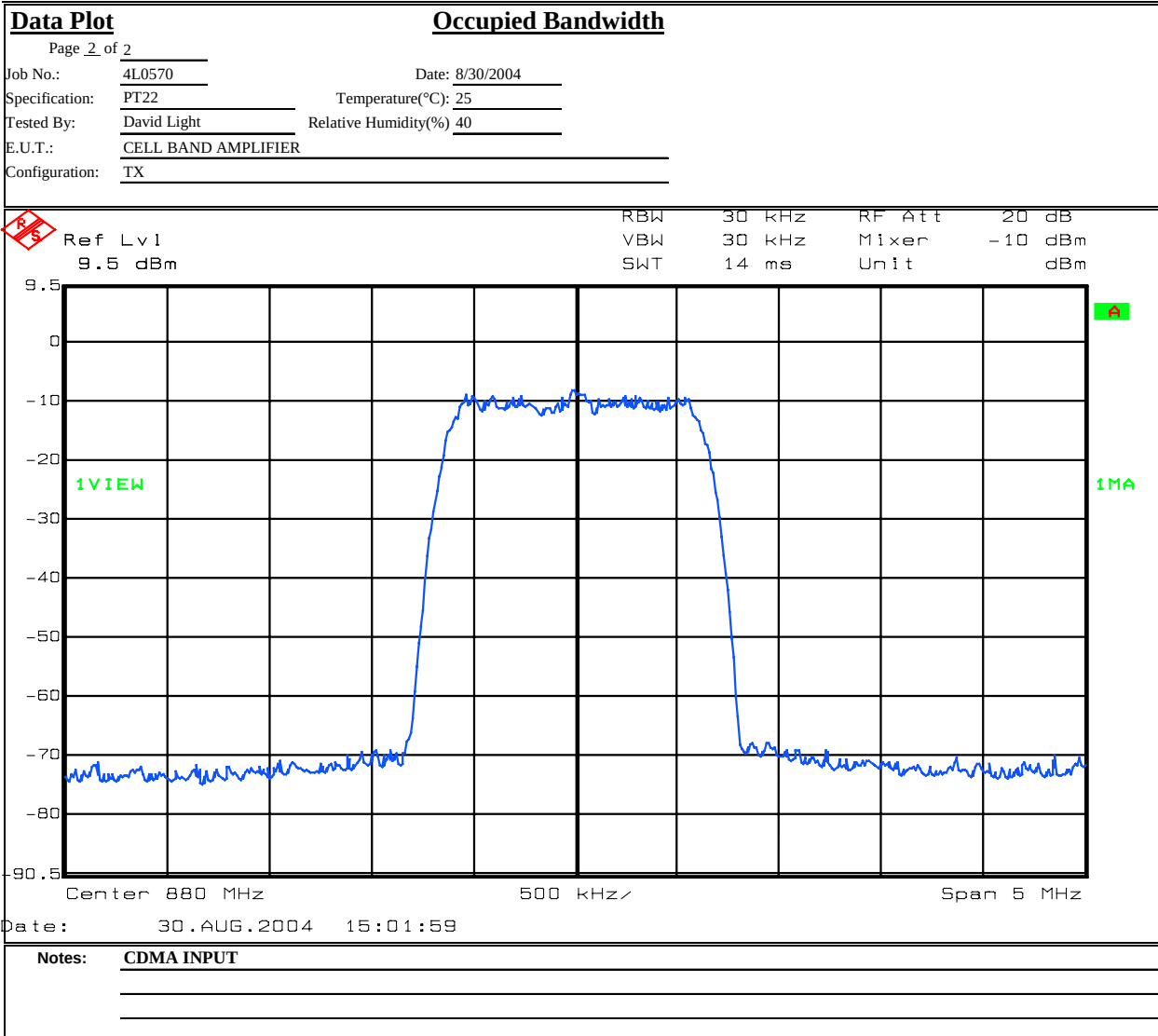
Test Data – Occupied Bandwidth



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Data Plot		Occupied Bandwidth	
Page 1 of 2		Complete <u>X</u>	
Job No.:	4L0570	Date:	8/30/2004
Specification:	PT22	Temperature(°C):	25
Tested By:	David Light	Relative Humidity(%):	40
E.U.T.:	CELL BAND AMPLIFIER		
Configuration:	TX		
Sample Number:	1		
Location:	Lab 1	RBW: Refer to plots	Measurement
Detector Type:	Peak	VBW: Refer to plots	Distance: <u>NA</u> m
Test Equipment Used			
Antenna:		Directional Coupler:	
Pre-Amp:		Cable #1:	1629
Filter:		Cable #2:	
Receiver:	1036	Cable #3:	
Attenuator #1:	1065	Cable #4:	
Attenuator #2:	1604	Mixer:	
Additional equipment used:			
Measurement Uncertainty:	+/-1.7 dB		
FS Ref Lvl 40 dBm Delta 1 [T1] 0.17 dB 288.57715431 kHz RBW 3 kHz VBW 3 kHz SWT 560 ms RF Att 20 dB Mixer -20 dBm Unit dBm 30.5 dB Offset ▼1 [T1] 3.84 dBm ▲1 [T1] 0.17 dB 879.85771543 MHz 288.57715431 kHz 1VIEW 1MA EXT Center 880 MHz 200 kHz Span 2 MHz			
Date: 31.AUG.2004 07:15:05			
Notes: GSM OUTPUT MAX POWER 37 dBm			

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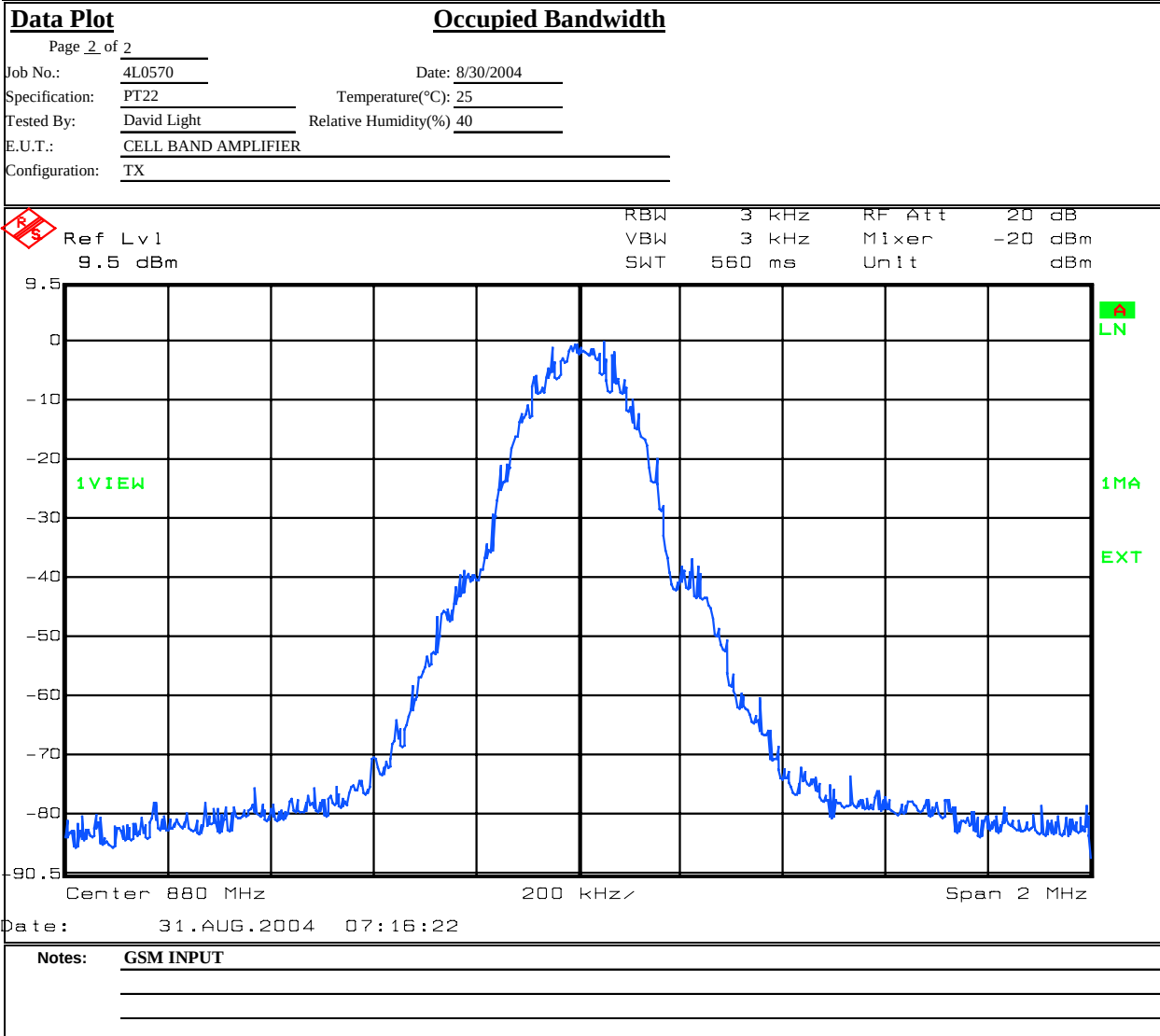
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Data Plot		Occupied Bandwidth	
Page 1 of 2		Complete <u>X</u>	
Job No.:	4L0570	Date:	8/30/2004
Specification:	PT22	Temperature(°C):	25
Tested By:	David Light	Relative Humidity(%)	40
E.U.T.:	CELL BAND AMPLIFIER		
Configuration:	TX		
Sample Number:	1		
Location:	Lab 1	RBW:	Refer to plots
Detector Type:	Peak	VBW:	Refer to plots
Measurement Distance: <u>NA</u> m			
Test Equipment Used			
Antenna:		Directional Coupler:	
Pre-Amp:		Cable #1:	1629
Filter:		Cable #2:	
Receiver:	1036	Cable #3:	
Attenuator #1:	1065	Cable #4:	
Attenuator #2:	1604	Mixer:	
Additional equipment used:			
Measurement Uncertainty:	+/-1.7 dB		
FS Ref Lvl 40 dBm Delta 1 [T1] 0.58 dB 284.56913828 kHz RBW 3 kHz VBW 3 kHz SWT 560 ms RF Att 20 dB Mixer -20 dBm Unit dBm			
30.5 dB Offset 1VIEW 40 30 20 10 0 -10 -20 -30 -40 -50 -60 ▼1 [T1] -0.85 dBm 879.85771543 MHz ▲1 [T1] 0.58 dB 284.56913828 kHz 1MA EXT Center 880 MHz 200 kHz Span 2 MHz			
Date: 31.AUG.2004 07:20:52			
Notes: EDGE OUTPUT			
MAX POWER 33.5 dBm			

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Test Report No.: 4L0570RUS1

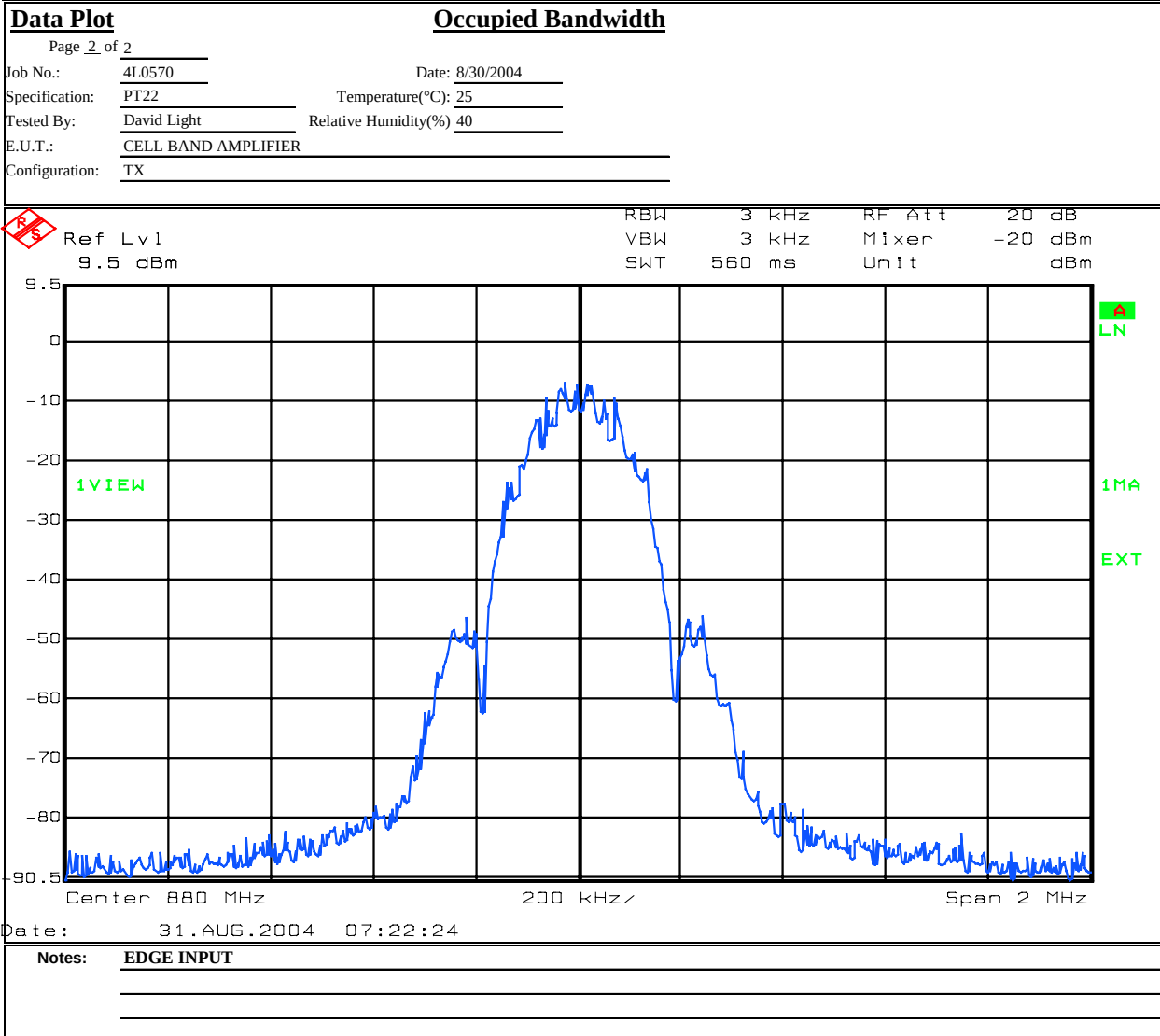
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Test Data – Occupied Bandwidth



