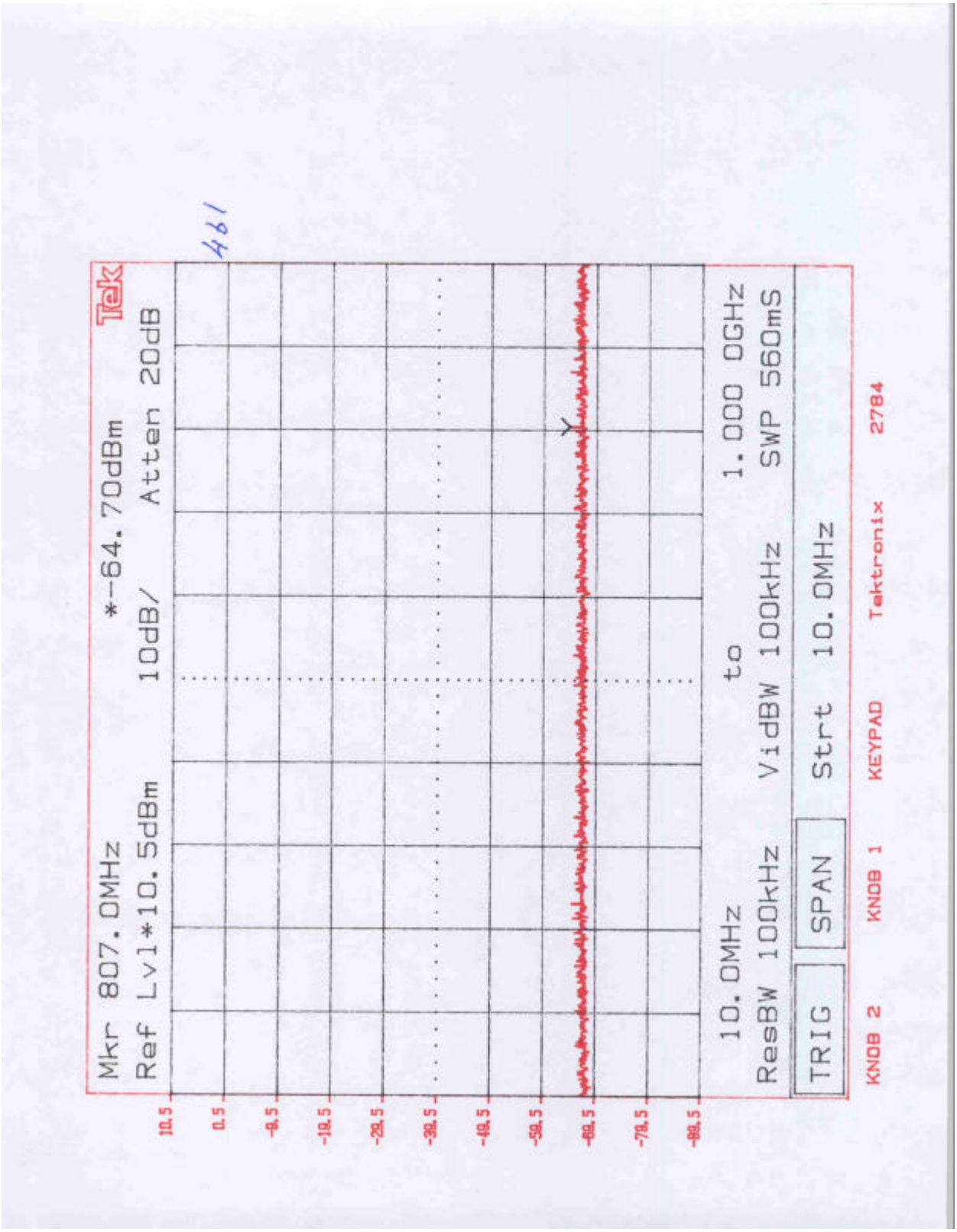
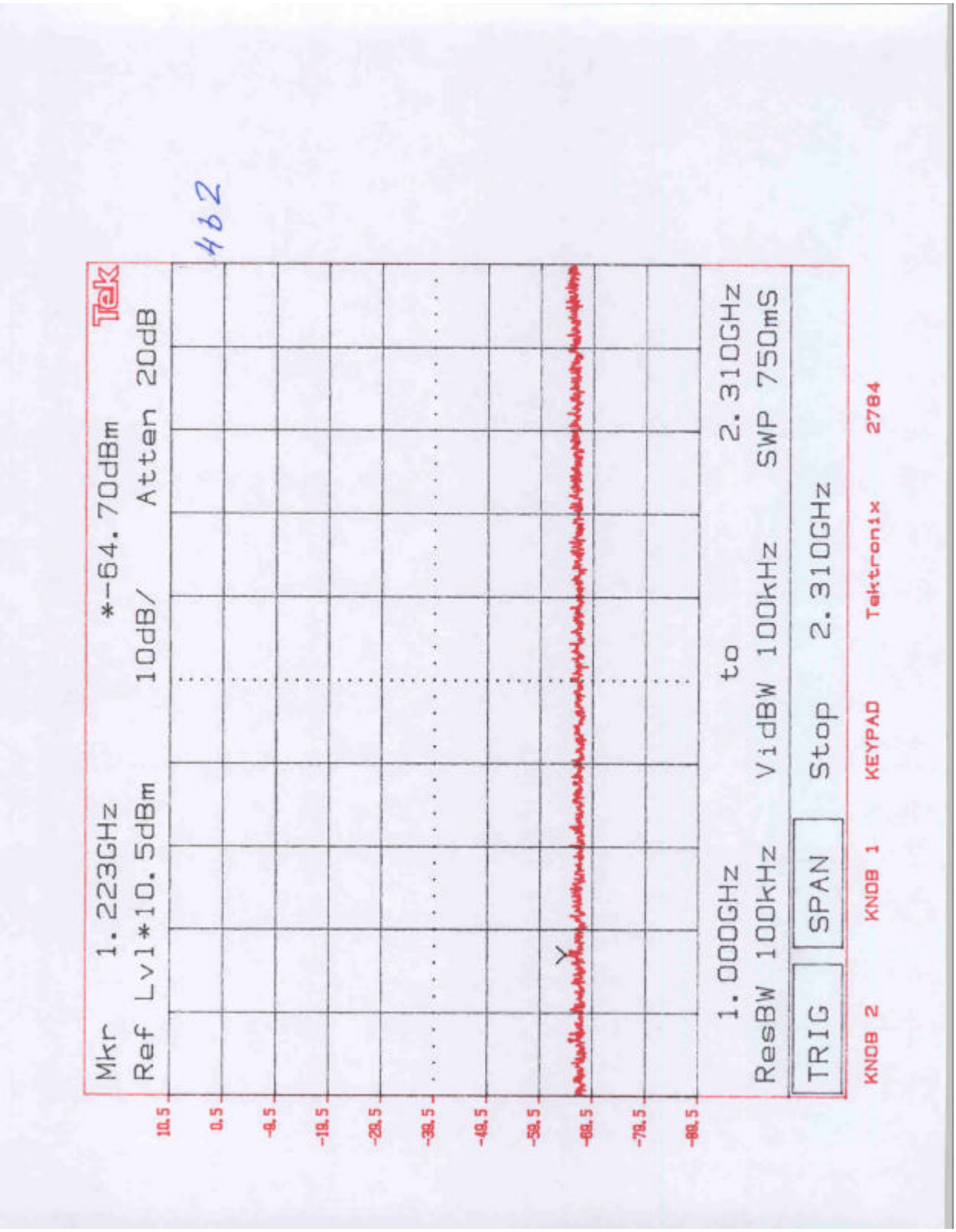
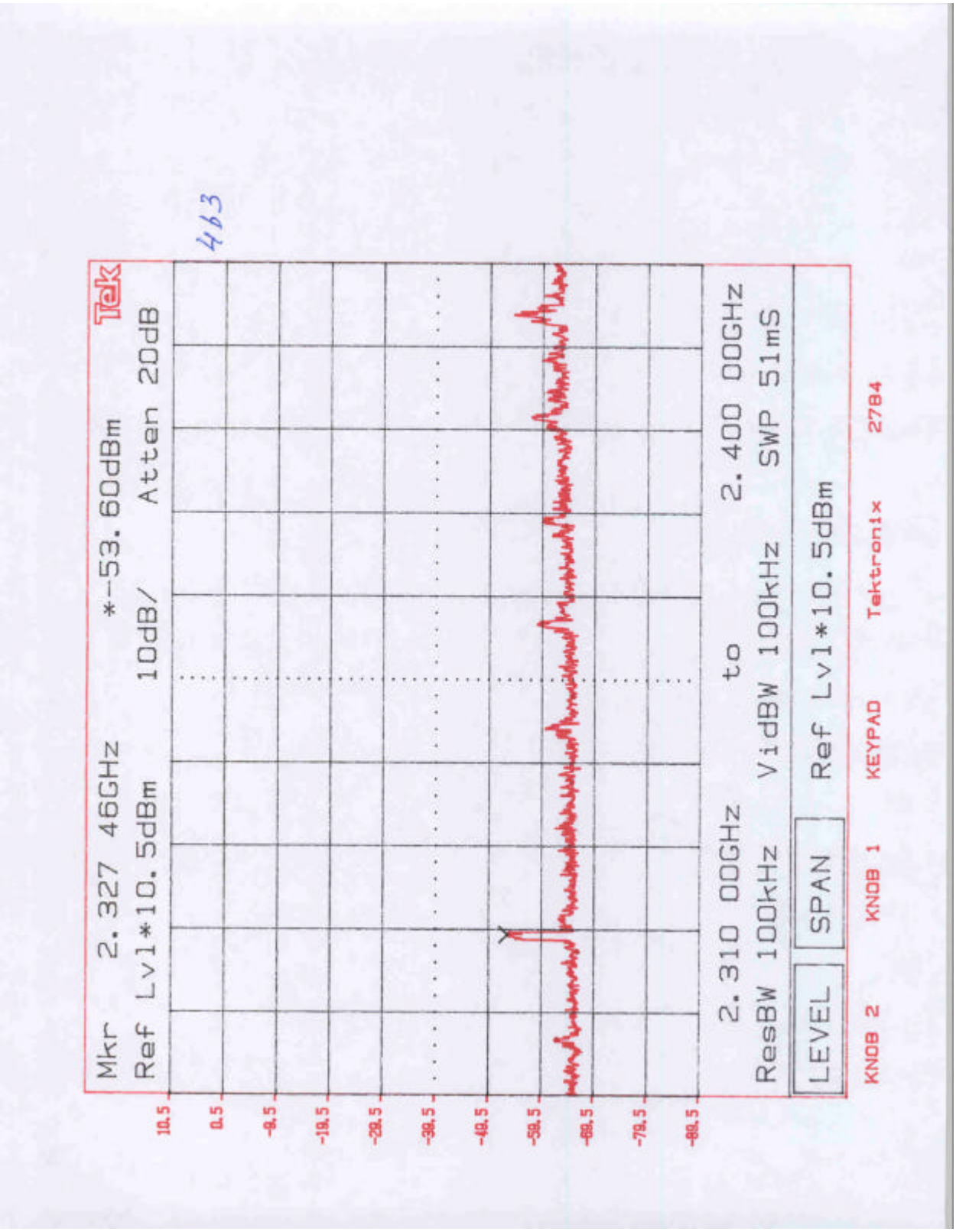
