#8.3.9

Radiated Emissions Test Data

Company:	Tellus Technology Inc	Model #:	WipClip V131C	Standard_	FCC § 15B	
EUT:	wireless data modem for PDA	S/N #:	E30041	Limits	2	
Project #:	J20022674	Test Date:	Jan 17,2001	Test Distance_	3	meters
Test Mode:	Normal operation	Engineer:	Suresh K	Duty Relaxation	0	dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	9	7	8	5	8	0	22	0	0	0
Model:	EMCO 3104	EM LPA-25	EMCO 3115	CDI_P950	CDI_P1000	None	Grn_M+L	None	None	None

Frequency	Reading	Detector	Ant.	Amp.	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(µV)	P/A/Q	#	#	H/V	dB(1/m)	dB	dB	dB	dB(µV/m)	dB(µV/m)	dB
155.52	28.6	Peak	9	5	V	14.9	18.2	1.6	0.0	26.9	43.5	-16.6
217.50	37.7	Peak	9	5	V	16.4	19.5	1.7	0.0	36.3	46.0	-9.7
85.53	40.9	Peak	9	5	V	8.6	18.8	1.0	0.0	31.7	40.0	-8.3
311.04	34.4	Peak	7	5	V	16.4	18.1	2.1	0.0	34.8	46.0	-11.2
979.53	29.4	Peak	7	5	V	23.5	9.4	4.2	0.0	47.7	54.0	-6.3
583.20	31.9	Peak	7	5	V	18.5	15.6	3.2	0.0	38.0	46.0	-8.0

Notes:

a) D.C.F.:Distance Correction Factor

b) Insert. Loss (dB) = Cable A + Cable B + Cable C .

c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).

d) Negative signs (-) in Margin column signify levels below the limits.

e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.

8.3.6

Radiated Emissions Test Data

Company:	Tellus Technology Inc	Model #:	WipClip V131C	Standard_	FCC § 15B	
EUT:	wireless data modem for PDA	S/N #:	E30041	Limits	2	
Project #:	J20022674	Test Date:	Jan 17,2001	Test Distance_	3	meters
Test Mode:	Receive and TX off	Engineer:	Suresh K	Duty Relaxation	0	dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	8	7	0	5	8	0	22	0	0	0
Model:	EMCO 3115	EM LPA-25	None	CDI_P950	CDI_P1000	None	Grn_M+L	None	None	None

Frequency	Reading	Detector	Ant. #	Amp. #	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	D. C. F.	Net	Limit @3m	Margin
MHz	dB(µV)	P/A/Q			H/V	dB(1/m)	dB	dB	dB	dB(µV/m)	dB(µV/m)	dB
979.58	29.2	Peak	7	5	V	23.5	9.4	4.2	0.0	47.5	54.0	-6.5
1959.16	44.3	Peak	8	8	V	26.7	29.2	0.0	0.0	41.8	54.0	-12.2
991.52	28.8	Peak	7	5	V	23.9	9.4	4.2	0.0	47.5	54.0	-6.5
1983.04	48.1	Peak	8	8	V	26.7	29.2	0.0	0.0	45.6	54.0	-8.4
1004.49	45.2	Peak	8	8	V	25.0	30.3	4.4	0.0	44.3	54.0	-9.7
2008.98	48.4	Peak	8	8	V	29.1	29.1	0.0	0.0	48.4	54.0	-5.6

Notes:

a) D.C.F.:Distance Correction Factor

b) Insert. Loss (dB) = Cable A + Cable B + Cable C .

c) Net (dB) = Reading + Antenna Factor - Pre-amp + Insert. Loss. - Transducer Loss - Duty Relaxation (transmitter only).

d) Negative signs (-) in Margin column signify levels below the limits.

e) All other emissions not reported are below the equipment noise floor which is at least 20 dB below the limits.