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Data Plot		Occupied Bandwidth	
Page 1 of 2		Complete <u>X</u>	
Job No.: 4L0570	Date: 8/30/2004	Preliminary: _____	
Specification: PT22	Temperature(°C): 25		
Tested By: David Light	Relative Humidity(%): 40		
E.U.T.: CELL BAND AMPLIFIER			
Configuration: TX			
Sample Number: 1			
Location: Lab 1	RBW: Refer to plots	Measurement	
Detector Type: Peak	VBW: Refer to plots	Distance: NA m	
Test Equipment Used			
Antenna: _____	Directional Coupler: _____		
Pre-Amp: _____	Cable #1: 1629		
Filter: _____	Cable #2: _____		
Receiver: 1036	Cable #3: _____		
Attenuator #1: 1065	Cable #4: _____		
Attenuator #2: 1604	Mixer: _____		
Additional equipment used: _____			
Measurement Uncertainty: +/-1.7 dB			
Date: 31.AUG.2004 06:45:20			
Notes: TDMA OUTPUT			
MAX POWER 34.5 dBm			

EQUIPMENT: TFAH 85/19

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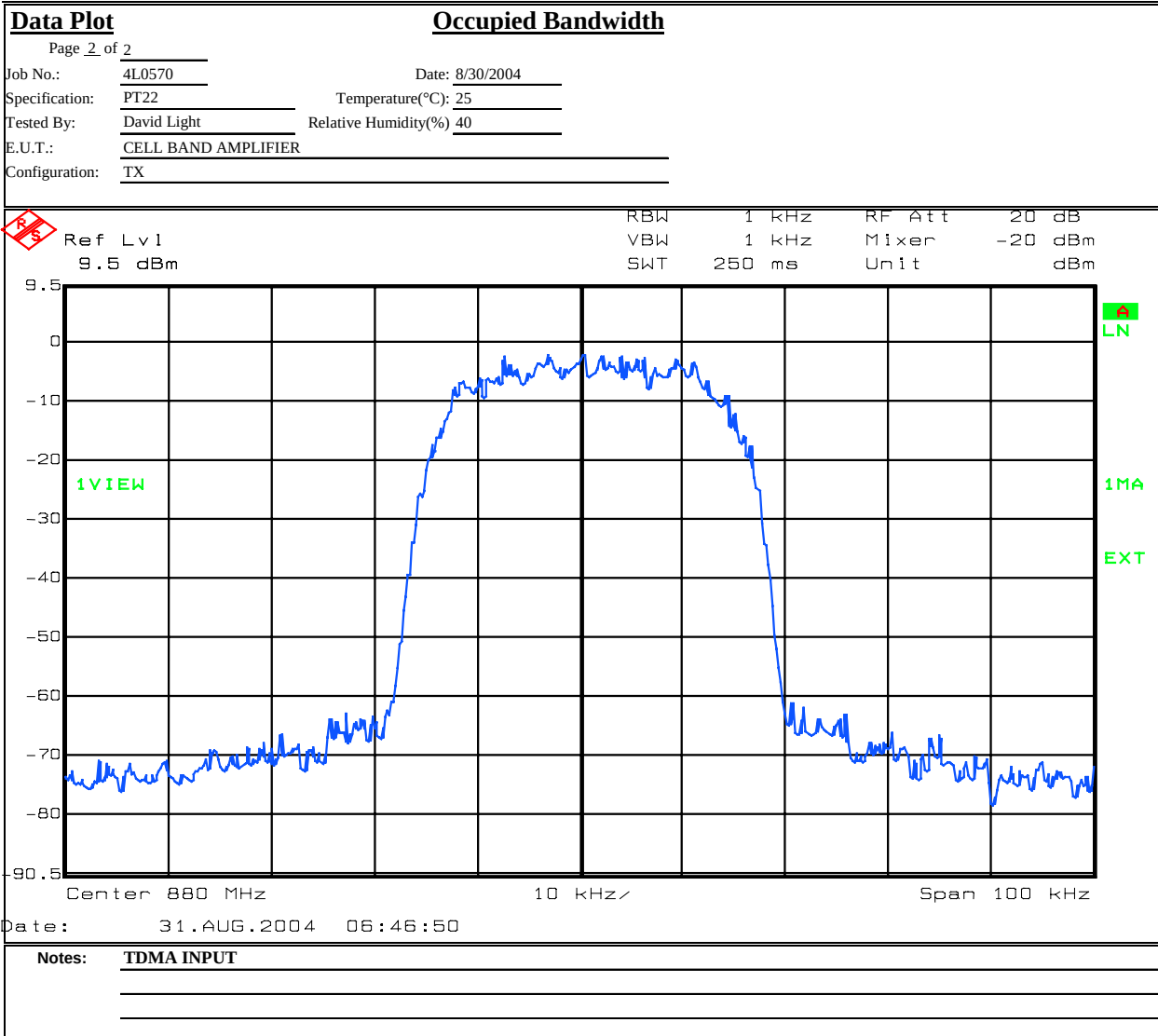
Test Data – Occupied Bandwidth



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EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Section 5. Spurious Emissions at Antenna Terminals

NAME OF TEST: Spurious Emissions @ Antenna Terminals	PARA. NO.: 2.1051
TESTED BY: David Light	DATE: 8/30/04

Test Results: [Complies.](#)

Test Data: [See attached plots](#)

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Test Data – Spurious Emissions at Antenna Terminals



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Data Plot		Spurious Emissions at Antenna Terminals	
Page 1 of 3		Complete <u>X</u>	
Job No.:	4L0570	Date:	8/30/2004
Specification:	PT22	Temperature(°C):	25
Tested By:	David Light	Relative Humidity(%)	40
E.U.T.:	CELL BAND AMPLIFIER		
Configuration:	TX		
Sample Number:	1		
Location:	Lab 1	RBW: Refer to plots	Measurement
Detector Type:	Peak	VBW: Refer to plots	Distance: <u>NA</u> m
Test Equipment Used			
Antenna:		Directional Coupler:	
Pre-Amp:		Cable #1:	1629
Filter:		Cable #2:	
Receiver:	1036	Cable #3:	
Attenuator #1:	1065	Cable #4:	
Attenuator #2:	1604	Mixer:	
Additional equipment used:			
Measurement Uncertainty:	+/-1.7 dB		
Ref Lvl 40 dBm			
Marker 1 [T1] 27.00 dBm			
869.03857715 MHz			
RBW 300 Hz			
VBW 300 Hz			
SWT 28 s			
Unit dBm			
30.5 dB Offset			
LIMIT CHECK : PASSED			
1VIEW			
1MA			
Start 868.75 MHz			
50 kHz			
Stop 869.25 MHz			
Date: 30.AUG.2004 14:48:41			
Notes: LOWER BAND EDGE			
2 CHANNELS AT 27 dBm EACH			
ANALOG			

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

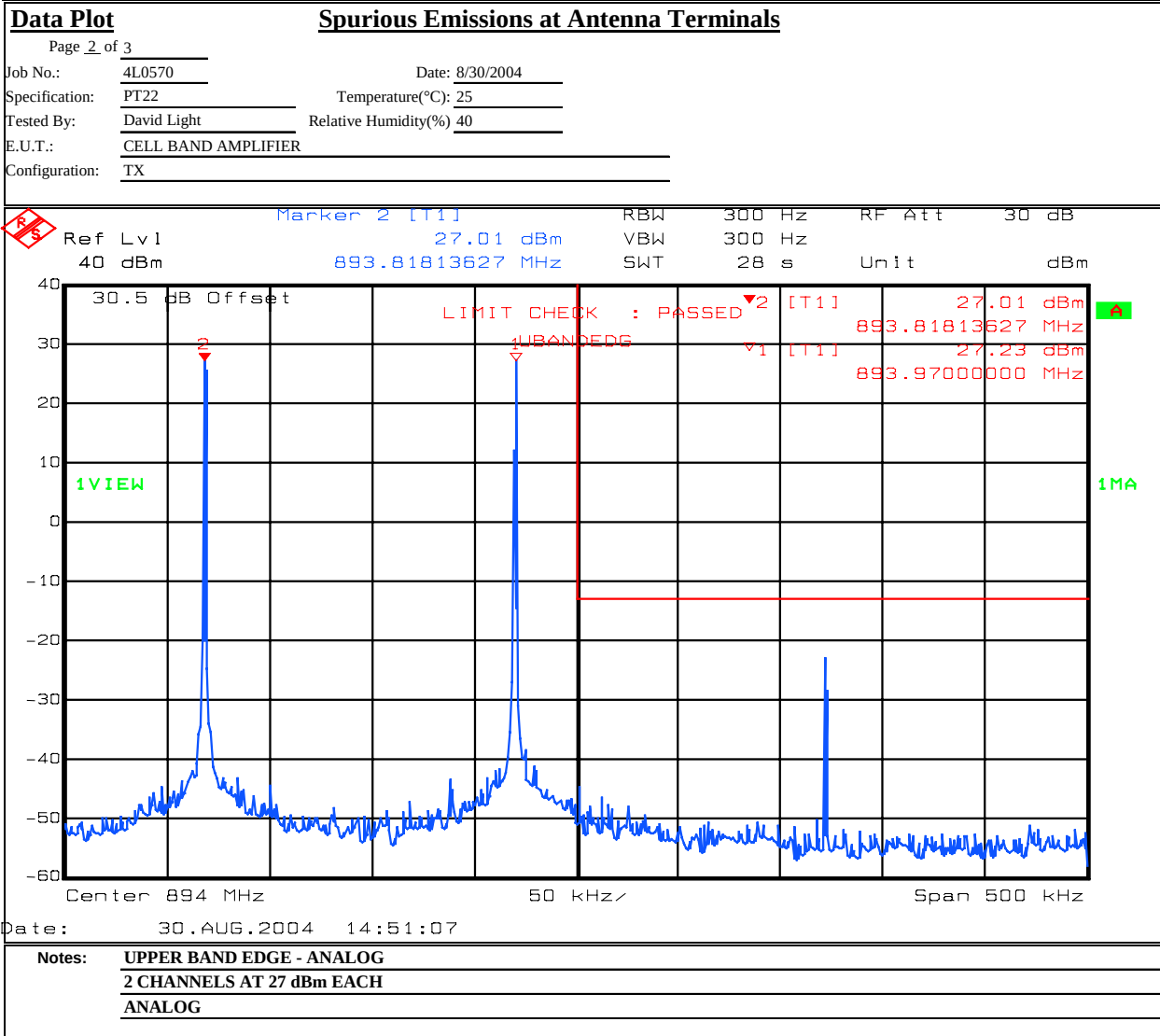
Test Data – Spurious Emissions at Antenna Terminals