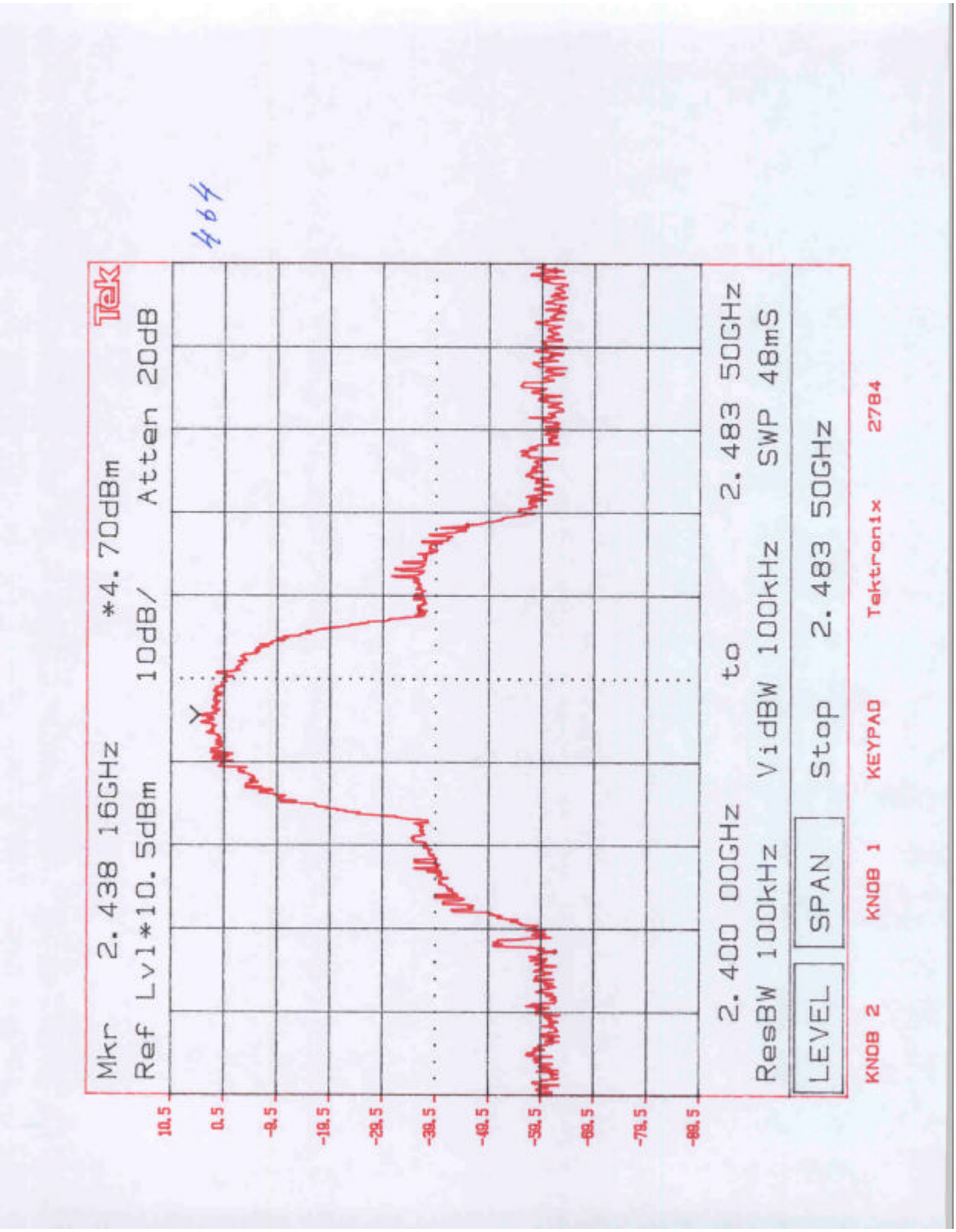
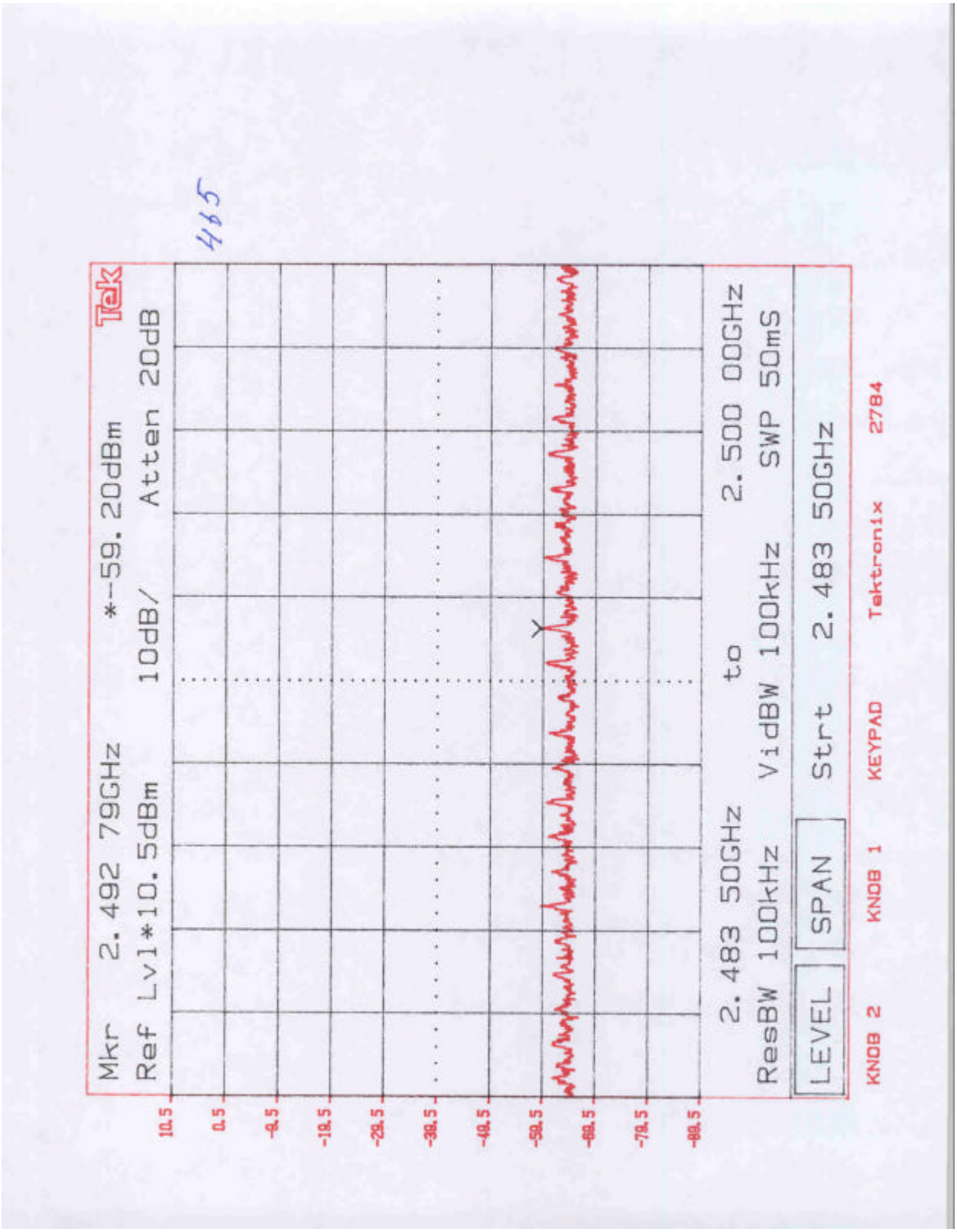
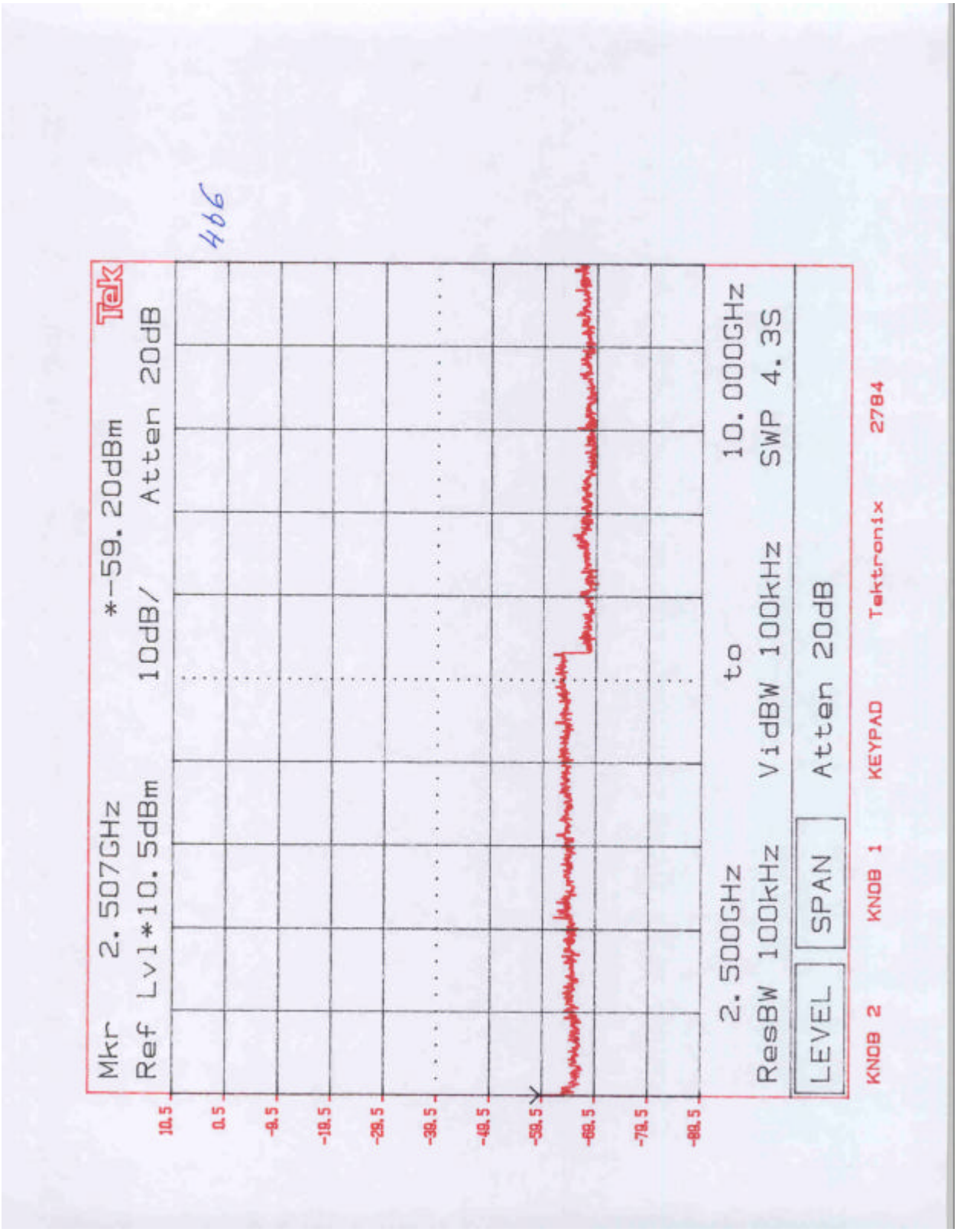