Radiated Emissions Test Data

Company:	Tell Technology Inc	Model #:	WipClip-V131C	Req.	FC		
EUT:	Wireless modem for PDA	S/N or FCC #:		Test Dist.	3	meters	
Project #:	J20022674	Test Date:	7, 2001	TP	.68	Watt	
Test Mode:	Tx@824.04MHz	Engineer	Suresh	Min. Attn	41.33		

	Pre-Amp Used			Cable Used				Transducer Used
Number	8	3	13	21	0	0	0	
Model:	CDI_P100	MC 15542	ACO/400	Grn_M+L	None	None	None	

2

Frequency MHz	Reading dB(μV)	Detector P/A/Q	Ant. #	Amp. #	Ant. Pol H/V	Ant. Factor dB(1/m)	Pre-Amp	Insert. Loss	Net dB(μV/m)	ERP mW	Attn. dBc	Margin dB
824.04	100.0	Peak	7	0	V	21.9	0.0	2.0		4.49E+02	0.0	
1648.08	34.4	Peak	8	0	V	26.7	0.0	3.0		4.70E-04	59.8	N/A
1648.08	30.2	Ave.	8	0	V	26.7	0.0	3.0		1.79E-04	64.0	-18.5
2472.12	46.0	Peak	8	8	V	29.1	28.5	2.3		1.42E-05	75.0	-22.7
2472.12	34.8	Ave.	8	8	V	29.1	28.5	2.3		1.08E-06	86.2	-33.7
3296.16	46.4	Peak	8	8	V	31.3	27.9	2.5		3.11E-05	71.6	-44.9
3296.16	39.6	Ave.	8	8	V	31.3	27.9	2.5		6.49E-06	78.4	-30.3
4120.20	42.8	Peak	8	8	V	34.5	27.9	2.9		3.11E-05	71.6	-37.1
4120.20	30.8	Ave.	8	8	V	34.5	27.9	2.9		1.96E-06	83.6	-30.3
4944.24	39.1	Peak	8	8	V	34.0	28.1	3.2		1.21E-05	75.7	-42.3
4944.24	31.6	Ave.	8	8	V	34.0	28.1	3.2		2.15E-06	83.2	-34.4
5768.28	41.6	Peak	8	8	V	36.6	28.3	3.7		4.19E-05	70.3	-41.9
5768.28	31.8	Ave.	8	8	V	36.6	28.3	3.7		4.39E-06	80.1	-29.0
6592.32	41.5*	Peak	8	8	V	36.4	28.0	4.2		4.70E-05	69.8	-38.8
6592.32	31.9*	Ave.	8	8	V	36.4	28.0	4.2		5.16E-06	79.4	-28.5
7316.36	41.6*	Peak	8	8	V	37.0	28.0	4.3		5.65E-05	69.0	-38.1
7316.36	31.9*	Ave.	8	8	V	37.0	28.0	4.3		6.06E-06	78.7	-27.7
8240.04	41.6*	Peak	8	8	V	37.5	27.2	4.8		8.56E-05	67.2	-37.4
8240.04	28.1*	Ave.	8	8	V	37.5	27.2	4.8		3.82E-06	80.7	-25.9

Notes

a) O.C.F.:Other Correction Factor
b) Insert. Loss = Cable A + Cable B + Cable C + Transducer.
c) Net = Reading + Antenna Factor - Pre-Amp + Insert. Loss.
d) Attn. = Field Strength (Fundamental) - Field Strength (Harmonics
e) Negative signs (-) in Margin column signify levels below the limits
f) *Noise Floor level

Radiated Emissions Test Data

ımpar Te Te y:	Model #: WipClip	Req	:C 2.993
EUT	S/N or FCC #:	Test Dist	meter
Project #:	Test Date:	TP	Watt
Test Mode:	:ngineer	Min. Attn 41.33	dBc

	Antenna Used			Pre-Amp Used		Cable Used				
Number	7	6		8	3					
Model:	EM LPA	EMCO	EMCO 3104	CDI_P1000	MC 15542	ACO/400	3m_M+L		None	