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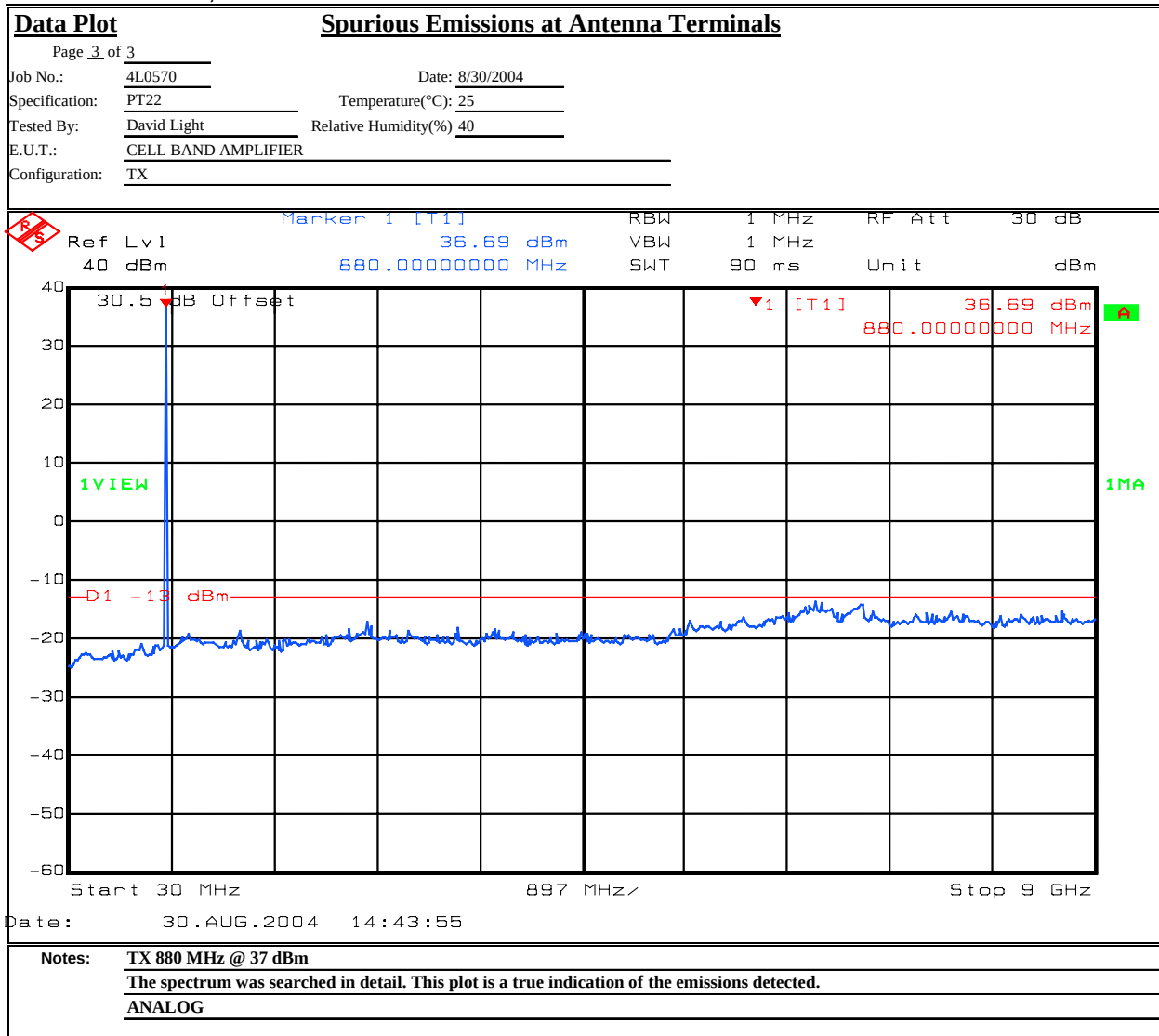
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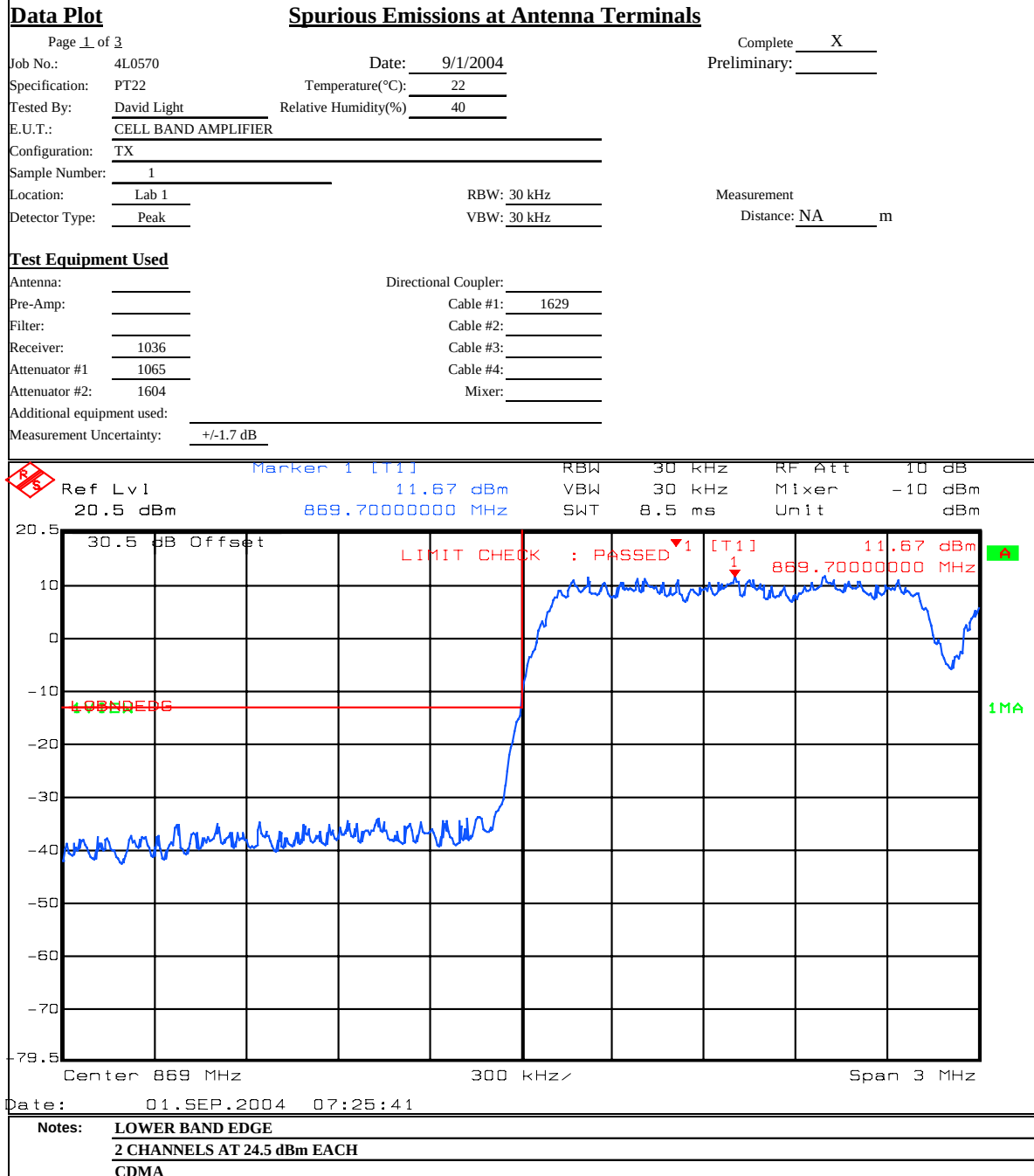
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EQUIPMENT: TFAH 85/19