461
Tek
Mkr 807.0MHz
Ref Lvl*10.5dBm
*-64.70dBm
10dB/
Atten 20dB
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
10.0MHz
ResBW 100kHz
to
1.000 0GHz
VidBW 100kHz
SWP 560mS
TRIG
SPAN
Strt 10.0MHz
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784

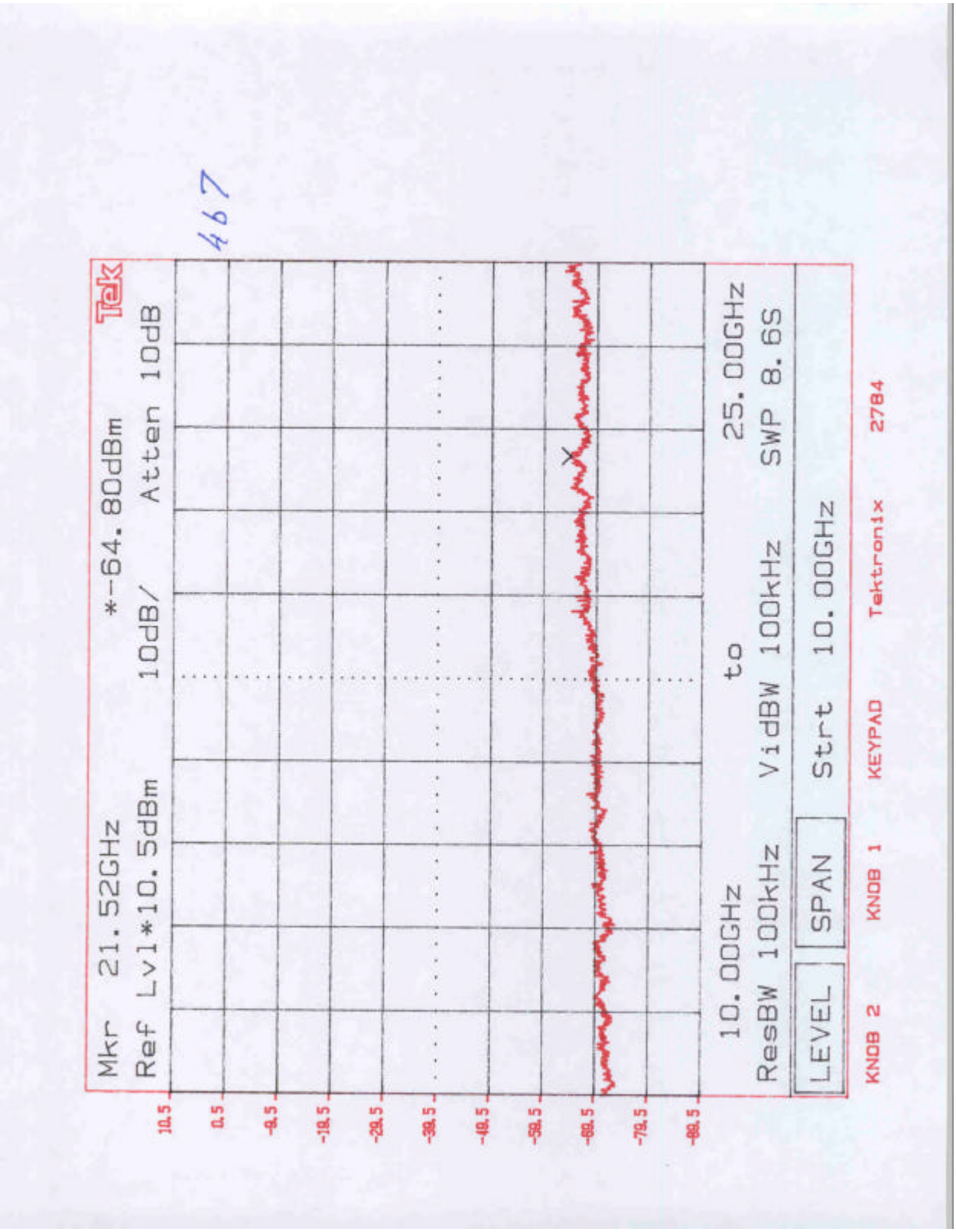

462
Tek
Mkr 1.223GHz
Ref Lvl*10.5dBm
*-64.70dBm
10dB/ Atten 20dB
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
1.000GHz
ResBW 100kHz
to
2.310GHz
VidBW 100kHz
SWP 750mS
TRIG
SPAN
Stop 2.310GHz
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784