Frequency MHz	Reading dB(µV)	Detector P/A/Q	Ant. #	Amp. #	Ant. Pol H/V	Ant. Factor dB(1/m)	Pre-Amp dB	Insert Loss dB	Net dB(µV/m	mW	Attn. dBc	Margin dB
836.01	98.1	Peak	7	0	V	22.2	0.0	2.0	122.3	3.11E+02	0.0	N/A
1672.02	31.9	Peak	8	0	V	26.7	0.0	3.0	61.6	2.64E-04	60.7	-19.4
1672.02	27.6	Ave.	8	0	V	26.7	0.0		57.3	9.82E-05	65.0	-23.7
2508.03	52.4	Peak	8	8	V	30.6	28.5		56.8	8.76E-05	65.5	-24.2
2508.03	50.7	Ave.	8	8	V	30.6	28.5		55.1	5.92E-05	67.2	-25.9
3344.04	48.2	Peak	8	8	V		27.9		54.1	4.70E-05	68.2	-26.9
3344.04	44.2	Ave.	8	8	V		27.9		50.1		72.2	-30.9
4180.05	41.5	Peak	8	8	V	34.5	27.9		51.0	2.30E-05	71.3	-30.0
4180.05	31.5	Ave.	8	8	V	34.5	27.9		41.0	2.30E-06	81.3	-40.0
5016.06	41.6	Peak	8	8	V	35.4	28.3		52.2	3.04E-05	70.1	-28.8
5016.06	31.5	Ave.	8	8	V	35.4	28.3	3.5	42.1	2.97E-06	80.2	-38.9
5852.07	42.1	Peak	8	8	V	36.6	28.3	3.7	54.1	4.70E-05	68.2	-26.9
5852.07	31.4	Ave.	8	8	V	36.6	28.3	3.7	43.4	4.00E-06	78.9	-37.6
6688.08	42.0*	Peak	8	8	V	36.4	28.0	4.2	54.6	5.28E-05	67.7	-26.4
6688.08	30.5*	Ave.	8	8	V	36.4	28.0	4.2	43.1			
4.09	38.4*	Peak	8	8	V	37.8	28.0	4.6	52.8	3.49E-		
4.09	30.5*	Ave.	8	8	V	37.8	28.0	4.6	44.9	5.65E	77.4	
	38.8*	Peak	8	8	V			4.8	53.9	4.49E	68.4	-27
	28.3*	Ave.	8	8	V			4.8	43.4	4.00E	78.9	-37

Notes

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Insert. Lc at ible insducer

Net = Re: ınte ert. Loss

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8.2.e

Radiated Emissions Test Data

Company:	Tellus Tecnology Inc	Model #:	Wip Clip-V131C		Req	FCC 2.993	
EUT:	Wireless modem for PDA	S/N or FCC #:			Test Dist	3	meters
Project #:	J20022674	Test Date:	Jan 17, 2001		TP	0.60	Watt
Test Mode:	Tx @ 848.97	Engineer:	Suresh K.		Min Attn	40.78	dBc

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	7	8	12	8	3	13	21	0	0	0
Model:	EM LPA-25	EMCO 3115	EMCO 3104	CDI_P1000	MC 15542	ACO/400	Gm_M+L	None	None	None