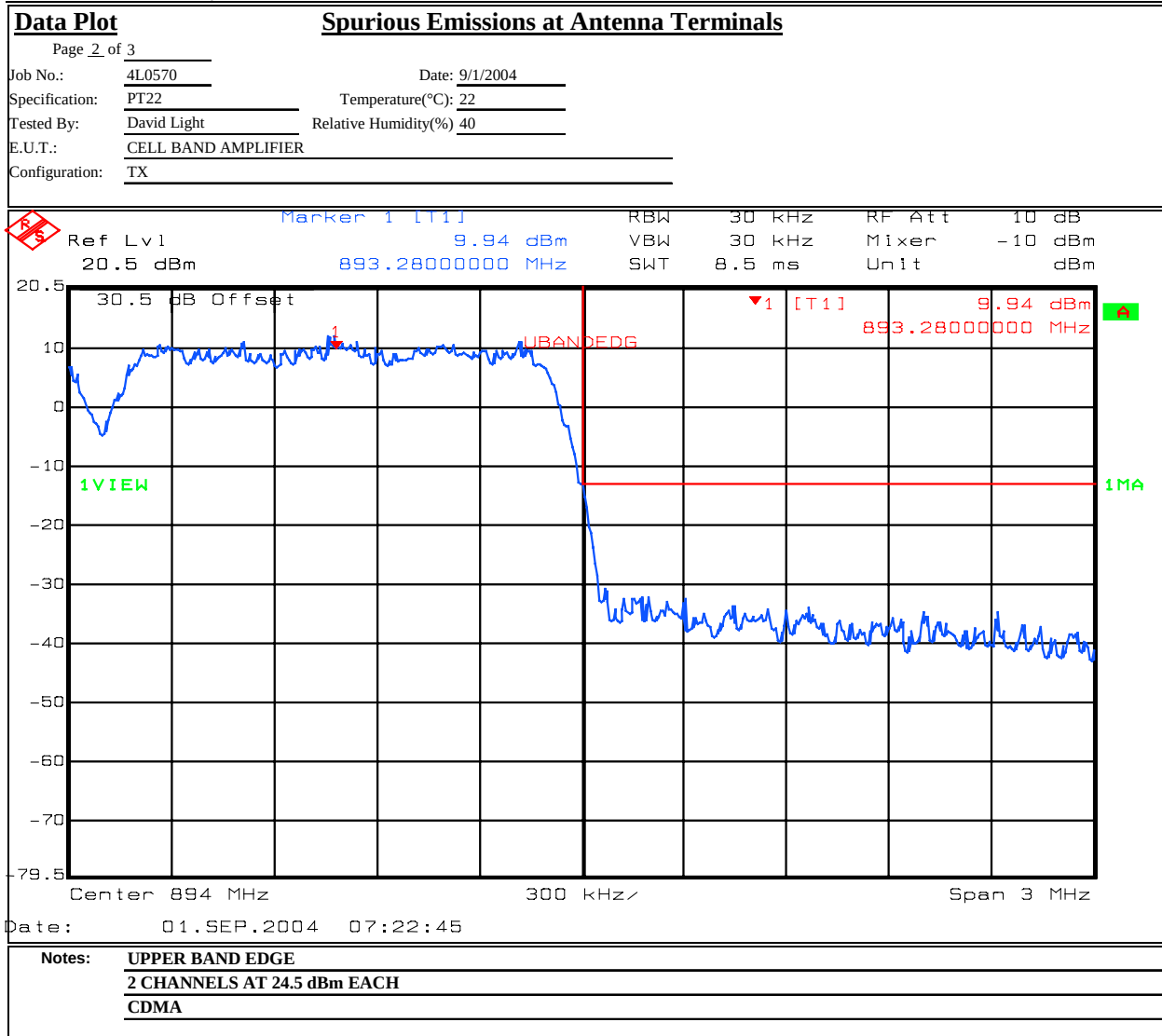
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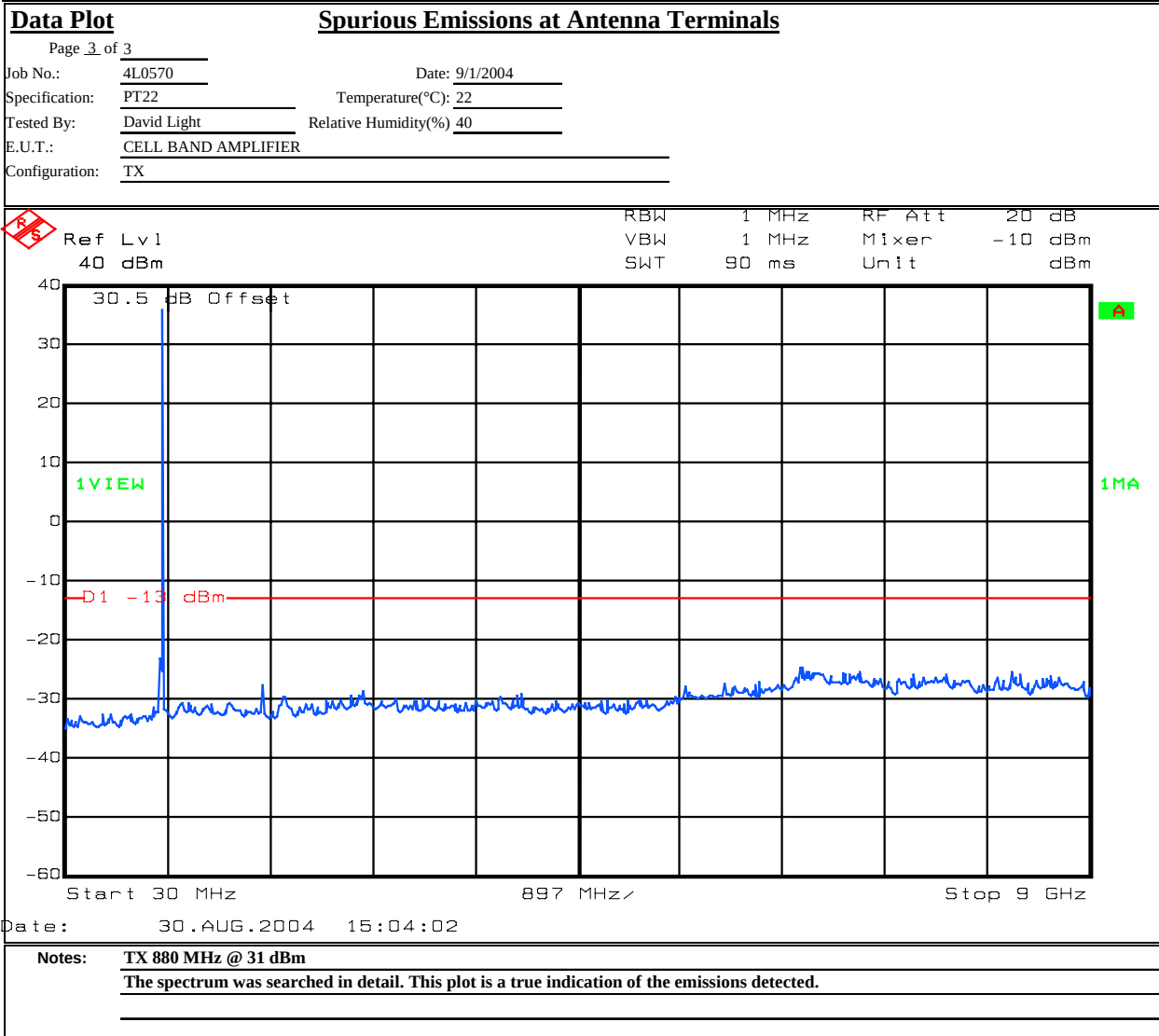
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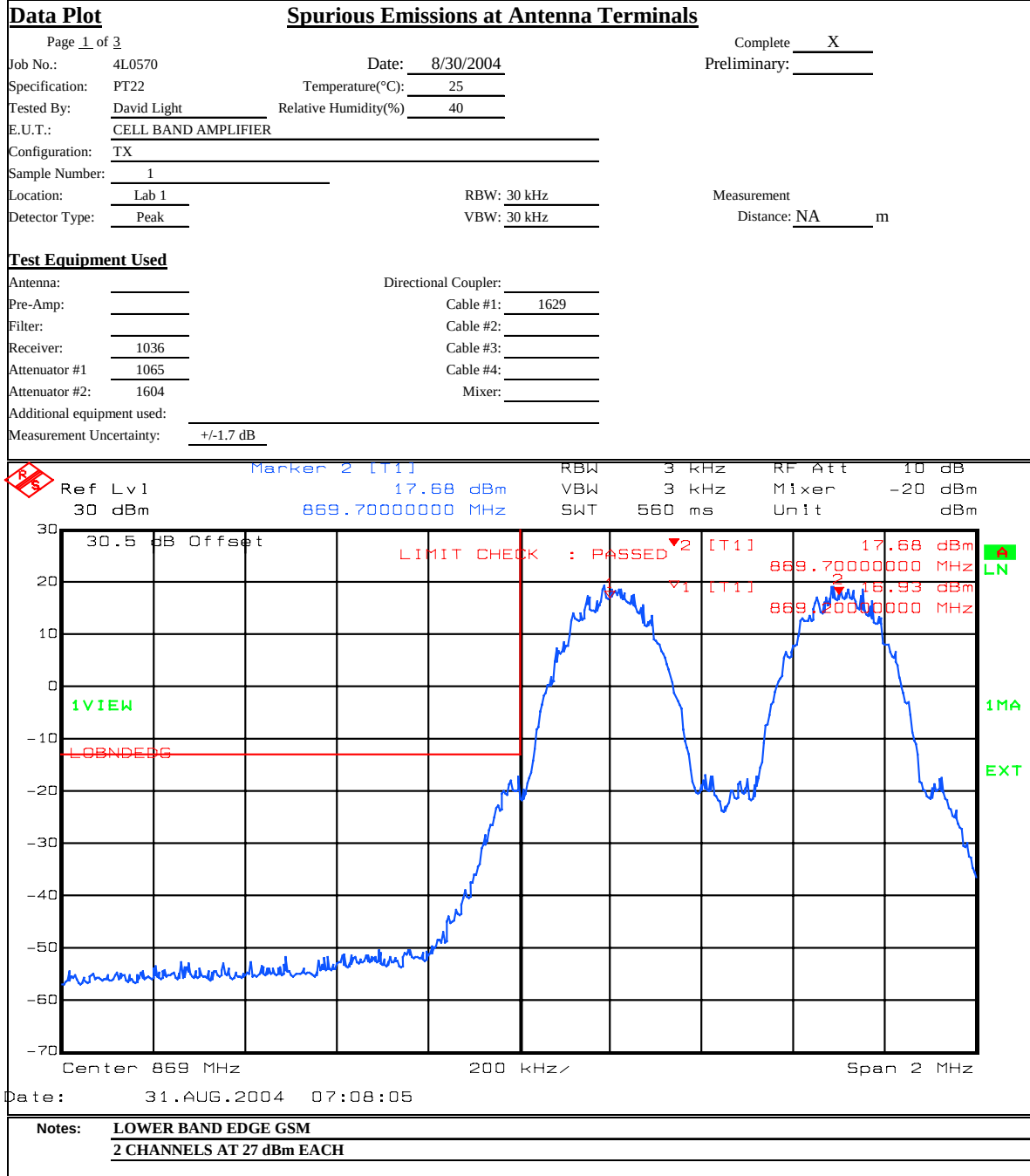
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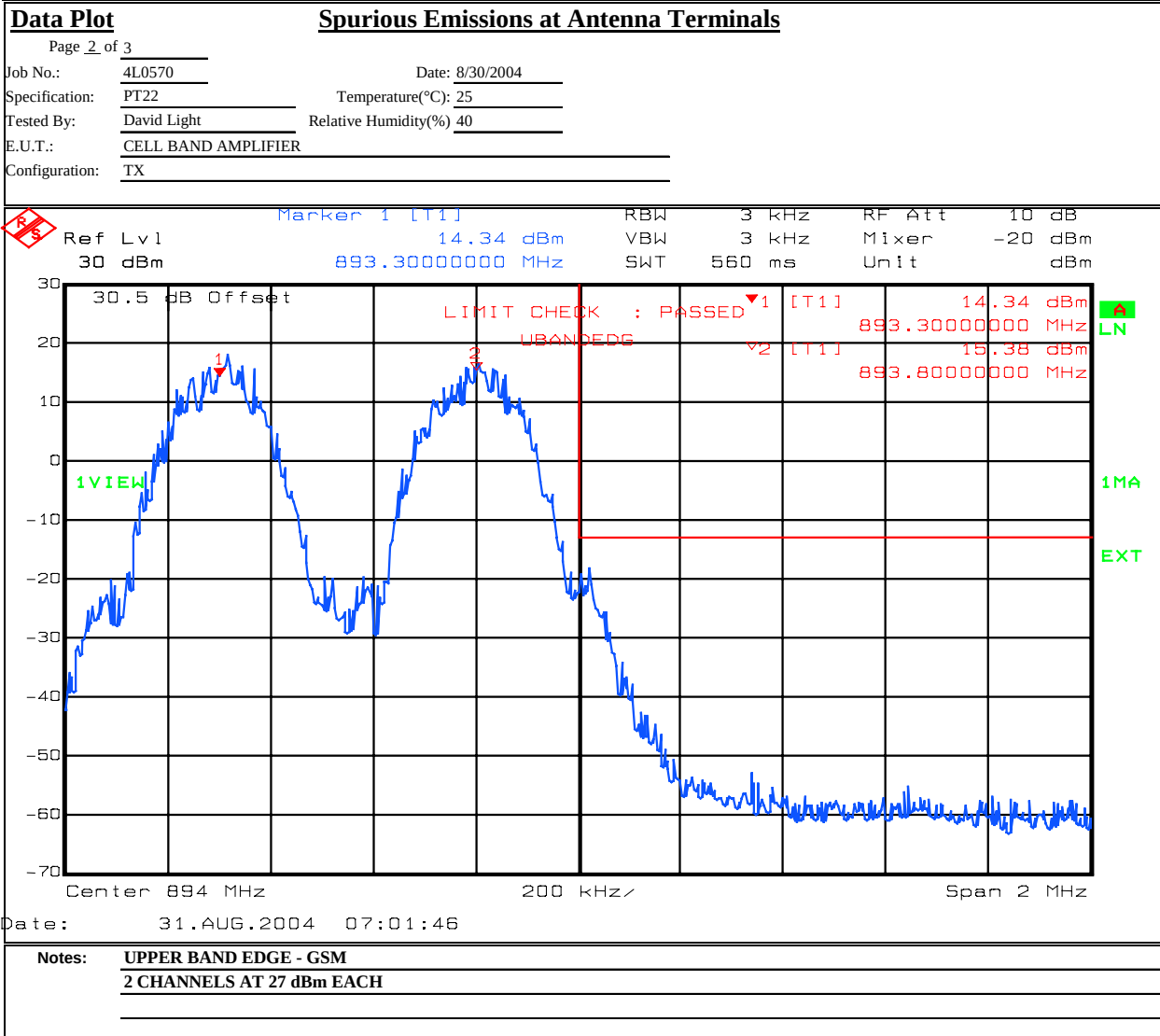
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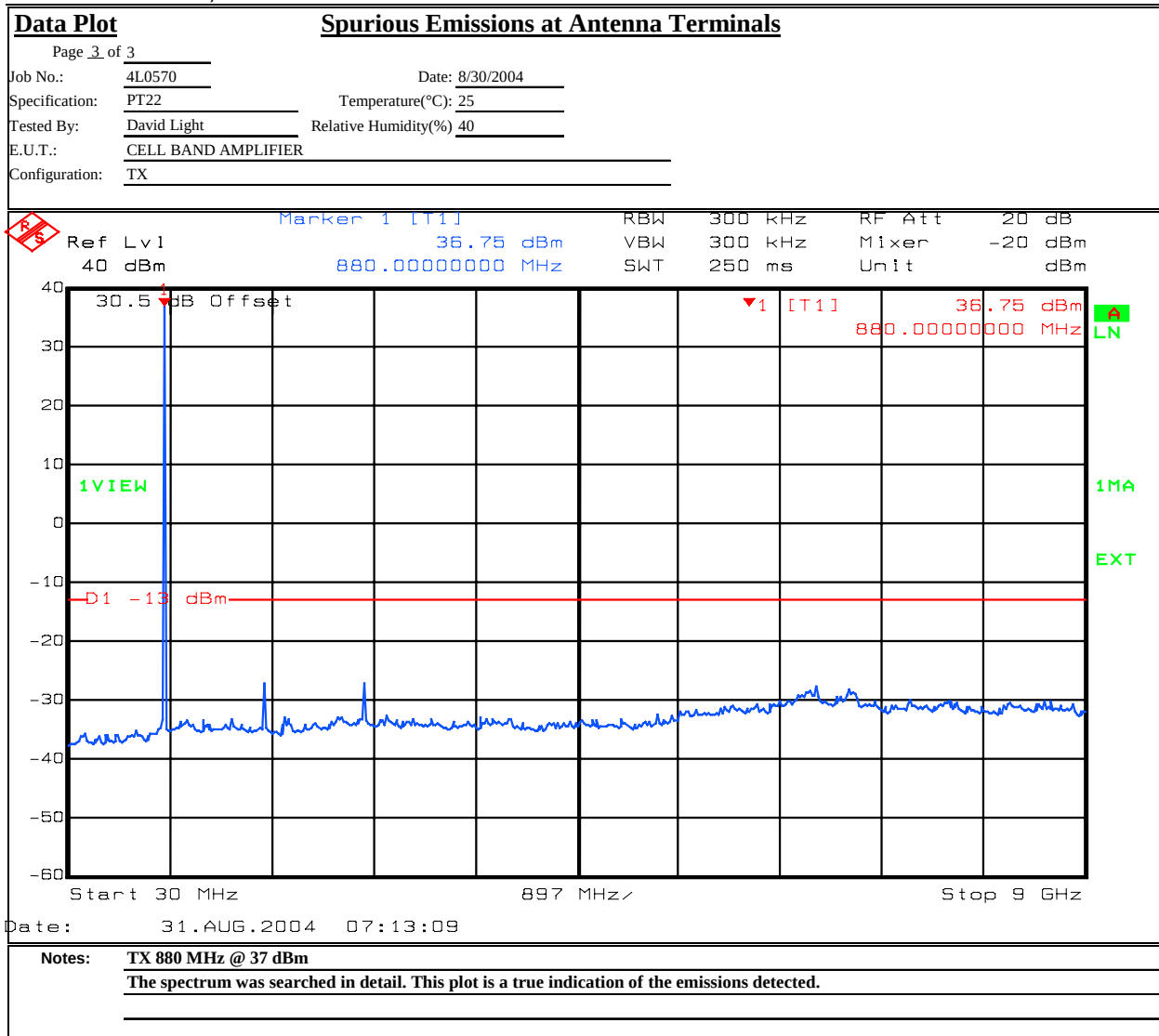
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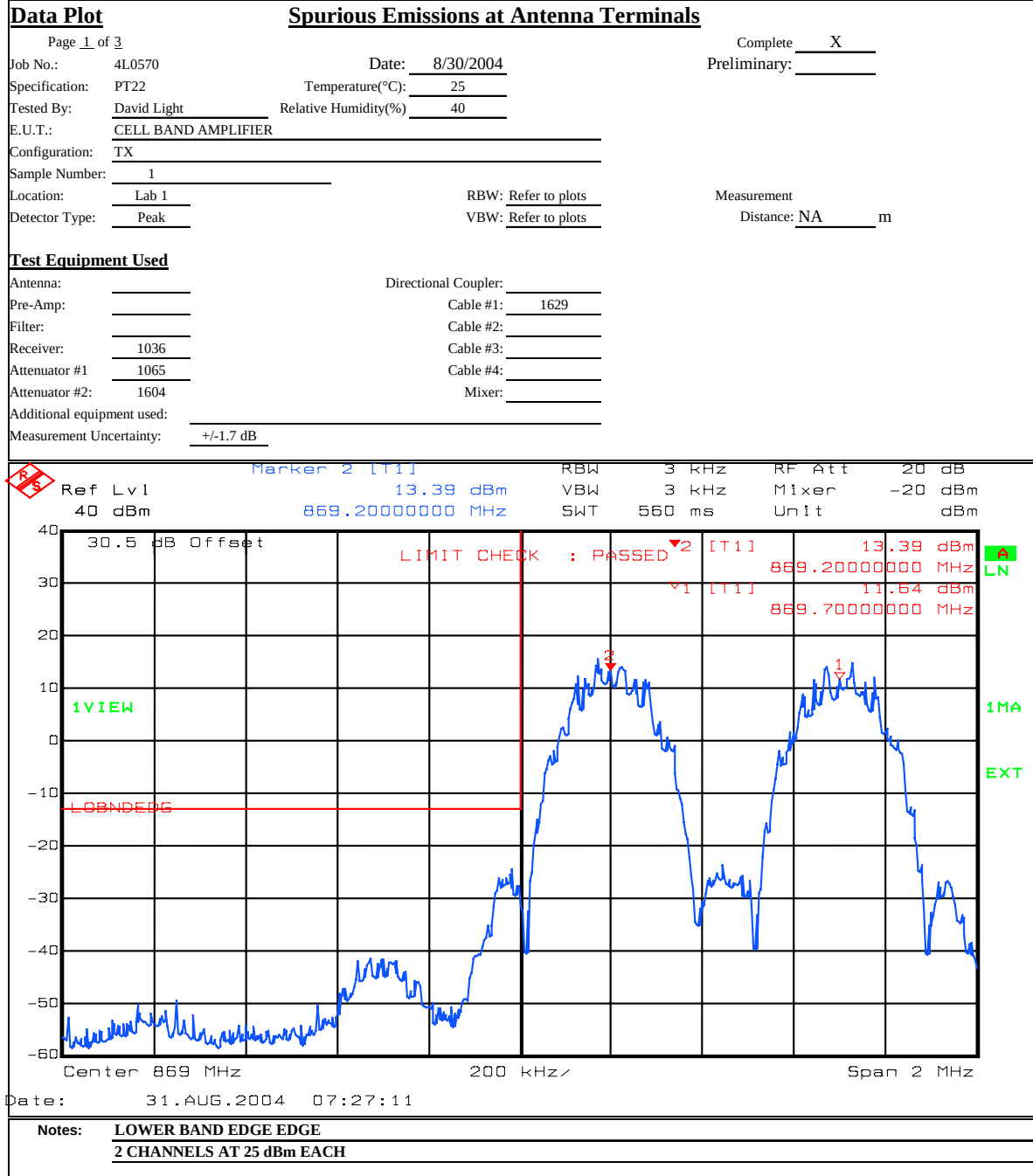
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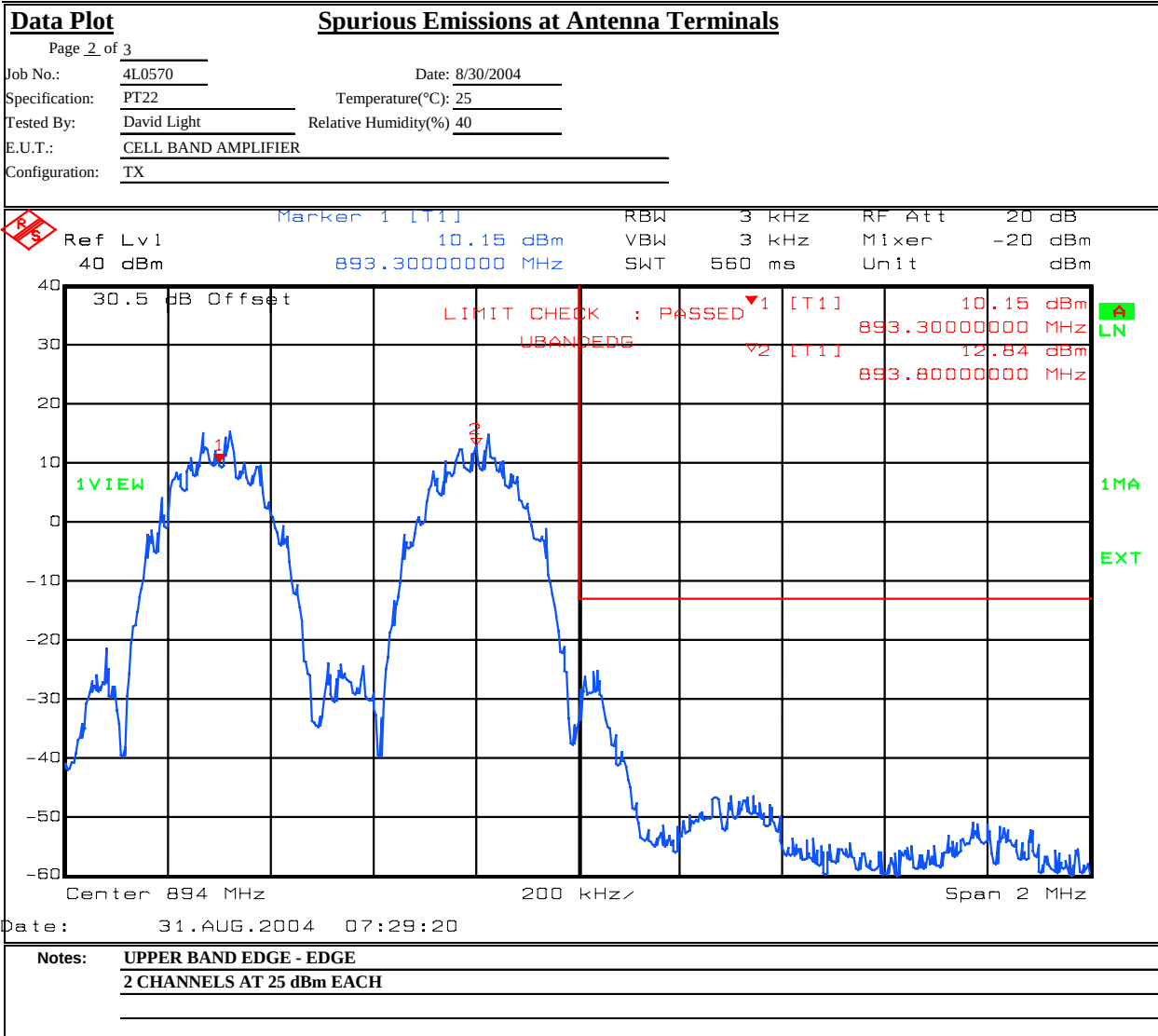
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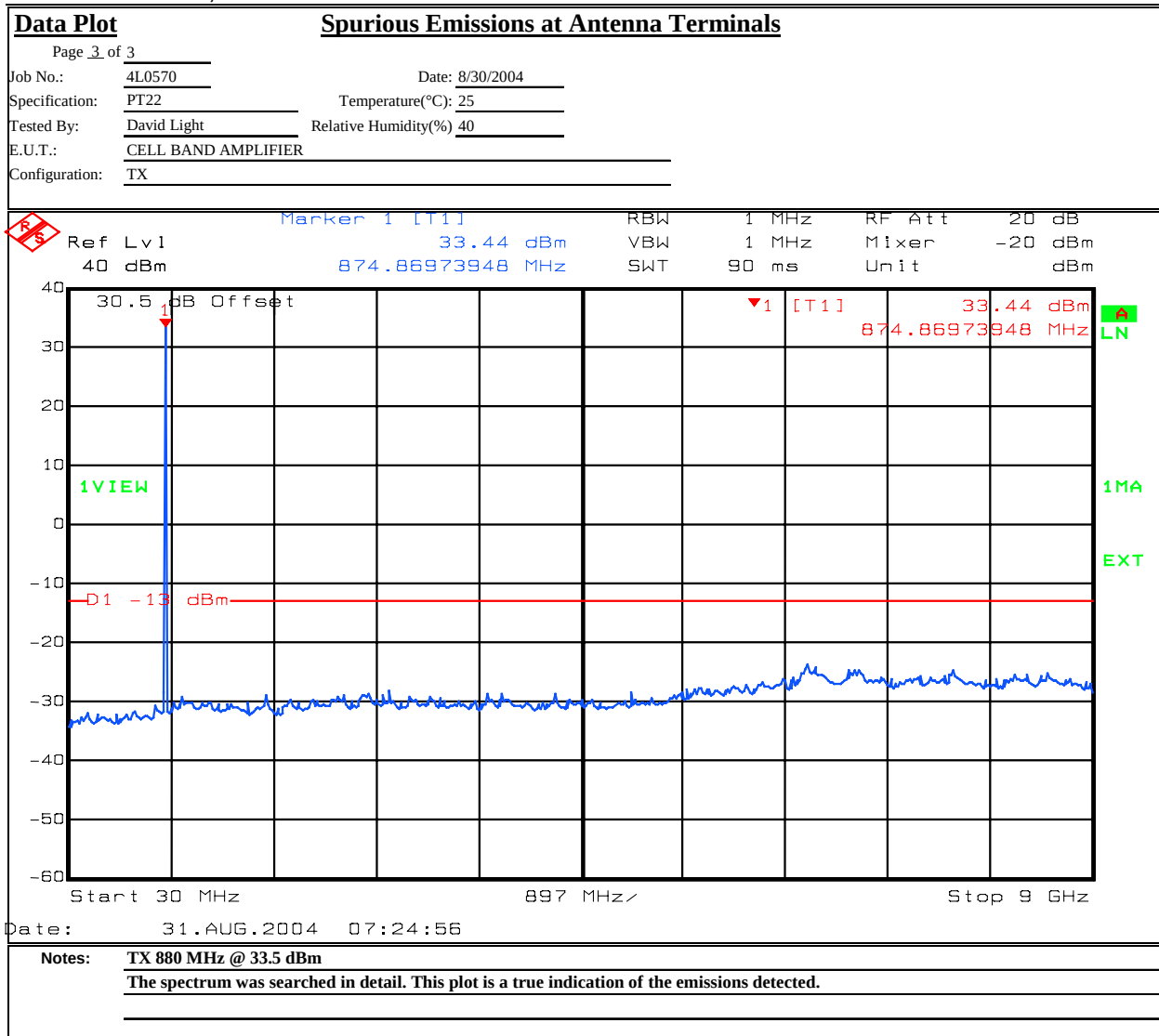
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Data Plot		Spurious Emissions at Antenna Terminals	
Page 1 of 3		Complete <u>X</u>	
Job No.:	4L0570	Date:	8/30/2004
Specification:	PT22	Temperature(°C):	25
Tested By:	David Light	Relative Humidity(%):	40
E.U.T.:	CELL BAND AMPLIFIER		
Configuration:	TX		
Sample Number:	1		
Location:	Lab 1	RBW: Refer to plots	Measurement
Detector Type:	Peak	VBW: Refer to plots	Distance: <u>NA</u> m
Test Equipment Used			
Antenna:		Directional Coupler:	
Pre-Amp:		Cable #1:	1629
Filter:		Cable #2:	
Receiver:	1036	Cable #3:	
Attenuator #1:	1065	Cable #4:	
Attenuator #2:	1604	Mixer:	
Additional equipment used:			
Measurement Uncertainty:	+/-1.7 dB		
Date: 31.AUG.2004 06:53:04			
Notes: LOWER BAND EDGE			
2 CHANNELS AT 25.5 dBm EACH			
TDMA			