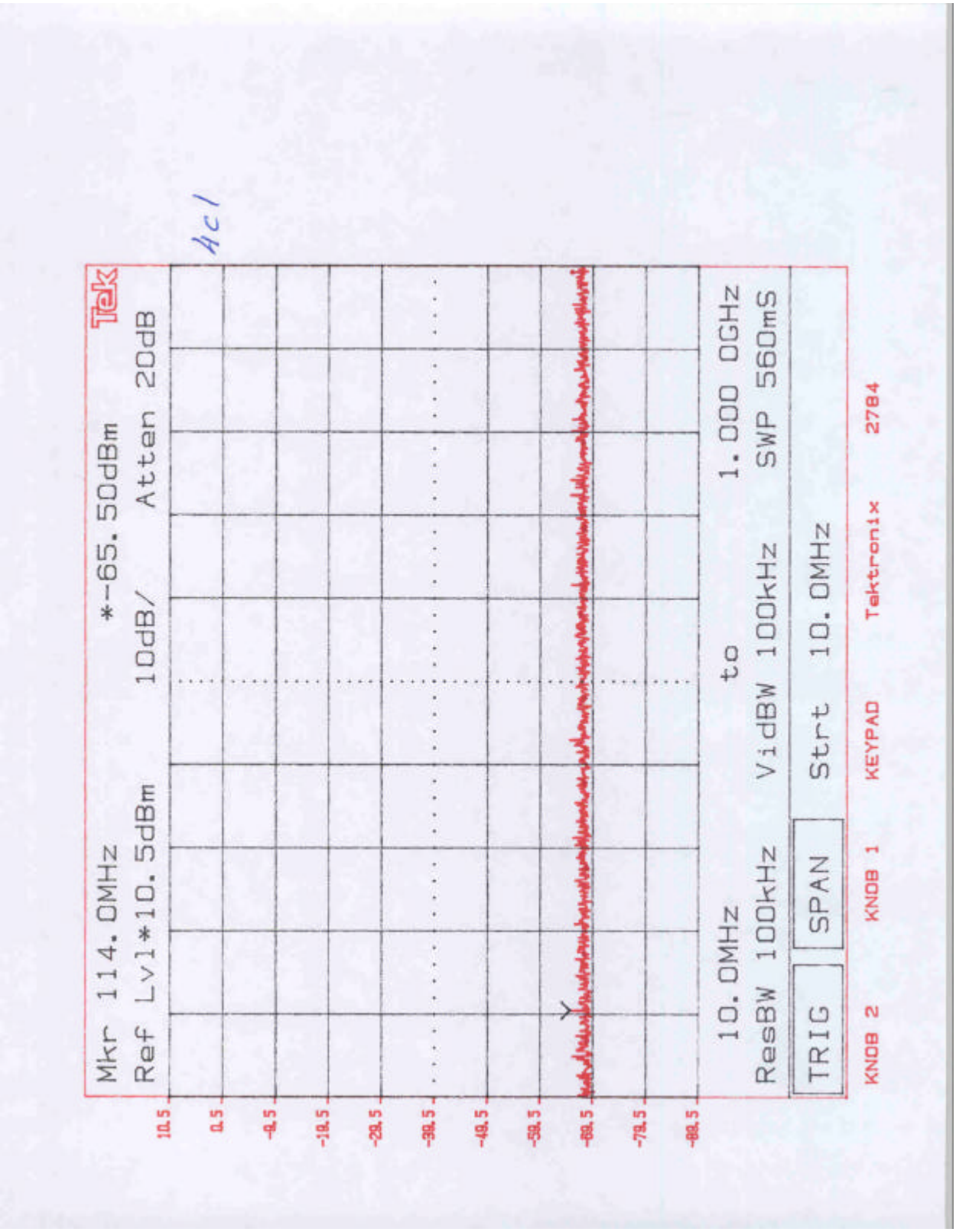

Mkr 2.327 46GHz
*-53.60dBm
Ref Lvl*10.5dBm
10dB/
Atten 20dB
Tek
2.310 00GHz
to
2.400 00GHz
ResBW 100kHz
VidBW 100kHz
SWP 51mS
LEVEL
SPAN
Ref Lvl*10.5dBm
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5

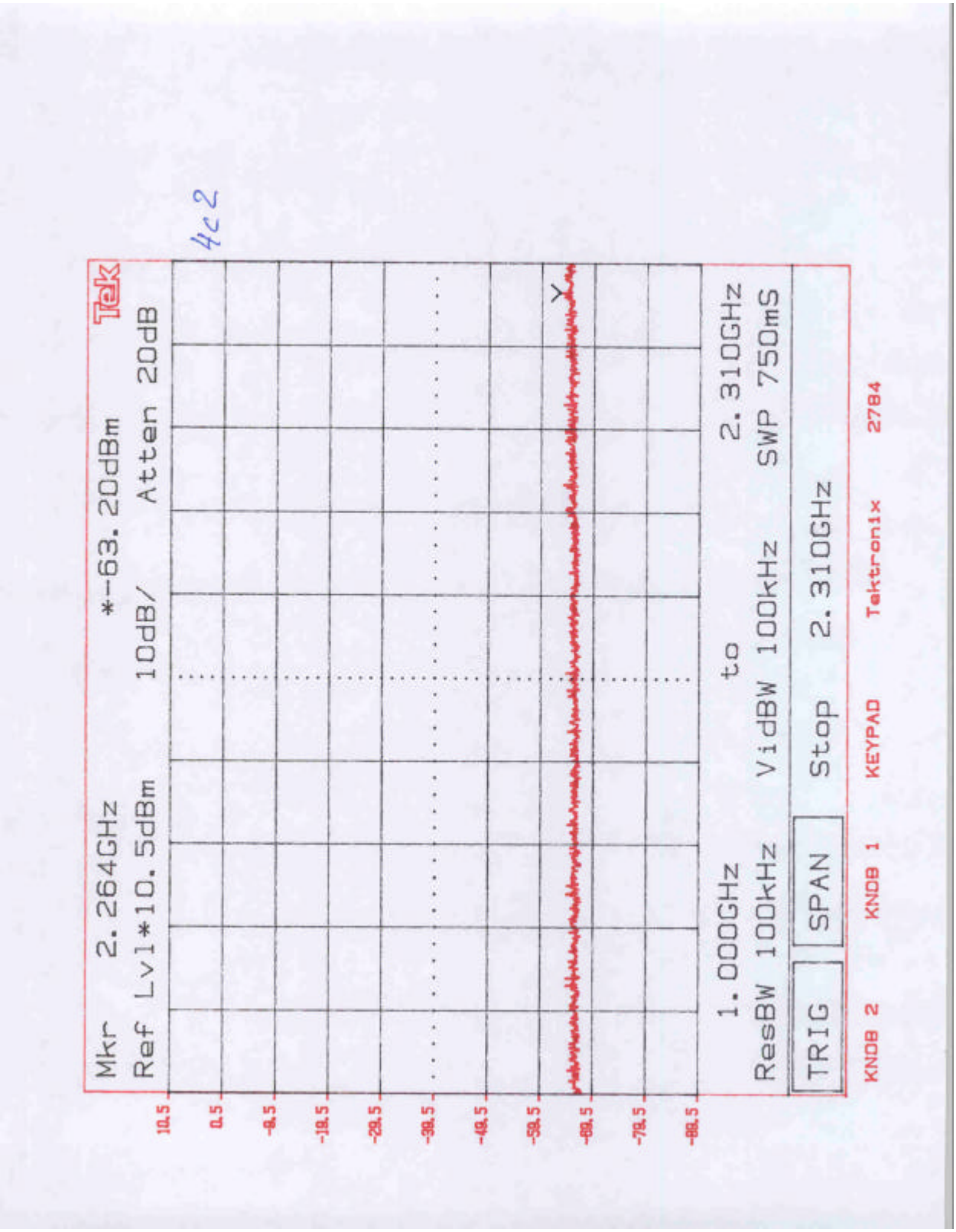

464
Tek
Mkr 2.438 16GHz
Ref Lvl*10.5dBm
*4.70dBm
10dB/
Atten 20dB
2.400 00GHz
ResBW 100kHz
to
2.483 50GHz
VidBW 100kHz
SWP 48mS
LEVEL
SPAN
Stop 2.483 50GHz
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5