2

Frequency	Reading	Detector	Ant.	Amp.	Ant. Pol.	Ant. Factor	Pre-Amp	Insert. Loss	Net	ERP	Attn.	Margin
MHz	dB(µV)	P/A/Q	#	#	H/V	dB(1/m)	dB	dB	dB(µV/m)	mW	dBc	dB
848.97	96.8	Peak	7	0	V	22.0	0.0	2.0	120.8	2.20E+02	0.0	N/A
1697.94	32.5	Peak	8	0	V	26.7	0.0	3.0	62.2	3.04E-04	58.6	-17.8
1697.94	27.1	Ave.	8	0	V	26.7	0.0	3.0	56.8	8.76E-05	64.0	-23.2
2546.91	55.5	Peak	8	8	V	30.6	28.5	2.3	59.9	1.79E-04	60.9	-20.1
2546.91	51.6	Ave.	8	8	V	30.6	28.5	2.3	56.0	7.28E-05	64.8	-24.0
3395.88	51.1	Peak	8	8	V	31.3	27.9	2.5	57.0	9.17E-05	63.8	-23.0
3395.88	46.9	Ave.	8	8	V	31.3	27.9	2.5	52.8	3.49E-05	68.0	-27.2
4244.85	36.6	Peak	8	8	V	34.5	27.9	2.9	46.1	7.45E-06	74.7	-33.9
4244.85	24.2	Ave.	8	8	V	34.5	27.9	2.9	33.7	4.29E-07	87.1	-46.3
5093.82	34.8	Peak	8	8	V	35.4	28.3	3.5	45.4	6.34E-06	75.4	-34.6
5093.82	24.6	Ave.	8	8	V	35.4	28.3	3.5	35.2	6.06E-07	85.6	-44.8
5942.79	41.2	Peak	8	8	V	36.6	28.3	3.7	53.2	3.82E-05	67.6	-26.8
5942.79	34.2	Ave.	8	8	V	36.6	28.3	3.7	46.2	7.63E-06	74.6	-33.8
6791.76	32.2*	Peak	8	8	V	36.4	28.0	4.2	44.8	5.52E-06	76.0	-35.2
6791.76	23.5*	Ave.	8	8	V	36.4	28.0	4.2	36.1	7.45E-07	84.7	-43.9
7640.73	31.8*	Peak	8	8	V	37.8	27.8	4.6	46.4	7.99E-06	74.4	-33.6
7640.73	21.1*	Ave.	8	8	V	37.8	27.8	4.6	35.7	6.80E-07	85.1	-44.3
8489.70	30.6*	Peak	8	8	V	37.5	27.1	4.8	45.8	6.95E-06	75.0	-34.2
8489.70	20.9*	Ave.	8	8	V	37.5	27.1	4.8	36.1	7.45E-07	84.7	-43.9

Notes:

a) O.C.F.:Other Correction Factor

b) Insert. Loss = Cable A + Cable B + Cable C + Transducer.

c) Net = Reading + Antenna Factor - Pre-Amp + Insert. Loss.

d) Attn. = Field Strength (Fundamental) - Field Strength (Harmonics).

e) Negative signs (-) in Margin column signify levels below the limits.

f) * Ambient Noise Floor level

8.3.f

Spurious Emissions Attenuation Measured by substitution method

Company: Tellus Technology Inc EUT: Wireless Modem for PDA Model: WipClip-V131C

Frequency MHz	Field from EUT dBuv/m	Signal Generator Level required to generate same field as EUT; dBm	ERP dBm	Attenuation dBm
824.04	126.0		25.9	-
1648.08	64.1	-45.20	-40.3	66.2
2472.12	48.9	-58.60	-53.10	79.00
3296.16	52.3	-52.40	-46.40	72.30
4120.20	52.3	-51.50	-45.50	71.40
4944.24	48.2	-57.10	-50.50	76.40
5768.28	53.6	-51.90	-45.30	71.20
6592.32	54.1	-51.70	-43.80	69.70
7416.36	54.9	-50.30	-42.50	68.40
8240.40	56.7	-50.10	-41.20	67.10