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

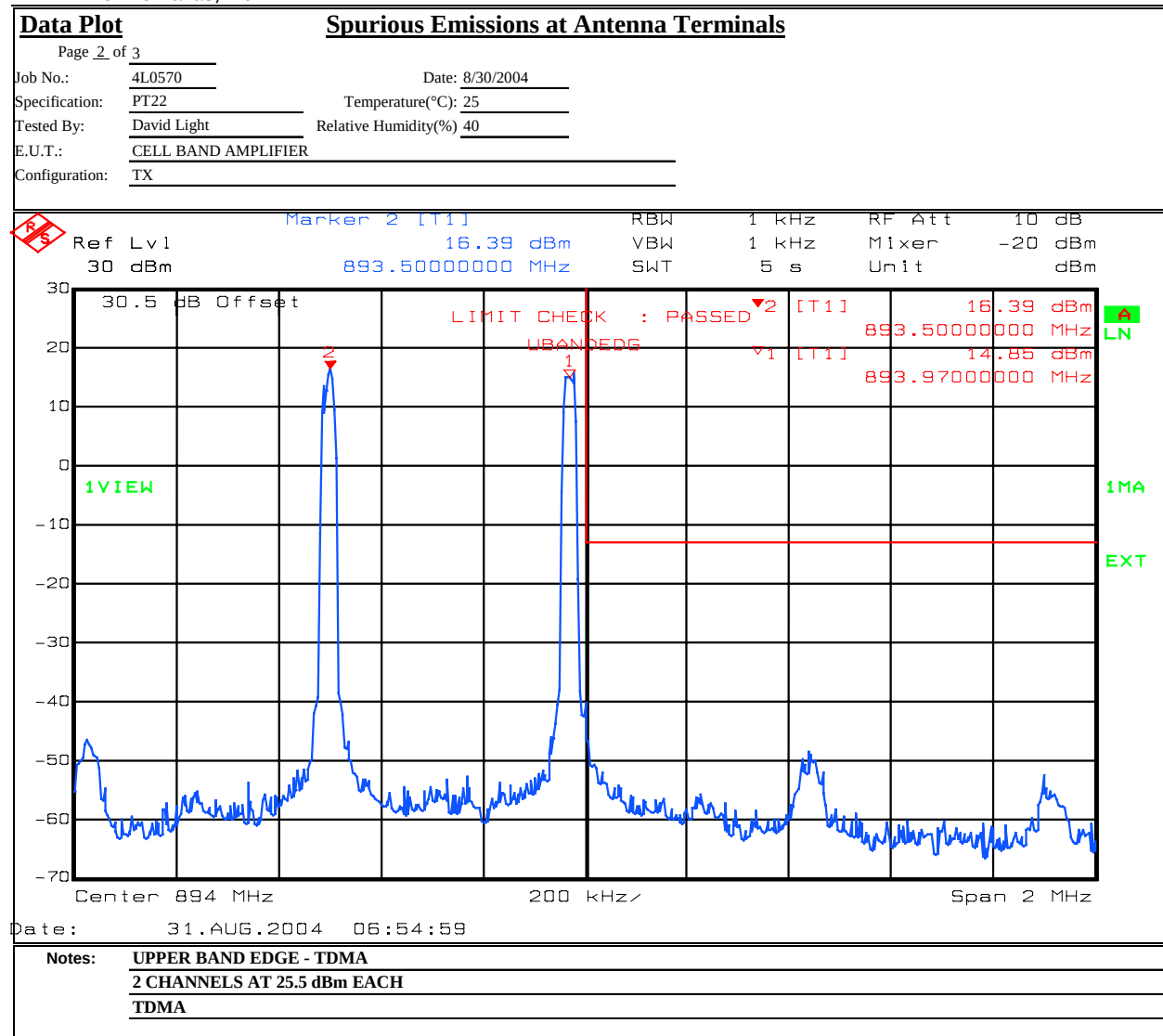
Test Data – Spurious Emissions at Antenna Terminals



Dallas Headquarters:

802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

Nemko Dallas, Inc.



EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

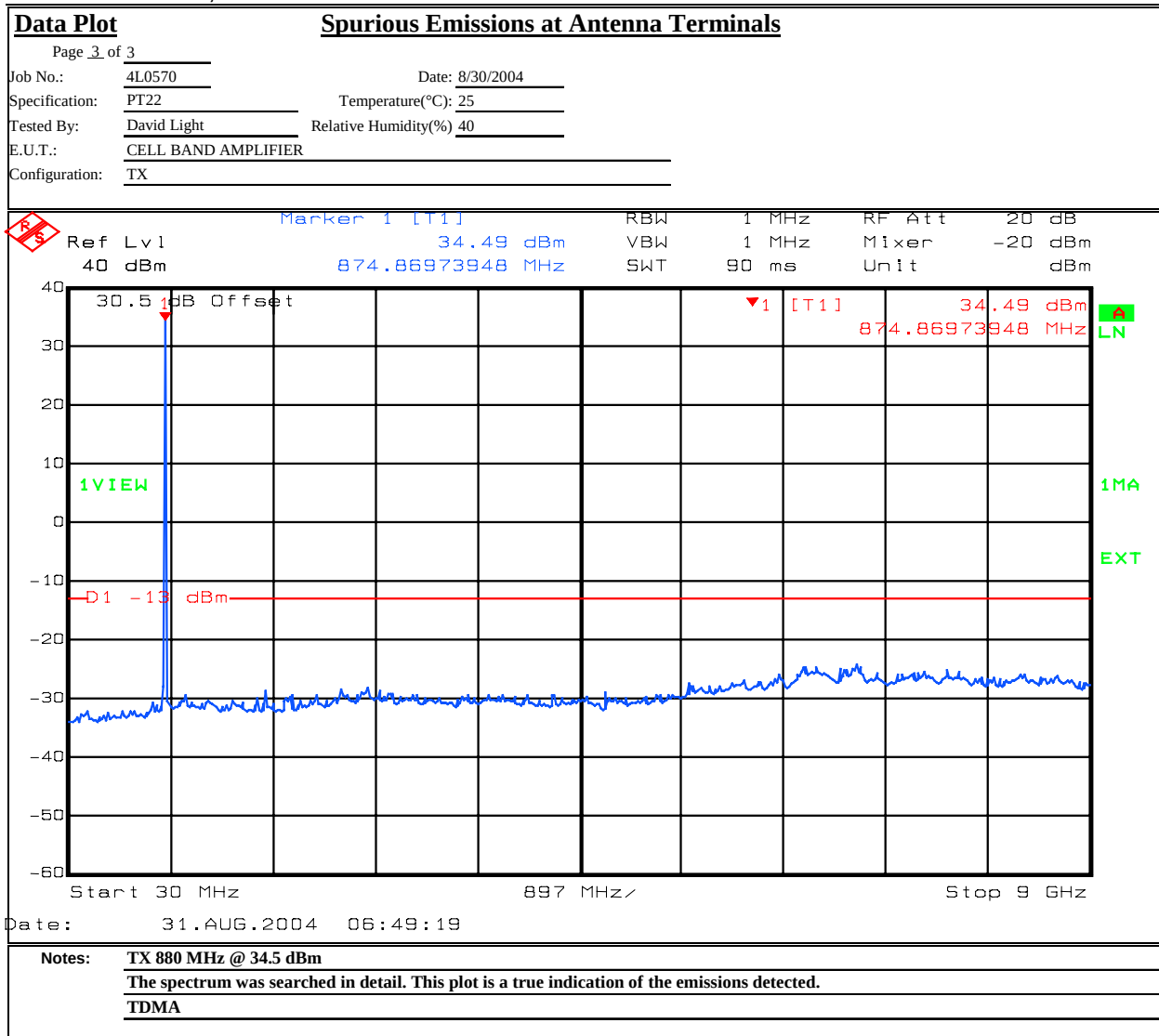
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Section 6. Field Strength of Spurious

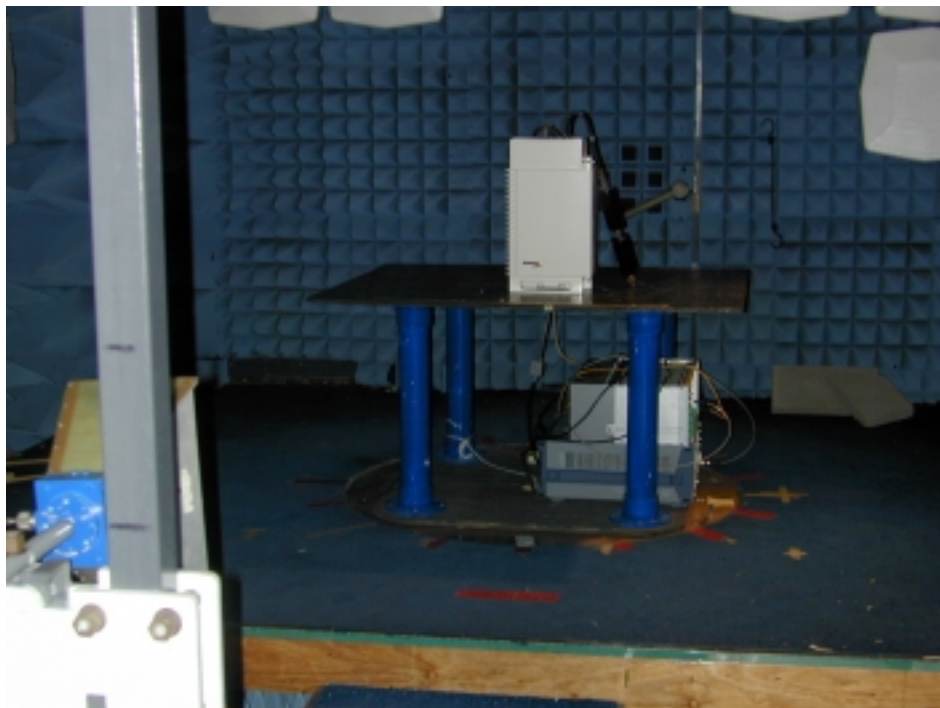
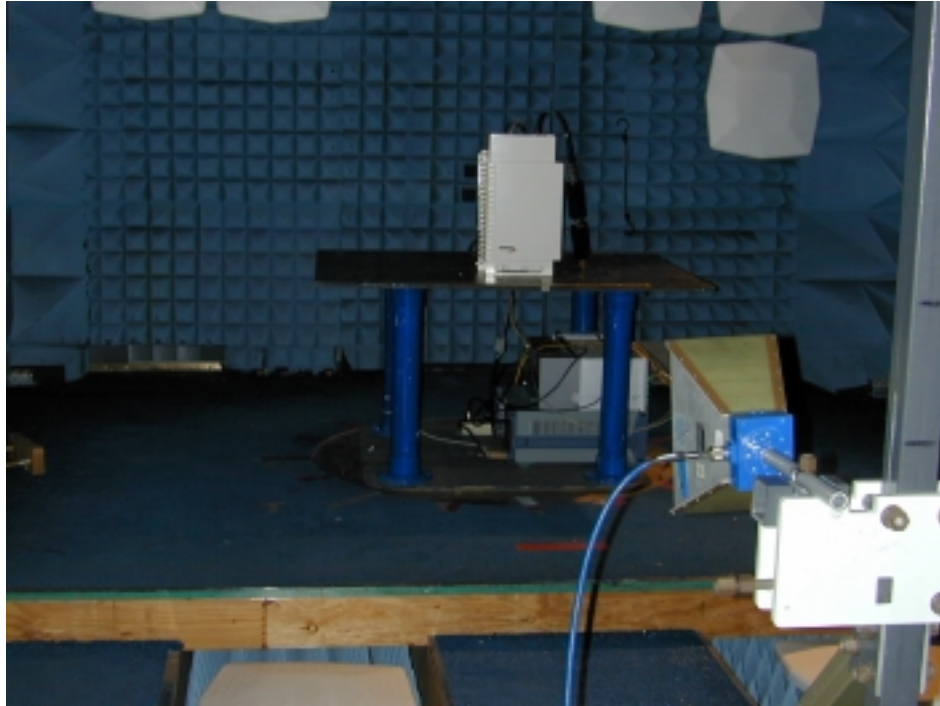
NAME OF TEST: Field Strength of Spurious	PARA. NO.: 2.1053
TESTED BY: Brian Boyea	DATE: 8/31/04

Test Results: [Complies.](#)**Test Data:** [There were no emissions detected within 20 dB of the specification of -13 dBm. The spectrum was searched to the 10th harmonic of the carrier \(880 MHz\) with the amplifier operating at full rated power.](#)**Equipment Used:** [1304-1016-1464-1484-1485](#)**Measurement Uncertainty:** [+/- 1.7](#) dB**Temperature:** [25](#) °C**Relative Humidity:** [40](#) %

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Test Setup Photos



EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Section 7. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	10/27/03	10/26/04
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	07/30/04	07/31/06
1484	Cable 2.0-18.0 Ghz	Storm PR90-010-072	N/A	08/26/04	08/26/05
1485	Cable 2.0-18.0 Ghz	Storm PR90-010-216	N/A	08/02/04	08/02/05
1304	HORN ANTENNA	ELECTRO METRICS RGA-60	6151	09/22/03	09/22/05
1036	SPECTRUM ANALYZER	ROHDE & SCHWARZ FSEK30	830844/006	03/22/04	03/23/06
1065	ATTENUATOR	NARDA 776B-10	NONE	CBU	N/A
1604	ATTENUATOR	NARDA 776B-20	NONE	N/A	N/A
1629	CABLE, 6 ft	MEGAPHASE 10311 1GVT4	N/A	CBU	N/A

Nemko Dallas

FCC PART 22, SUBPART H
CELLULAR BAND REPEATERS

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

ANNEX A - TEST DETAILS

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

NAME OF TEST: RF Power Output**PARA. NO.: 2.1046**

Minimum Standard: Para. No. 22.913(a). The maximum effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 watts.