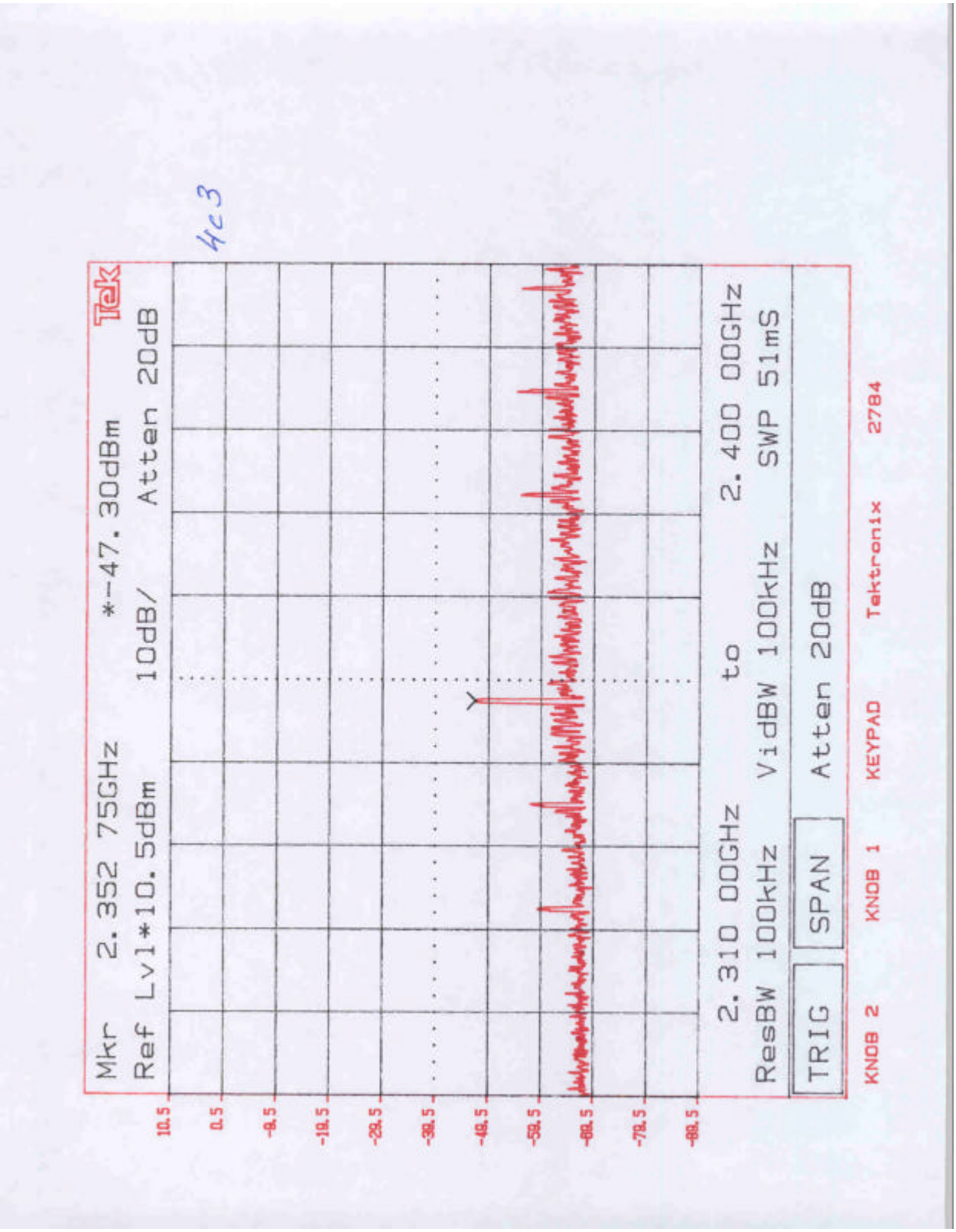

Mkr 2.492 79GHz
*-59.20dBm
Ref Lvl*10.5dBm
10dB/
Atten 20dB
Tek
2.483 50GHz
to
2.500 00GHz
ResBW 100kHz
VidBW 100kHz
SWP 50mS
LEVEL
SPAN
Strt 2.483 50GHz
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5

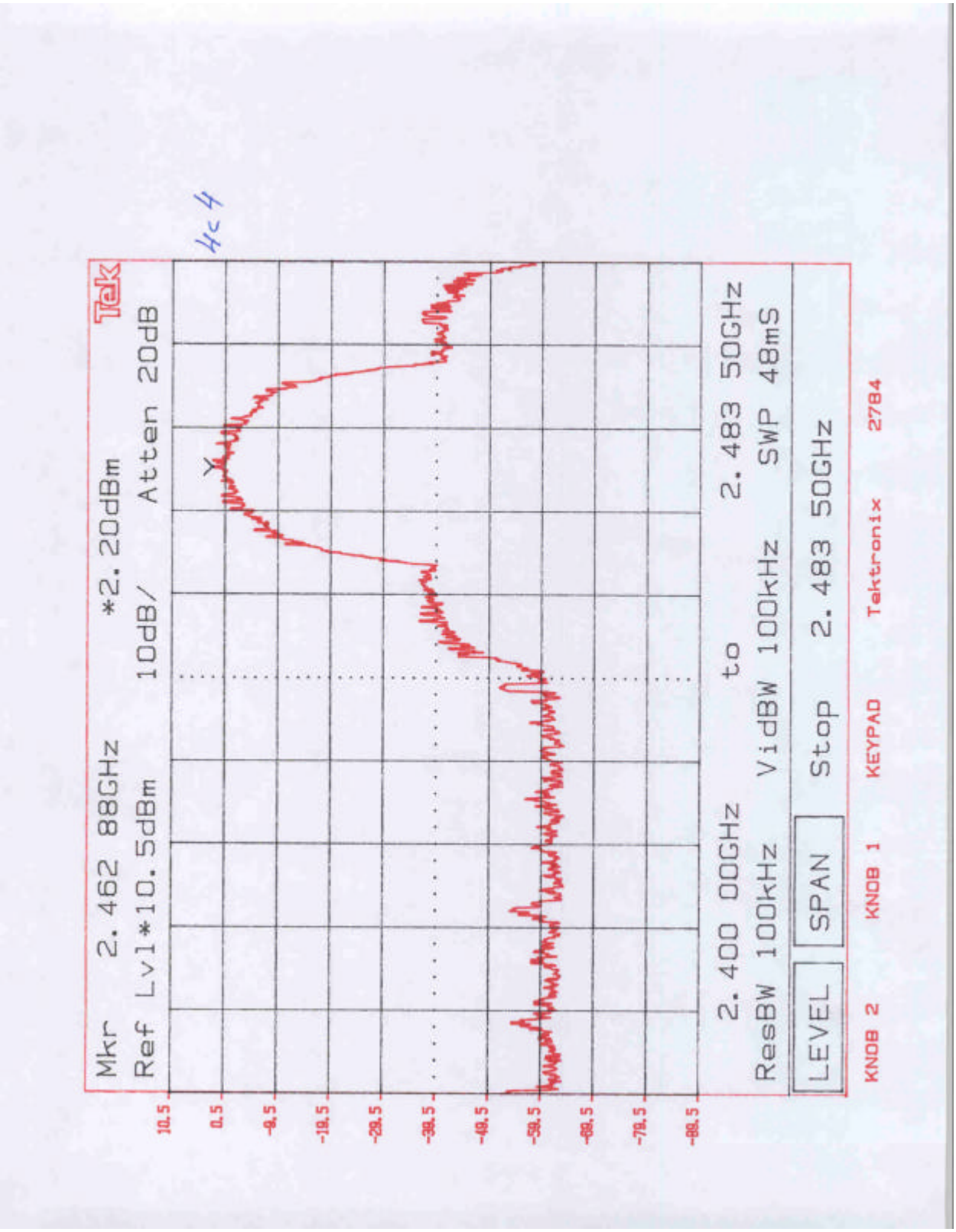

406
Tek
Mkr 2.507GHz *-59.20dBm
Ref Lvl*10.5dBm 10dB/ Atten 20dB
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
2.500GHz to 10.000GHz
ResBW 100kHz VidBW 100kHz SWP 4.3S
LEVEL SPAN Atten 20dB
KNOB 2 KNOB 1 KEYPAD Tektronix 2784

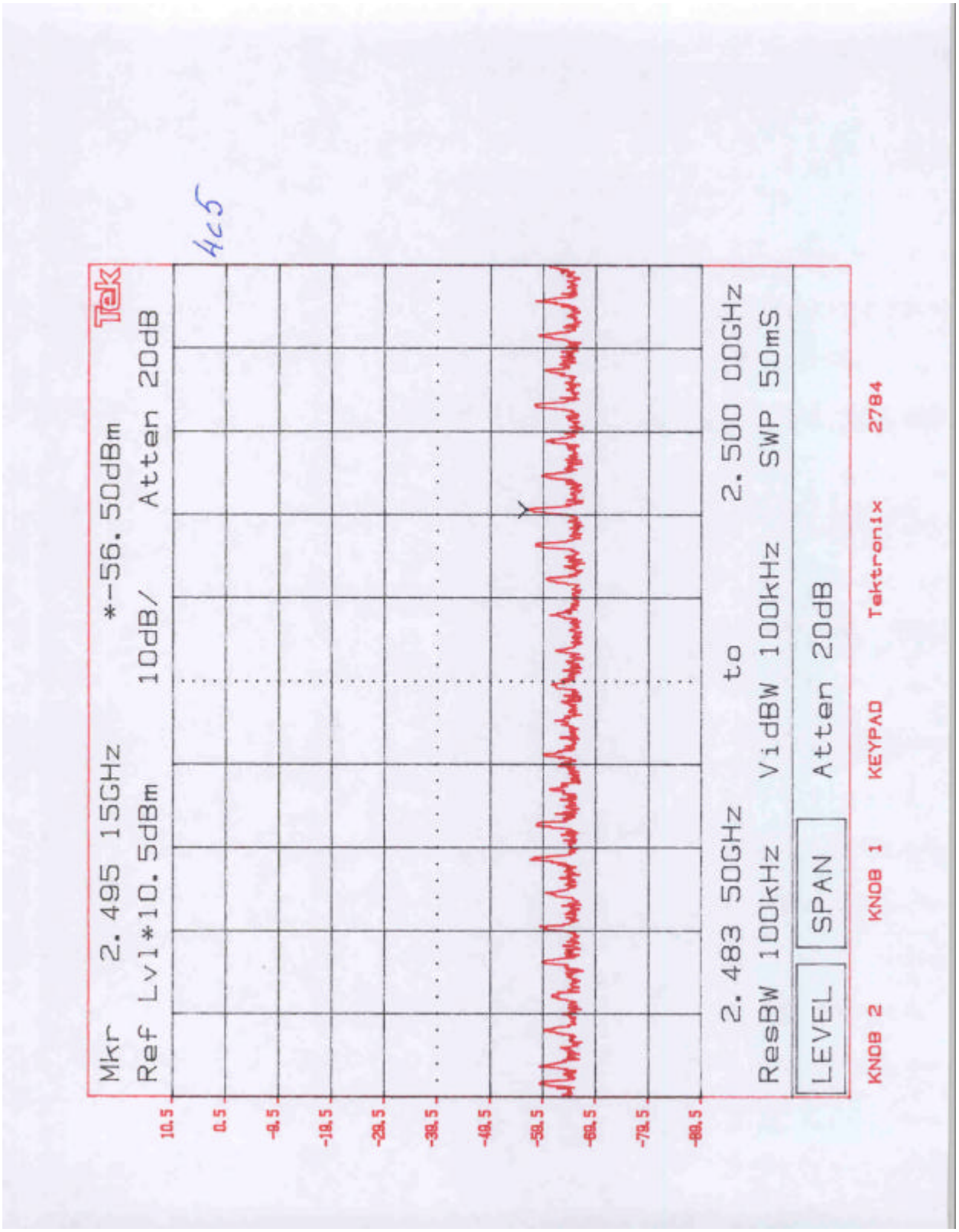

467
Tek
Mkr 21.52GHz
Ref Lvl*10.5dBm
*-64.80dBm
10dB/ Atten 10dB
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
10.00GHz
ResBW 100kHz
to
25.00GHz
VidBW 100kHz
SWP 8.6S
LEVEL
SPAN
Strt 10.00GHz
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784