8.3.9

Spurious Emissions Attenuation Measured by substitution method

Company: Tellus Technology Inc EUT: Wireless Modem for PDA Model: WipClip-V131C

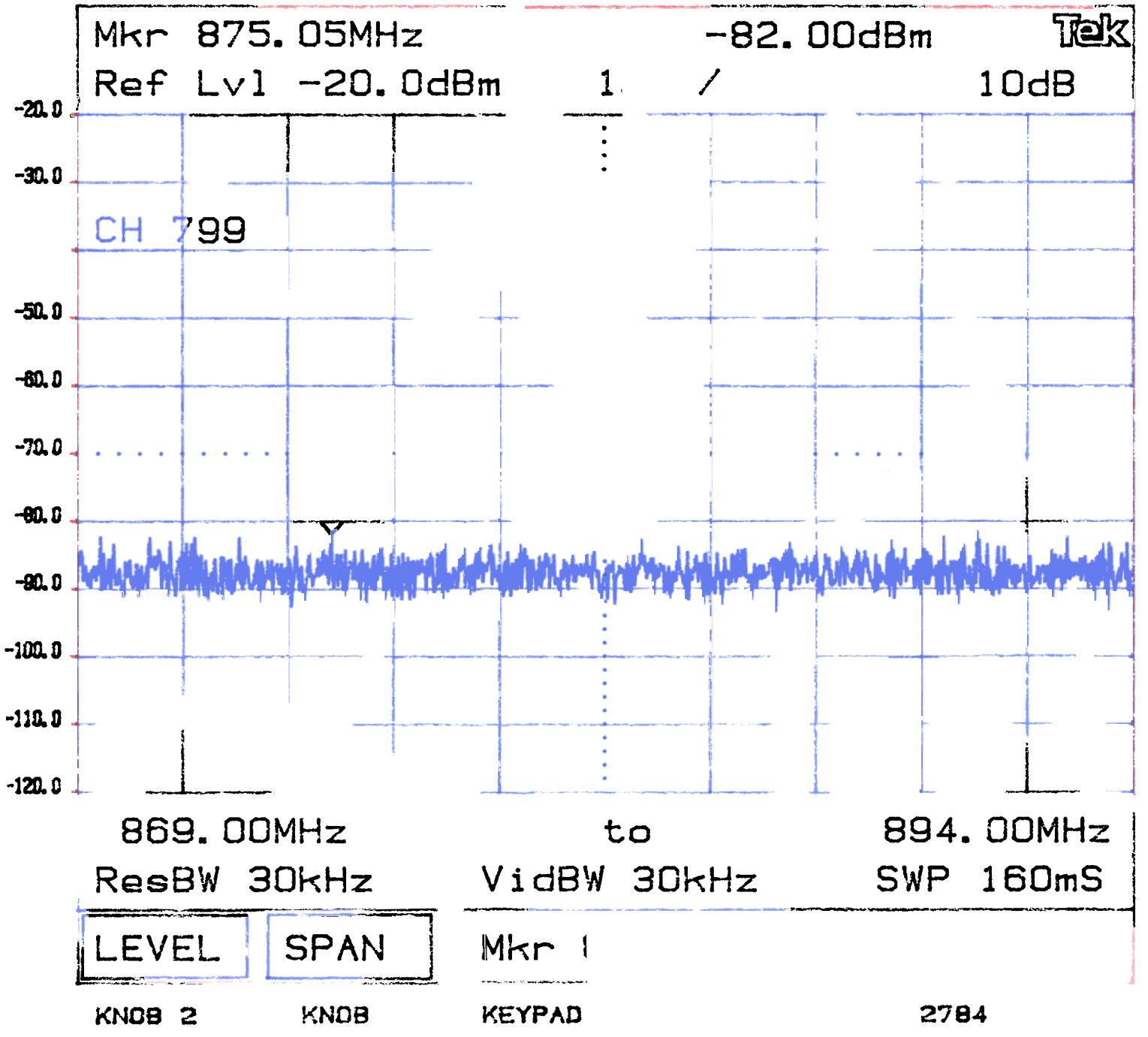
Frequency MHz	Field from EUT dBuv/m	Signal Generator Level required to generate same field as EUT; dBm	ERP dBm	Attenuation dBm
836.01	124.4		24.4	-
1672.02	61.6	-47.70	-42.8	67.2
2508.03	56.8	-50.70	-45.20	69.60
3344.04	54.1	-50.60	-44.60	69.00
4180.05	51.0	-52.80	-46.80	71.20
5016.06	52.2	-53.10	-46.50	70.90
5852.07	54.1	-51.40	-44.80	69.20
6688.08	54.1	-51.70	-43.80	68.20
7524.09	52.8	-52.40	-44.60	69.00
8360.10	53.9	-52.90	-44.00	68.40