Method Of Measurement:Detachable Antenna:

The peak power at antenna terminals is measured using an in-line peak power meter. Power output is measured with the maximum rated input level.

Integral Antenna:

If the antenna is not detachable from the circuit then the Peak Power Output is derived from the peak radiated field strength of the fundamental emission by using the plane wave relation $GP/4\pi R^2 = E^2/120\pi$ and proceeding as follows:

$$P = \frac{E^2 R^2}{30G} = \frac{E^2 3^2}{30G}$$

where,

P = the equivalent isotropic radiated power in watts

E = the maximum measured field strength in V/m

R = the measurement range (3 meters)

G = the numeric gain of the transmit antenna in relation to an isotropic radiator

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

NAME OF TEST: Occupied Bandwidth (Voice & SAT)	PARA. NO.: 2.1049
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Minimum Standard: 22.917(c) The mean power of any emission removed from the carrier frequency by a displacement frequency (f_d in kHz) must be attenuated below the mean power of the unmodulated carrier (P) as follows:

- (i) On any frequency removed from the carrier frequency by more than 12 kHz but not more than 20 kHz:

at least $117 \log(f_d/12)$

- (ii) On any frequency removed from the carrier frequency by more than 20 kHz, up to the first multiple of the carrier frequency:

at least $100 \log(f_d/11)$ dB or $43 + 10 \log(P)$ dB, whichever is the lesser attenuation.

Method Of Measurement:

Spectrum Analyzer Settings:

RBW: 300 Hz

VBW: $\geq$ RBW

Span: 100 kHz

Sweep: Auto

Input Signal Characteristics (F3E/F3D):

RF level: Maximum recommended by manufacturer

AF1 frequency: 6 kHz

AF1 level: sufficient to produce 2 kHz deviation

AF2 frequency: 2.5 kHz

AF2 level: sufficient to produce 12 kHz deviation.

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

NAME OF TEST: Occupied Bandwidth (WB Data)**PARA. NO.: 2.1049**

Minimum Standard: 22.917(c) The mean power of any emission removed from the carrier frequency by a displacement frequency (f_d in kHz) must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz:

at least 26 dB

(2) On any frequency removed from the carrier frequency by more than 45 kHz but not more than 90 kHz:

at least 45 dB

(3) On any frequency removed from the carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency:

at least 60 dB or $43 + 10 \log (P)$ dB, whichever is the lesser attenuation.

Method Of Measurement:

Spectrum Analyzer Settings:

RBW: 300 Hz

VBW: $\geq$ RBW

Span: 200 kHz

Sweep: Auto

Input Signal Characteristics:

RF level: Maximum recommended by manufacturer

AF1 frequency: 10 kHz, random bit sequence

AF1 level: sufficient to produce 8 kHz deviation

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

NAME OF TEST: Occupied Bandwidth (ST)**PARA. NO.: 2.1049**

Minimum Standard: 22.917(c) The mean power of any emission removed from the carrier frequency by a displacement frequency (f_d in kHz) must be attenuated below the mean power of the unmodulated carrier (P) as follows:

(1) On any frequency removed from the carrier frequency by more than 20 kHz but not more than 45 kHz:

at least 26 dB

(2) On any frequency removed from the carrier frequency by more than 45 kHz but not more than 90 kHz:

at least 45 dB

(3) On any frequency removed from the carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency:

at least 60 dB or $43 + 10 \log (P)$ dB, whichever is the lesser attenuation.

Method Of Measurement:

Spectrum Analyzer Settings:

RBW: 300 Hz

VBW: $\geq$ RBW

Span: 200 kHz

Sweep: Auto

Input Signal Characteristics:

RF level: Maximum recommended by manufacturer

AF1 frequency: 10 kHz tone

AF1 level: sufficient to produce 8 kHz deviation

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

NAME OF TEST: Occupied Bandwidth (Digital Modulation)	PARA. NO.: 2.1049
--	--------------------------

Minimum Standard: Not defined by FCC. Input vs. Output.

Method Of Measurement:

Spectrum Analyzer Settings:

RBW: CDMA (30 kHz), GSM (30 kHz), NADC (1 kHz) and CDPD (1 kHz)

VBW: $\geq$ RBW

Span: As required

Sweep: Auto

Input Signal Characteristics:

RF level: Maximum recommended by manufacturer

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

NAME OF TEST: Spurious Emission at Antenna Terminals	PARA. NO.: 2.1051
--	-------------------

Minimum Standard: Para. No. 22.917(e). The mean power of emissions must be attenuated below the mean power of the unmodulated carrier on any frequency twice or more than twice the fundamental emission by at least $43 + 10 \log P$. This is equivalent to -13 dBm absolute power.

Method Of Measurement:

Spectrum Analyzer Settings:

RBW: 30 kHz (AMPS). As required for digital modulations.

VBW: $\geq$ RBW

Start Frequency: 0 MHz

Stop Frequency: 10 GHz

Sweep: Auto

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

NAME OF TEST: Field Strength of Spurious Radiation**PARA. NO.: 2.1053****Minimum Standard:**

Para. No. 22.917(e). The mean power of emissions must be attenuated below the mean power of the unmodulated carrier on any frequency twice or more than twice the fundamental emission by at least $43 + 10 \log P$. This is equivalent to -13 dBm absolute power.

Test Method:

The maximum field strength of the spurious emission is measured at a distance of 3 meters. The device under test is then replaced with a substitution antenna of known gain with respect to a $\frac{1}{4}$ wave dipole antenna. A calibrated signal source is used to feed the substitution antenna. The rf level to the substitution antenna is adjusted to repeat the previously measured field strength. The rf input level to the substitution antenna is the effective radiated power of the spurious emission after any correction for substitution antenna gain against a $\frac{1}{4}$ wave dipole.

The spectrum is searched to 10 GHz.

EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

NAME OF TEST: Frequency Stability**PARA. NO.: 2.1055**

Minimum Standard: Para. No. 22.355. The transmitter carrier frequency shall remain within the tolerances given in Table C-1.

Table C-1

Freq. Range (MHz)	Base, fixed	Mobile > 3 W	Mobile $\leq$ 3 W
821 to 896	1.5	2.5	2.5

Method Of Measurement:Frequency Stability With Voltage Variation:

The E.U.T. is placed in an environmental chamber and allowed to stabilize at +20 degrees Celsius for at least 15 minutes. The frequency counter and signal generator are phase locked with the same 10 MHz reference frequency by connecting the 10 MHz ref. out of the counter to the 10 MHz ref, in of the signal generator. With the voltage input to the E.U.T. set to 85% S.T.V., the frequency is measured in 30 second intervals for a period of 5 minutes. This procedure is repeated at 100% S.T.V. and 115% S.T.V.

Frequency Stability With Temperature Variation:

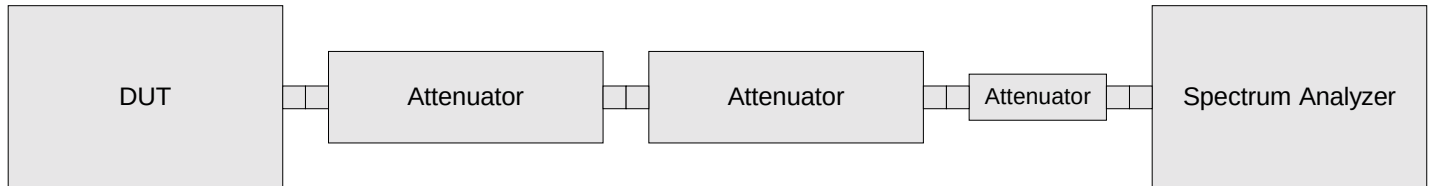
The input voltage to the E.U.T. is set to S.T.V. and the temperature of the environmental chamber is varied in 10 degree steps from -30 degrees C to +50 degrees C. The E.U.T. is allowed to stabilize at each temperature and the frequency is measured in 30 second intervals for a period of 5 minutes.

ANNEX B - TEST DIAGRAMS

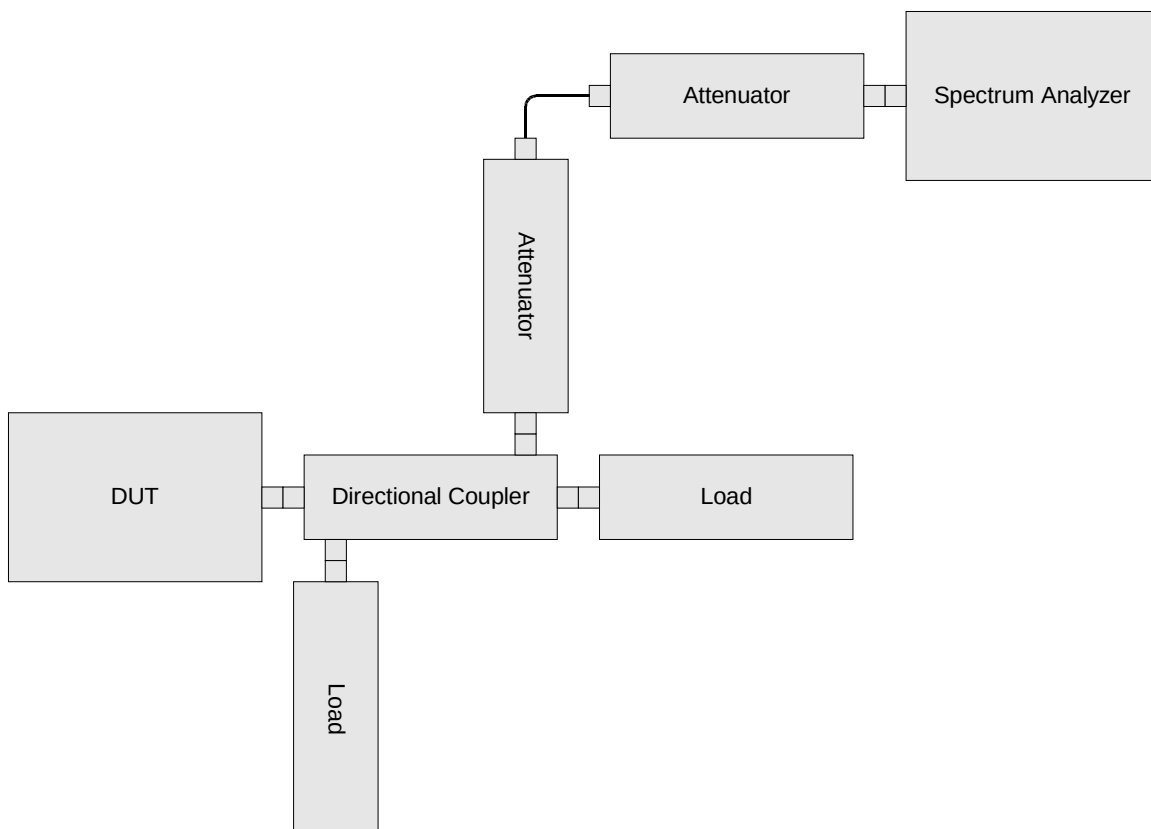
EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Para. No. 2.1046 - R.F. Power Output