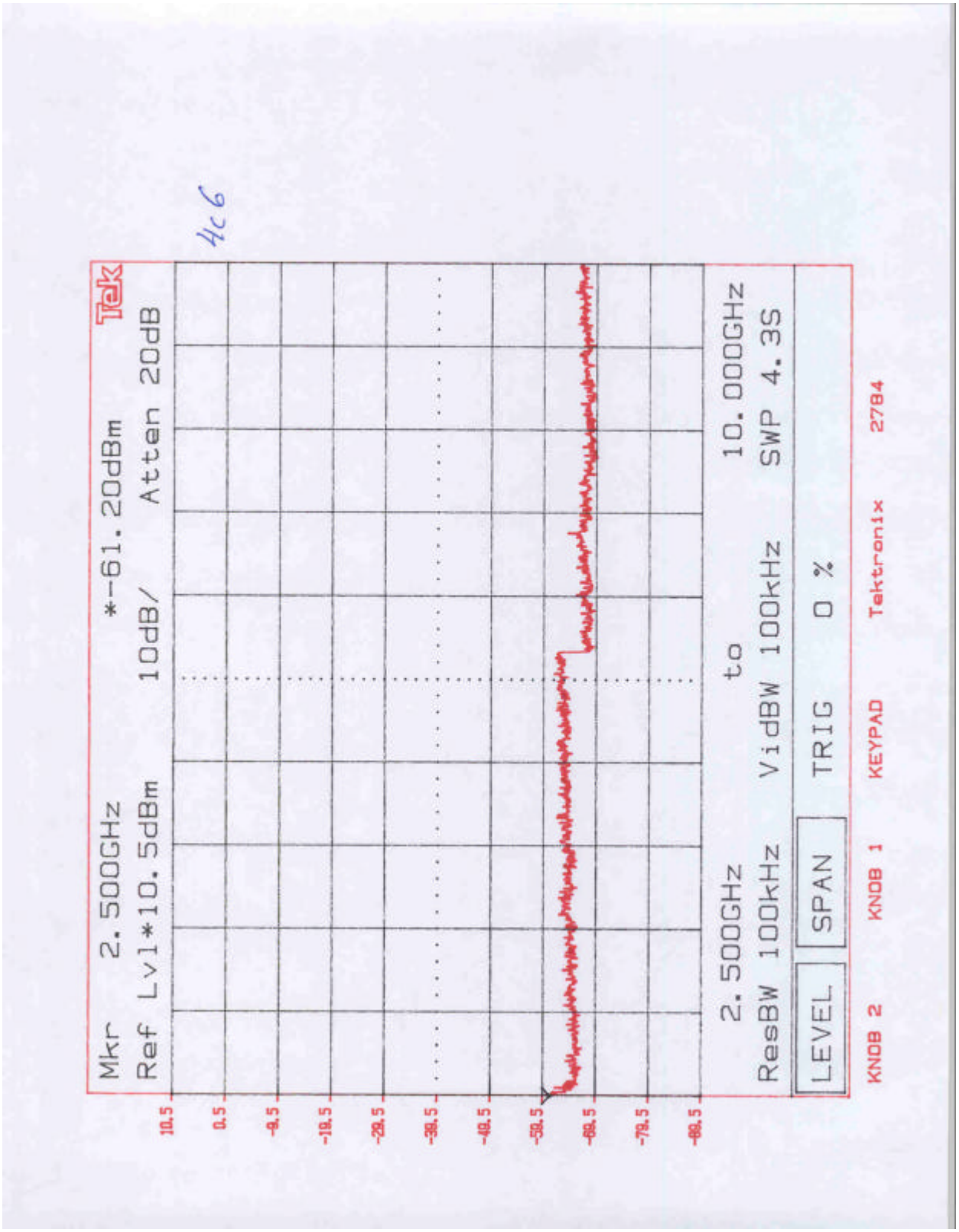

Mkr 114.0MHz
Ref Lvl*10.5dBm
*-65.50dBm
10dB/
Atten 20dB
Tek
4c1
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
10.0MHz
ResBW 100kHz
to
1.000 0GHz
VidBW 100kHz
SWP 560mS
TRIG
SPAN
Strt 10.0MHz
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784

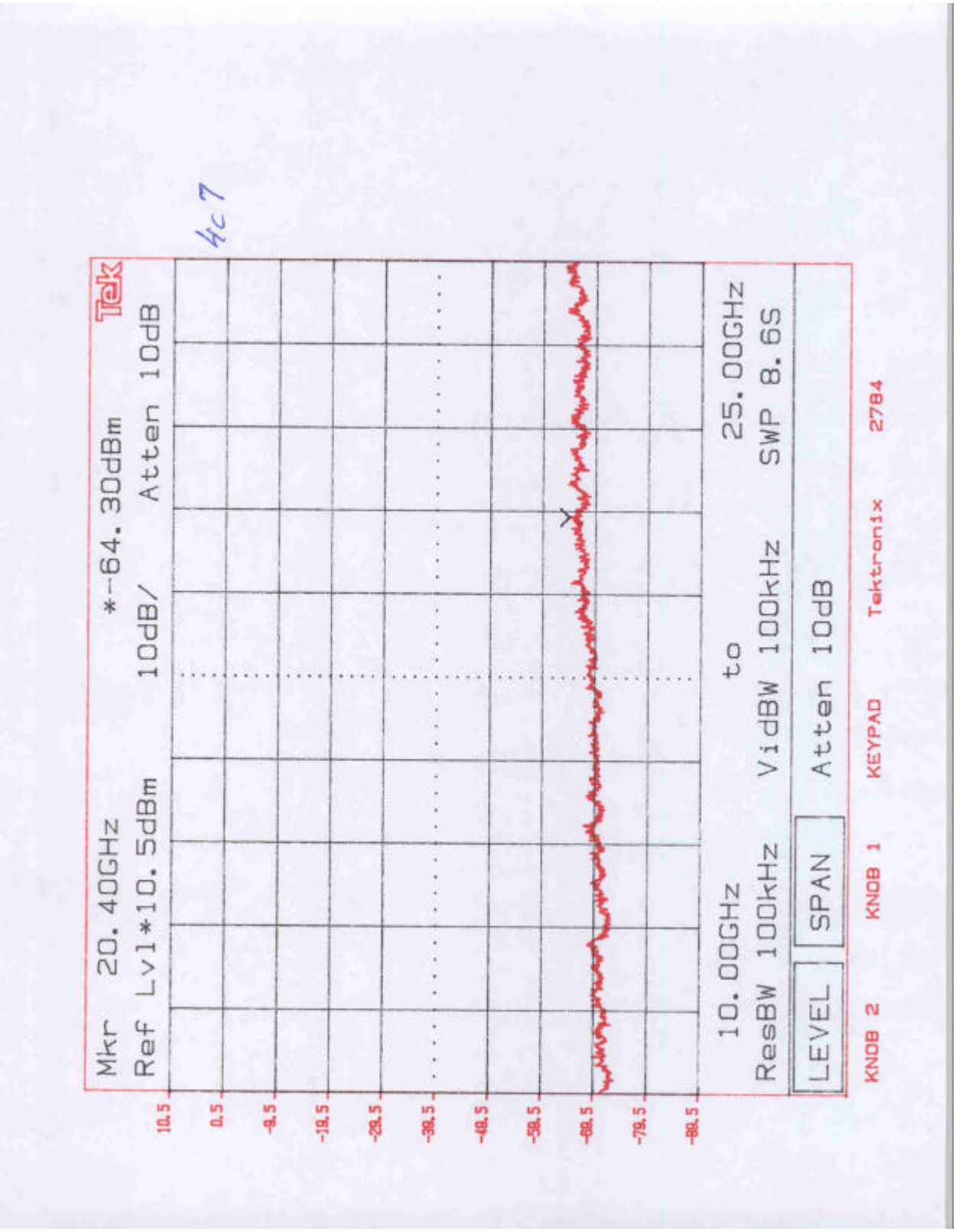

4c2
Tek
Mkr 2.264GHz
Ref Lvl*10.5dBm
*-63.20dBm
10dB/
Atten 20dB
1.000GHz
to
2.310GHz
ResBW 100kHz
VidBW 100kHz
SWP 750mS
TRIG
SPAN
Stop 2.310GHz
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-88.5