8.3.h

Spurious Emissions Attenuation Measured by substitution method

Company: Tellus Technology Inc EUT: Wireless Modem for PDA Model: WipClip-V131C

Frequency MHz	Field from EUT dBuv/m	Signal Generator Level required to generate same field as EUT; dBm	ERP dBm	Attenuation dBm
848.97	122.9		22.9	-
1697.94	62.2	-47.10	-42.2	65.1
2546.91	59.9	-47.60	-42.10	65.00
3395.88	57.0	-47.70	-41.70	64.60
4244.85	46.1	-57.70	-51.70	74.60
5093.82	45.4	-59.90	-53.30	76.20
5942.79	53.2	-52.30	-45.70	68.60
6791.76	44.8	-61.00	-53.10	76.00
7640.73	46.4	-58.80	-51.00	73.90
8489.70	45.8	-61.00	-52.10	75.00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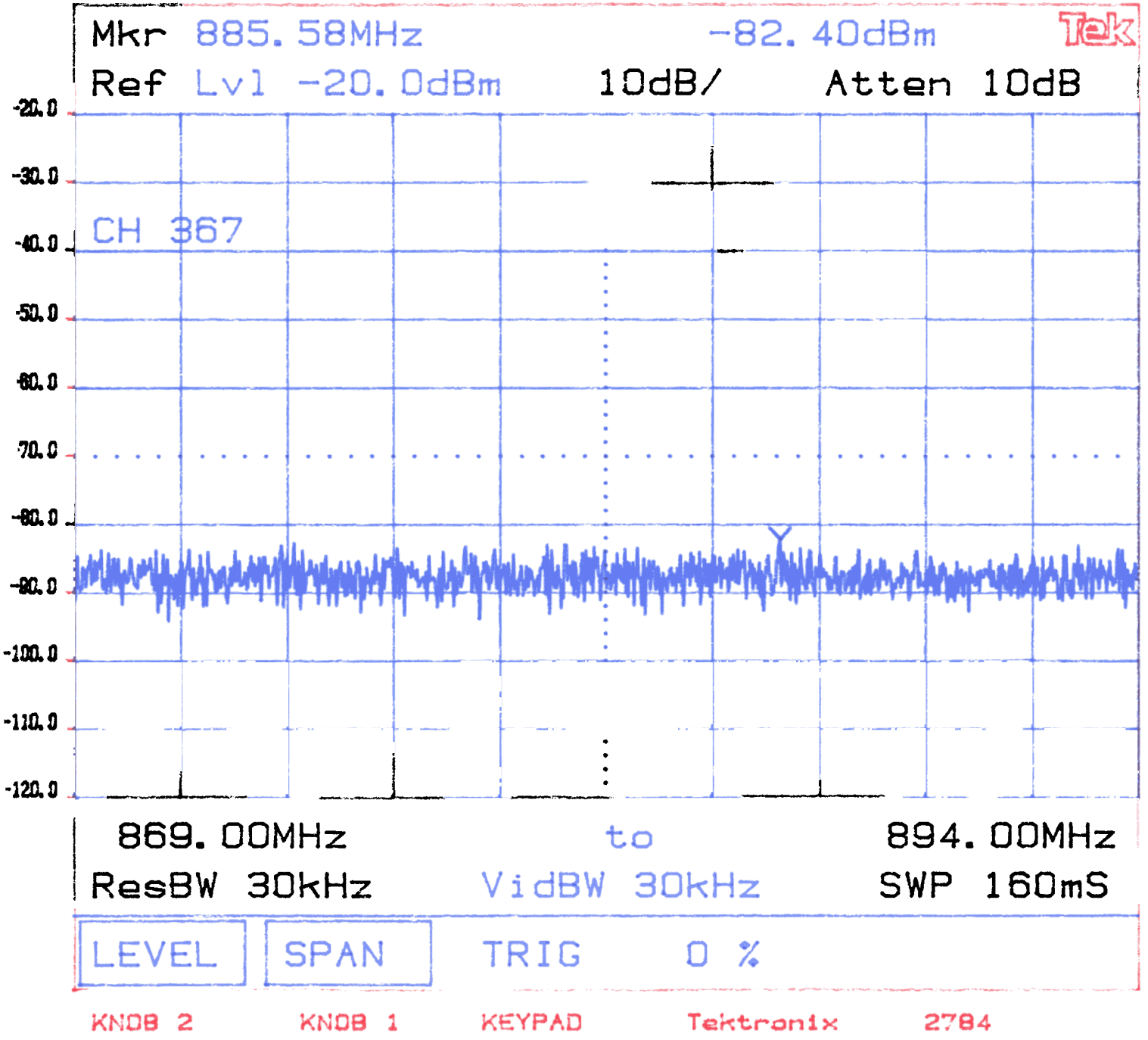
2784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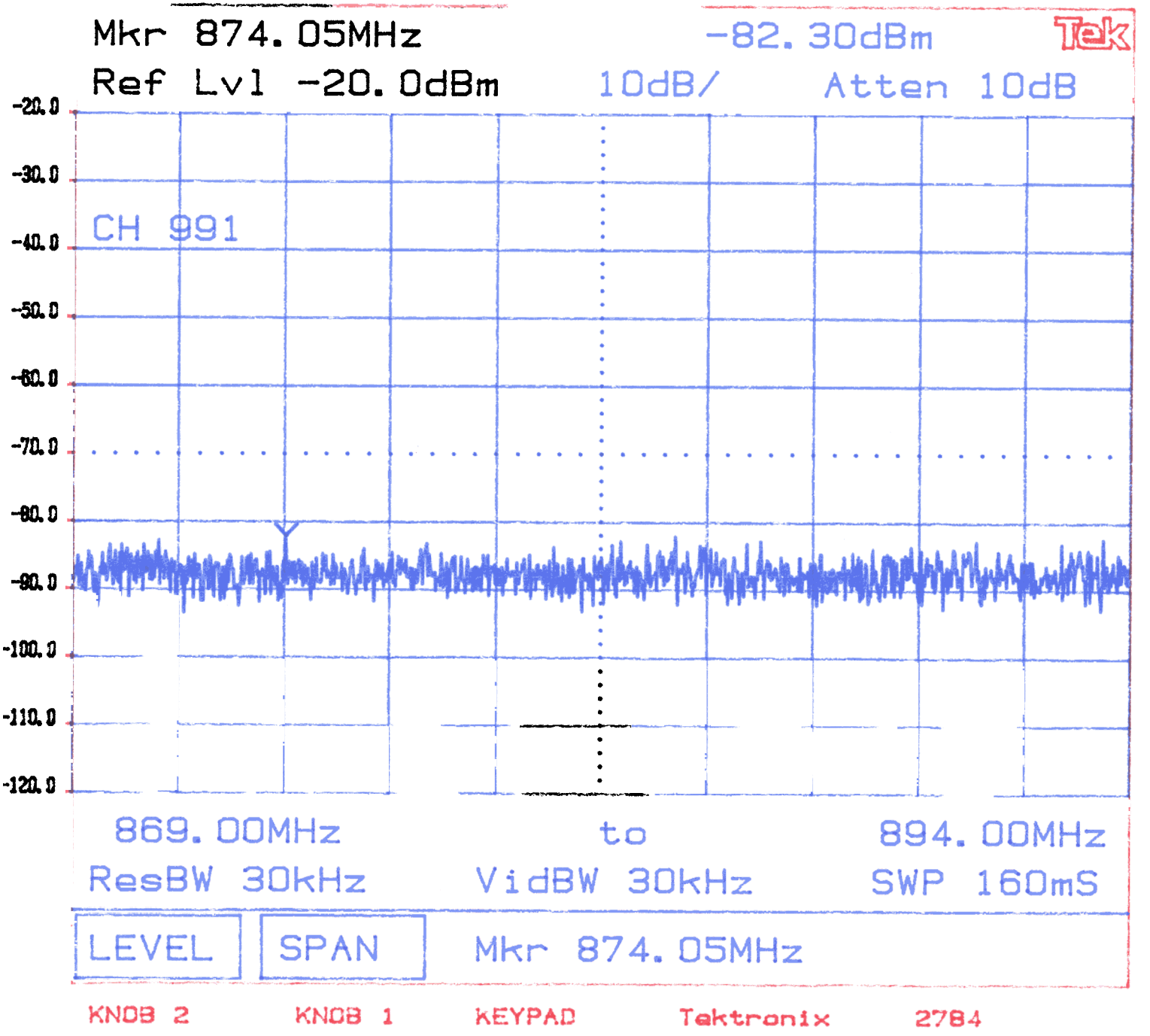
Tektronix
2784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-90.0
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-120.0
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to
894.00MHz
ResBW 30kHz
VidBW 30kHz
SWP 160mS
LEVEL
SPAN
Mkr 874.05MHz
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784