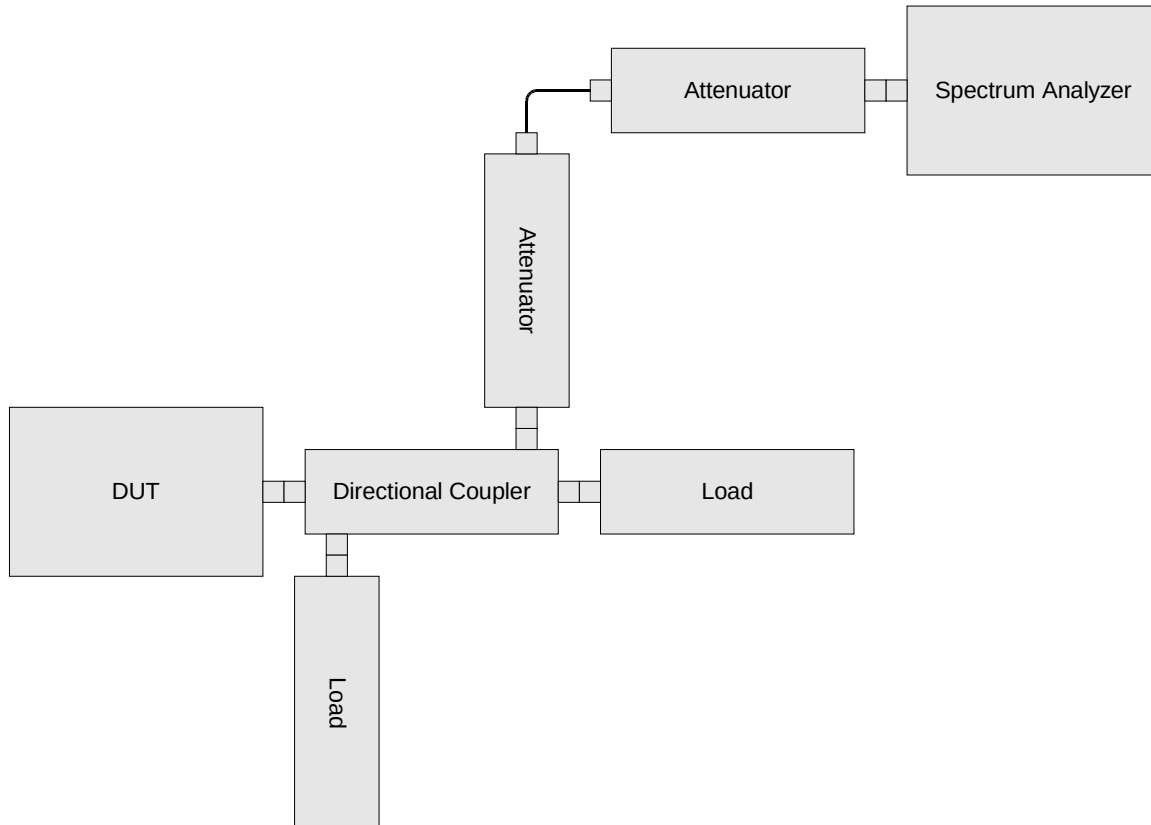
Para. No. 2.1049 - Occupied Bandwidth

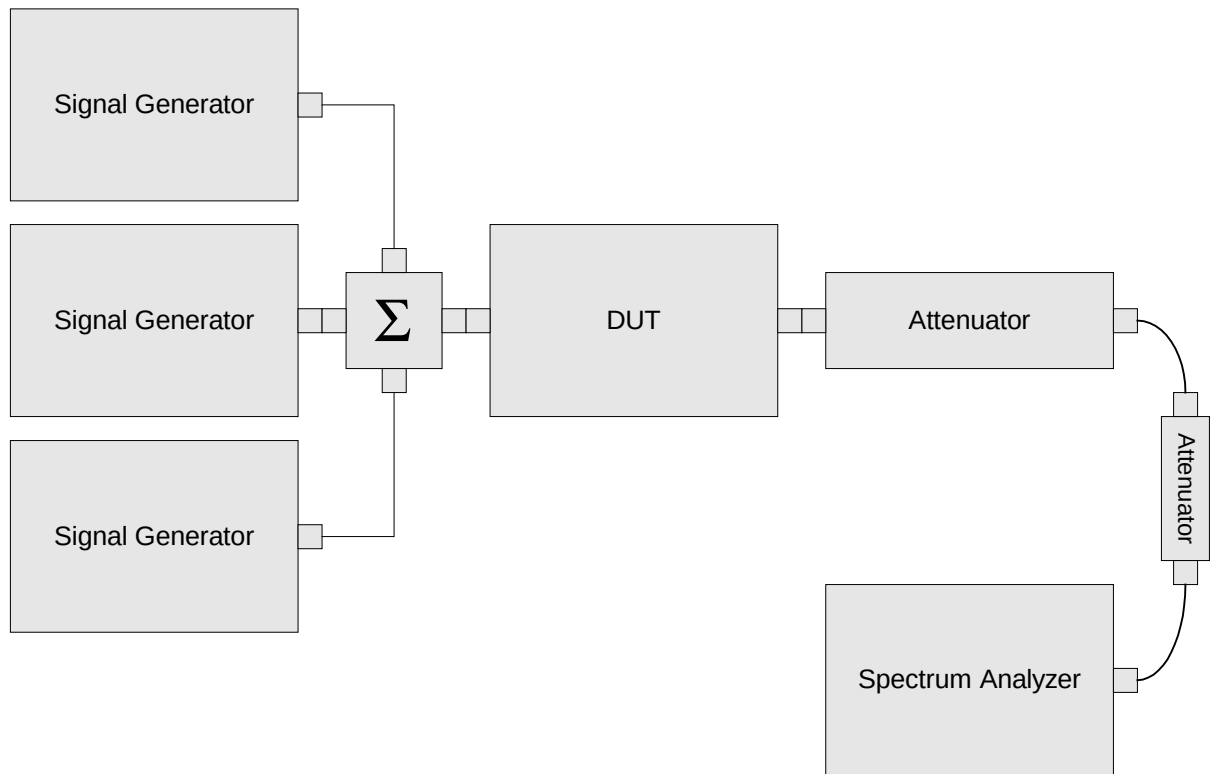


EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Para. No. 2.1051 Spurious Emissions at Antenna Terminals

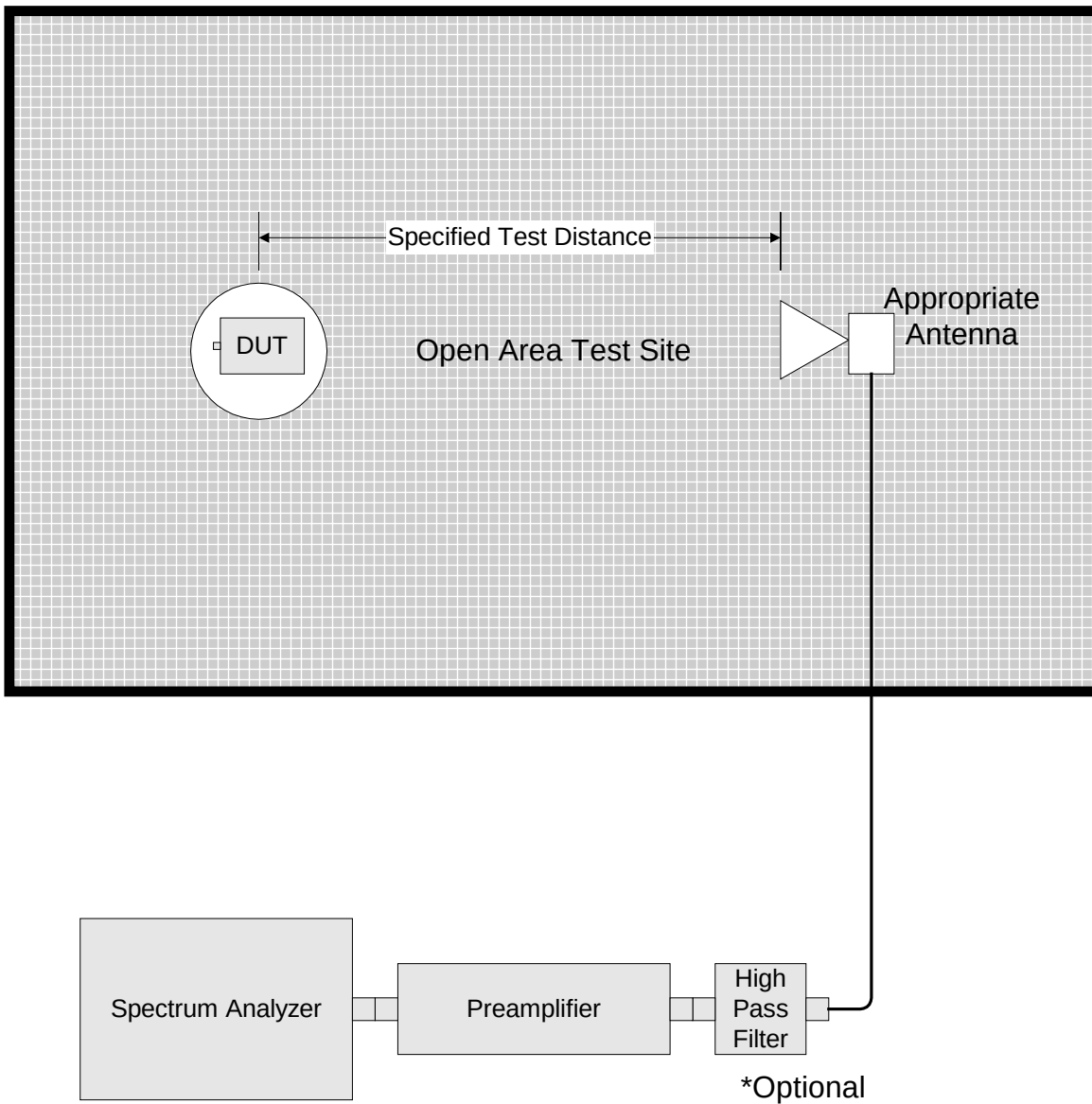


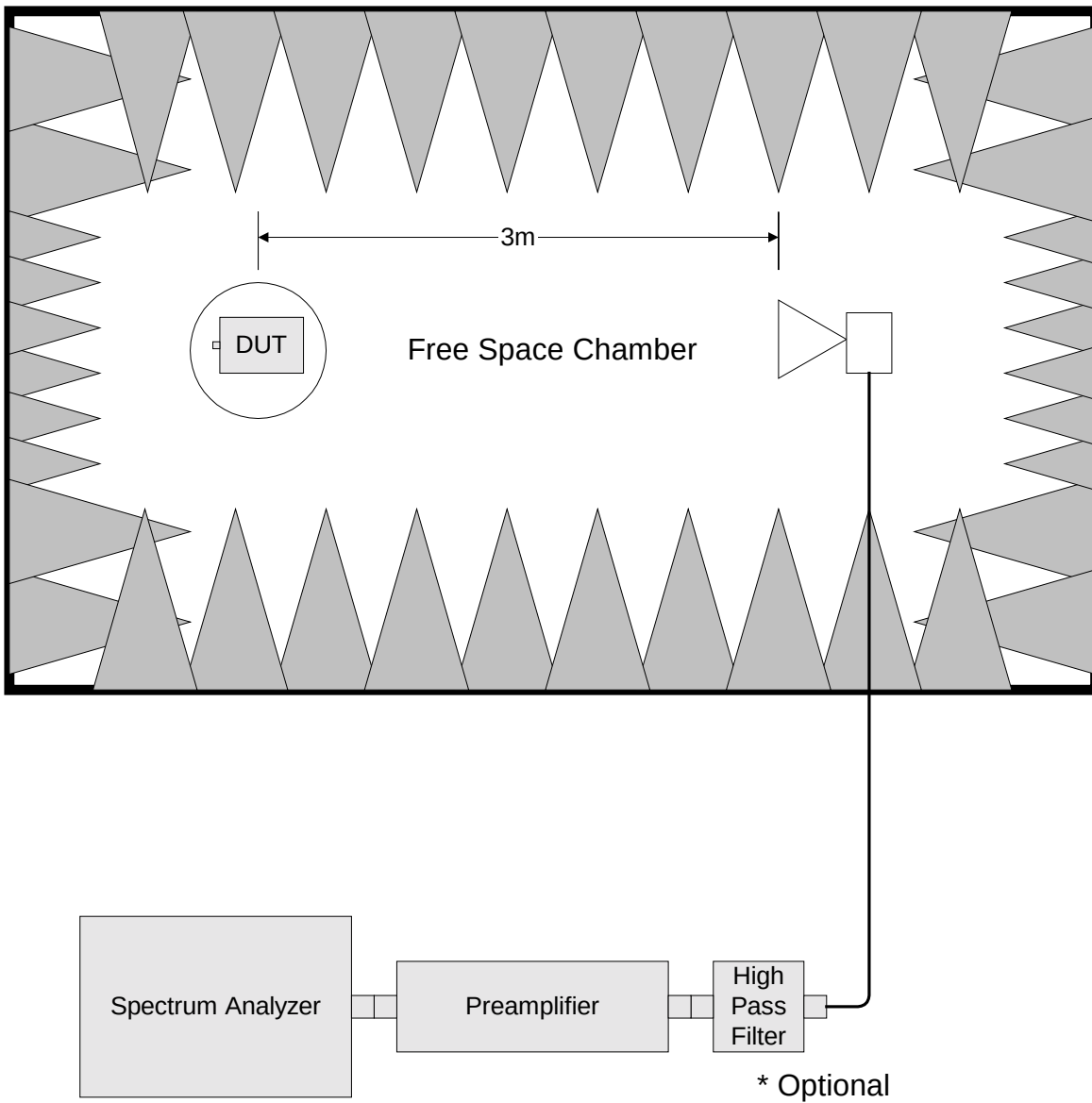


EQUIPMENT: TFAH 85/19

Test Report No.: 4L0570RUS1

Para. No. 2.1053 - Field Strength of Spurious Radiation





Para. No. 2.1055 - Frequency Stability