4c3
Tek
Mkr 2.352 75GHz
Ref Lvl*10.5dBm
*-47.30dBm
10dB/
Atten 20dB
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-88.5
2.310 00GHz
ResBW 100kHz
to
2.400 00GHz
VidBW 100kHz
SWP 51mS
TRIG
SPAN
Atten 20dB
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784


4< 4
Tek
Mkr 2.462 88GHz
Ref Lvl*10.5dBm
*2.20dBm
10dB/ Atten 20dB
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
2.400 00GHz to 2.483 50GHz
ResBW 100kHz VidBW 100kHz SWP 48mS
LEVEL SPAN Stop 2.483 50GHz
KNOB 2 KNOB 1 KEYPAD Tektronix 2784


Mkr 2.495 15GHz
*-56.50dBm
Ref Lvl*10.5dBm
10dB/
Atten 20dB
Tek
4c5
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
2.483 50GHz
to
2.500 00GHz
ResBW 100kHz
VidBW 100kHz
SWP 50mS
LEVEL
SPAN
Atten 20dB
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784


Mkr 2.500GHz *-61.20dBm
Ref Lvl*10.5dBm 10dB/ Atten 20dB
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
2.500GHz to 10.000GHz
ResBW 100kHz VidBW 100kHz SWP 4.3S
LEVEL SPAN TRIG 0 %
KNOB 2 KNOB 1 KEYPAD Tektronix 2784


Hc 7
Tek
Mkr 20.40GHz
Ref Lvl*10.5dBm
*-64.30dBm
10dB/
Atten 10dB
10.5
0.5
-9.5
-19.5
-29.5
-39.5
-49.5
-59.5
-69.5
-79.5
-89.5
10.00GHz
ResBW 100kHz
to
25.00GHz
VidBW 100kHz
SWP 8.6S
LEVEL
SPAN
Atten 10dB
KNOB 2
KNOB 1
KEYPAD
Tektronix
2784

4.5 Out-of-Band Radiated Emissions
FCC Rule 15.247(c):

For out of band emissions that are close to or less than the 20 dB attenuation requirement described in the section 4.4, radiated measurements were performed at a 3 m separation distance to determine whether these emissions complied with the 20 dB attenuation requirement.

Not required, all out-of-band conducted emissions more than 20 dB below fundamental

4.6 Transmitter Radiated Emissions in Restricted Bands
FCC Rules: 15.247 (c), 15.205, 15.209, 15.35

Radiated emission measurements were performed from 30 MHz to 24000 MHz.

For radiated emission tests, the analyzer setting was as followings:

	RES BW	VID BW
Frequency <1 GHz	100 kHz	100 kHz
Frequency >1 GHz	1 MHz 1 MHz	(Peak measurements)
	1 MHz 10 Hz	(Average measurements)

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels).

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

The field strength at the Bandedge frequencies was calculated as $E_F = E_o - \Delta$.

Where:

E_F = Field Strength at bandedge frequency, dBuV/m
E_O = Field Strength at fundamental frequency , dBuV/m
Δ = Delta between output power at fundamental frequency and at band-edge frequency

Refer to following data sheets and plots 4a4, 4a5, 4b4, 4b5 for details.

Fundamental Frequency, MHz	Average FS at fundamental frequency, dBuV/m	Minimum Delta, dB *	Calculated Average FS in restricted bands 2.31-2.39 GHz and 2.4835-2.5 GHz, dBuV/m *	Average FS Limit in restricted bands, dBuV/m	Plot number
2412	98.9	62.8	36.1	54.0	4a3, 4a5
2437	93.9	58.3	35.6	54.0	4b3, 4b4
2462	100.8	49.5	51.3	54.0	4c3, 4c4

* Worst case calculated
FS – Field Strength

Radiated Emissions Test Data

Company:	Symbol	**Model #:**	LA4137	**Standard**	**FCC § 15.247 (R.B.)**
EUT:	Compact Flash	**S/N #:**		**Limit**	11
Project #:	J20036369I	**Test Date:**	April13, 2001	**Test Distance**	3 meters
Test Mode:	Transmitter@2412MHz	**Engineer:**	Suresh K	**Duty relaxation**	0 dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	8	7	21	8	10	13	21	0	0	0
Model:	EMCO 3115	EM LPA-25	3160-9	CDI_P1000	AFT18855	ACO/400	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
2412.0	69.0	Peak	8	0	V	29.1	0.0	2.3	0.0	100.4	-	-
2412.0	59.8	Ave.	8	0	V	29.1	0.0	2.3	0.0	91.2	-	-
4824.0	43.3	Peak	8	8	V	34.0	28.1	3.2	0.0	52.4	74.0	-21.6
4824.0	30.4	Ave.	8	8	V	34.0	28.1	3.2	0.0	39.5	54.0	-14.5
7236.0	32.5	Peak	8	8	V	37.0	28.0	4.3	0.0	45.8	74.0	-28.2
7236.0	20.7	Ave.	8	8	V	37.0	28.0	4.3	0.0	34.0	54.0	-20.0
9648.0	33.7	Peak	8	8	V	38.5	27.3	5.0	0.0	49.9	74.0	-24.1
9648.0	21.4	Ave.	8	8	V	38.5	27.3	5.0	0.0	37.6	54.0	-16.4
12060	39.8	Peak	8	10	V	41.6	39.1	5.9	0.0	48.2	74.0	-25.8
12060	29.1	Ave.	8	10	V	41.6	39.1	5.9	0.0	37.5	54.0	-16.5
14472	39.4	Peak	8	10	V	40.7	37.8	6.5	0.0	48.8	74.0	-25.2
14472	27.3	Ave.	8	10	V	40.7	37.8	6.5	0.0	36.7	54.0	-17.3
16884	38.4	Peak	8	10	V	40.8	39.4	7.2	0.0	47.0	74.0	-27.0
16884	27.5	Ave.	8	10	V	40.8	39.4	7.2	0.0	36.1	54.0	-17.9
19296	34.1	Peak	21	13	V	40.2	23.3	7.7	0.0	58.7	74.0	-15.3
19296	22.5	Ave.	21	13	V	40.2	23.3	7.7	0.0	47.1	54.0	-6.9
21708	32.1	Peak	21	13	V	40.3	23.3	7.9	0.0	57.0	74.0	-17.0
21708	22.4	Ave.	21	13	V	40.3	23.3	7.9	0.0	47.3	54.0	-6.7
24120	33.3	Peak	21	13	V	40.4	24.2	8.5	0.0	58.0	74.0	-16.0
24120	22.7	Ave.	21	13	V	40.4	24.2	8.5	0.0	47.4	54.0	-6.6

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 10 dB below the limits.

Radiated Emissions Test Data

Company:	Symbol	**Model #:**	LA4137	**Standard**	**FCC § 15.247 (R.B.)**
EUT:	Compact Flash	**S/N #:**		**Limits**	11
Project #:	J200363691	**Test Date:**	April13, 2001	**Test Distance**	3 meters
Test Mode:	Transmitter@2437MHz	**Engineer:**	Suresh K	**Duty Relaxation**	0 dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	8	7	21	8	10	13	21	0	0	0
Model:	EMCO 3115	EM LPA-25	3160-9	CDI_P1000	AFT18855	ACO/400	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
2437.0	71.8	Peak	8	0	V	29.1	0.0	2.3	0.0	103.2	-	-
2437.0	62.5	Ave.	8	0	V	29.1	0.0	2.3	0.0	93.9	-	-
4874.0	49.3	Peak	8	8	V	34.0	28.1	3.2	0.0	58.4	74.0	-15.6
4874.0	40.1	Ave.	8	8	V	34.0	28.1	3.2	0.0	49.2	54.0	-4.8
7311.0	34.5	Peak	8	8	V	37.0	28.0	4.3	0.0	47.8	74.0	-26.2
7311.0	21.8	Ave.	8	8	V	37.0	28.0	4.3	0.0	35.1	54.0	-18.9
9748.0	33.8	Peak	8	8	V	38.5	27.3	5.0	0.0	50.0	74.0	-24.0
9748.0	21.4	Ave.	8	8	V	38.5	27.3	5.0	0.0	37.6	54.0	-16.4
12185	40.4	Peak	8	10	V	41.6	39.1	5.9	0.0	48.8	74.0	-25.2
11185	29.2	Ave.	8	10	V	41.6	39.1	5.9	0.0	37.6	54.0	-16.4
14622	39.4	Peak	8	10	V	41.3	37.4	6.8	0.0	50.1	74.0	-23.9
14622	27.3	Ave.	8	10	V	41.3	37.4	6.8	0.0	38.0	54.0	-16.0
17059	38.6	Peak	8	10	V	42.0	38.8	7.5	0.0	49.3	74.0	-24.7
17059	27.5	Ave.	8	10	V	42.0	38.8	7.5	0.0	38.2	54.0	-15.8
19496	34.2	Peak	21	13	V	40.2	23.3	7.7	0.0	58.8	74.0	-15.2
19496	22.5	Ave.	21	13	V	40.2	23.3	7.7	0.0	47.1	54.0	-6.9
21933	32.1	Peak	21	13	V	40.3	23.3	7.9	0.0	57.0	74.0	-17.0
21933	22.4	Ave.	21	13	V	40.3	23.3	7.9	0.0	47.3	54.0	-6.7
24370	33.3	Peak	21	13	V	40.4	24.2	8.5	0.0	58.0	74.0	-16.0
24370	22.7	Ave.	21	13	V	40.4	24.2	8.5	0.0	47.4	54.0	-6.6

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 10 dB below the limits.