Tellus Technology Inc. Wireless Modem
FCC ID: NZ6V8131C

Date of Test: January15 –18 &30, 2001

9.0 Line Conducted Emissions
FCC 15.107

9. Test Procedure

Test Not Applicable
Test procedure described in the ANSI C63.4 Standard was employed.

The EUT was connected to the DC power supply that was connected to the AC line through the LISNs.

Both HOT and NEUTRAL leads were tested.

9.2 Test Results

Test not applicable as EUT is Battery Operated

Tellus Technology Inc, Wireless Modem
FCC ID: NZ6V8131C

Date of Test: January15 –18 &30, 2001

10.0 Frequency Stability vs Temperature
FCC 2.1055, □ 22.355

Frequency Tolerance: 2.5 ppm

Test Procedure

The equipment under test was connected to an external DC power supply and the RF output was connected to a frequency counter via feedthrough attenuators. The EUT was placed inside the temperature chamber. The DC leads, RF output cable, and external PTT cable exited the chamber through an opening made for that purpose.

After the temperature stabilized for approximately 20 minutes, the external PTT switch was activated, and the frequency output was recorded from the counter.

Test Equipment

Temperature Chamber, -50C to +100C
Hewlett Packard 5383A Frequency Counter
HP Power Supply, 6236B
Rohde & Schwarz ESVP Test Receiver

10.3 Test Results

Test Result:	Passed

Frequency: 836.01 MHz Tolerance: +/- 2091 Hz		
Temperature (°C)	Frequency (MHz)	Difference (" Hz)
60	836.009277	-723
50	836.010049	49
40	836.010179	179
30	836.009917	-83
20	836.009694	-306
10	836.009581	-419
0	836.009806	-194
-10	836.010738	738
-20	836.011400	1400
-30	836.011575	1575

Tellus Technology Inc, Wireless Modem
FCC ID: NZ6V8131C

Date of Test: January15 –18 &30, 2001

11.0 Frequency Stability vs Voltage
FCC 2.1055, 22.355

Frequency Tolerance: 2.5 ppm

Test Procedure

An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminates; i.e., the battery end point. The output frequency was recorded for each battery voltage.

11.2 Test Equipment

Hewlett Packard 5383A Frequency Counter
HP DC Power Supply Model 6236B
Rohde & Schwarz ESVP Test Receiver

11.3 Test Results.

Test Result:	Passed

Frequency: 836.01 MHz Tolerance: +/- 2091 Hz		
Supply (Battery) Volts	Frequency (MHz)	Difference (Hz)
3.4	836.010084	84
3.6	836.010128	128
3.9	836.010177	177
4.5	836.010199	199

Tellus Technology Inc, Wireless Modem
FCC ID: NZ6V8131C

Date of Test: January15 –18 &30, 2001

12.0 List of test equipment

Equipment	Manufacturer	Model	Serial #	Cal. Int.	Cal. Due	Used
Bi-log Antenna	EMCO	3104	3789	12	04/10/01	X
Log Periodic Antenna	EMCO	LPA-25	1079	12	04/10/01	X
Double-ridged Horn Antenna	EMCO	3115	8812-3049	12	02/24/01	X
Double-ridged Horn Antenna	EMCO	3115	9107-3712	12	6/25/01	X
Half-wave dipole	Roberts		332	12	08/16/01	X
Pre-amplifier	CDI	P1000	N/A	12	11/14/00	X
Pre-amplifier	Avantek	AFT18855	8723H705	12	11/14/00	X
Spectrum Analyzer w/8650 QP Adapter	Hewlett Packard	HP 8566B	2416A00317 2521A01021	6	2/03/01	X
Spectrum Analyzer	Tektronix	2784	B3020108	12	8/4/01	X
Peak Power Meter	Hewlett Packard	8900D	3607U00673	12	7/31/01	X
Peak Power Sensor	Hewlett Packard	84811A	3318A05091	12	12/7/99	X
Signal generator	Hewlett Packard	8663	2537A00214	12	6/13/01	X