Radiated Emissions Test Data

Company:	Symbol	**Model #:**	LA4137	**Standard**	**FCC § 15.247 (R.B.)**
EUT:	Compact Flash	**S/N #:**		**Limits**	11
Project #:	J200363691	**Test Date:**	April13, 2001	**Test Distance**	3 meters
Test Mode:	Transmitter@2462MHz	**Engineer:**	Suresh K	**Duty Relaxation**	0 dB

	Antenna Used			Pre-Amp Used			Cable Used			Transducer Used
Number:	8	7	21	8	10	13	21	0	0	0
Model:	EMCO 3115	EM LPA-25	3160-9	CDI_P1000	AFT18855	ACO/400	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
2462.0	74.7	Peak	8	0	V	29.1	0.0	2.3	0.0	106.1	-	-
2462.0	63.4	Ave.	8	0	V	29.1	0.0	2.3	0.0	94.8	-	-
4924.0	45.9	Peak	8	8	V	34.0	28.1	3.2	0.0	55.0	74.0	-19.0
4924.0	33.2	Ave.	8	8	V	34.0	28.1	3.2	0.0	42.3	54.0	-11.7
7386.0	34.7	Peak	8	8	V	37.0	28.0	4.3	0.0	48.0	74.0	-26.0
7386.0	23.3	Ave.	8	8	V	37.0	28.0	4.3	0.0	36.6	54.0	-17.4
9848.0	35.1	Peak	8	8	V	38.5	27.6	5.0	0.0	51.0	74.0	-23.0
9848.0	23.2	Ave.	8	8	V	38.5	27.6	5.0	0.0	39.1	54.0	-14.9
12310	40.2	Peak	8	10	V	41.6	39.1	5.9	0.0	48.6	74.0	-25.4
12310	29.1	Ave.	8	10	V	41.6	39.1	5.9	0.0	37.5	54.0	-16.5
14772	39.8	Peak	8	10	V	41.3	37.4	6.8	0.0	50.5	74.0	-23.5
14772	27.6	Ave.	8	10	V	41.3	37.4	6.8	0.0	38.3	54.0	-15.7
17234	38.3	Peak	8	10	V	42.0	38.8	7.5	0.0	49.0	74.0	-25.0
17234	28.1	Ave.	8	10	V	42.0	38.8	7.5	0.0	38.8	54.0	-15.2
19696	35.1	Peak	21	13	V	40.3	23.3	7.7	0.0	59.8	74.0	-14.2
19696	22.5	Ave.	21	13	V	40.3	23.3	7.7	0.0	47.2	54.0	-6.8
22158	32.1	Peak	21	13	V	40.3	23.3	7.9	0.0	57.0	74.0	-17.0
22158	22.4	Ave.	21	13	V	40.3	23.3	7.9	0.0	47.3	54.0	-6.7
24620	33.3	Peak	21	13	V	40.4	24.2	8.5	0.0	58.0	74.0	-16.0
24620	22.7	Ave.	21	13	V	40.4	24.2	8.5	0.0	47.4	54.0	-6.6

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).

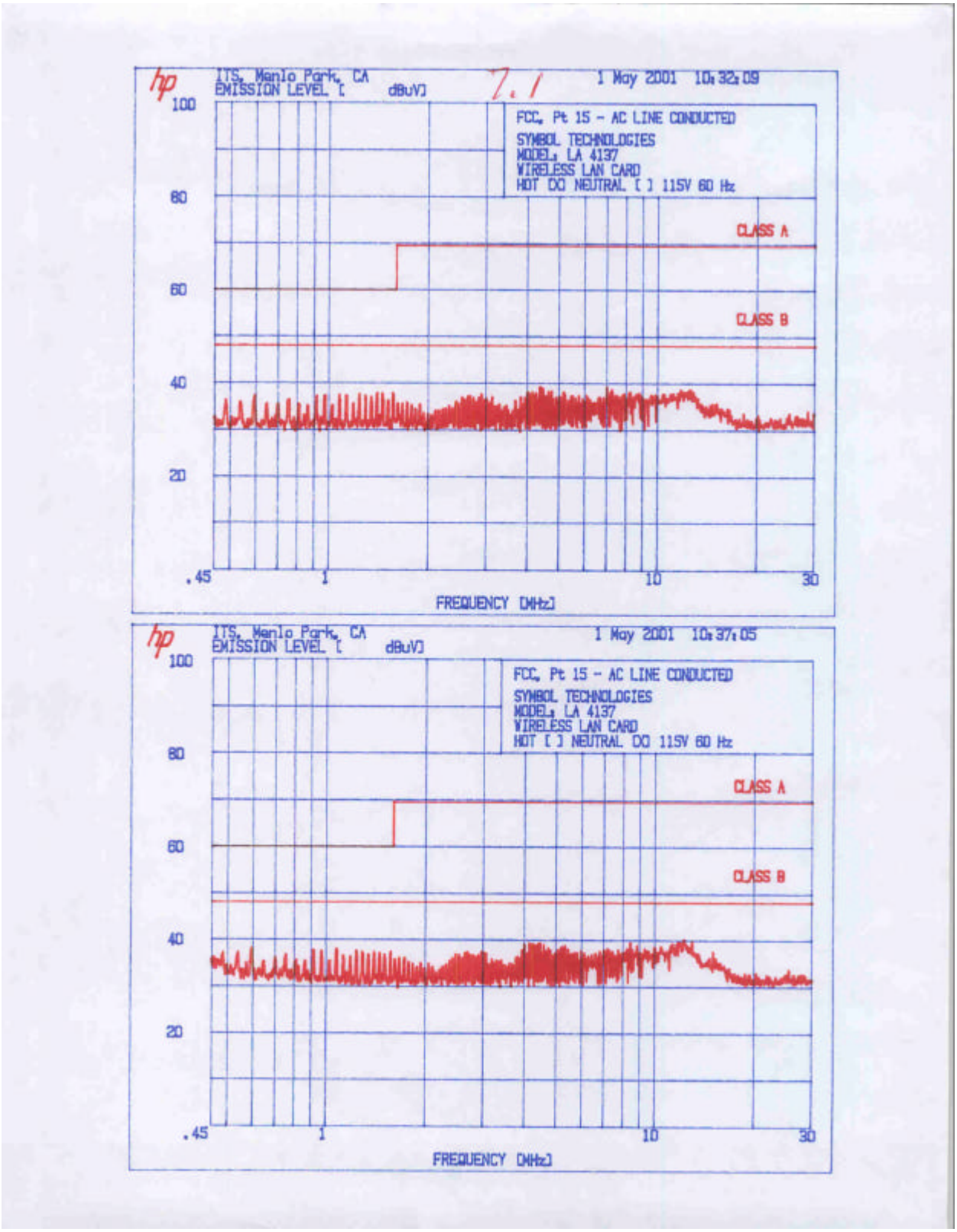
d) Negative signs (-) in Margin column signify levels below the limits.

e) All other emissions not reported are below the equipment noise floor which is at least 10 dB below the limits.

4.7 AC Line Conducted Emission
FCC Rule 15.207:

AC line conducted emission test was performed according the ANSI C63.4 standard. The EUT was connected to AC Line through the LISNs.

For the test result, see attached plot 7.1.
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ITS, Menlo Park, CA
EMISSION LEVEL [dBuV]
7.1
1 May 2001 10:32:09
FCC, Pt 15 - AC LINE CONDUCTED
SYMBOL TECHNOLOGIES
MODEL: LA 4137
WIRELESS LAN CARD
HOT DO NEUTRAL [ ] 115V 60 Hz
CLASS A
CLASS B
100
80
60
40
20
.45
1
10
30
FREQUENCY [MHz]
ITS, Menlo Park, CA
EMISSION LEVEL [dBuV]
1 May 2001 10:37:05
FCC, Pt 15 - AC LINE CONDUCTED
SYMBOL TECHNOLOGIES
MODEL: LA 4137
WIRELESS LAN CARD
HOT [ ] NEUTRAL DO 115V 60 Hz
CLASS A
CLASS B
100
80
60
40
20
.45
1
10
30
FREQUENCY [MHz]

4.8 Radiated Emissions from Digital Section of Transceiver (Transmitter)
FCC Ref: 15.109

See separate DoC report.

4.9 Radiated Emissions from Receiver Section of Transceiver (L.O. Radiation)
FCC Ref: 15.109, 15.111

Not required - EUT operation above 960 MHz only.

5.0 List of test Equipment

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. INTERVAL	CAL. DUE
Spectrum Analyzer w/85650 QP Adapter	Hewlett Packard	8566B	2416A00317 2043A00251	12	4/6/02
Spectrum Analyzer w/8650 QP Adaptor	Hewlett Packard	8568B	1912A0053 2521A01021	12	2/23/02
Spectrum Analyzer	Tektronix	2784	B3020108	12	8/4/01
Double-ridged Horn Antenna	EMCO	3115	9107-3712	12	3/17/02
Horn Antenna	EMCO	3160-09	Not Labeled	#	#
Pre-Amplifier,#5	CDI	P950	ITS009	12	10/6/01
Pre-Amplifier	CDI	P1000	N/A	12	10/06/01
Pre-Amplifier	Avantek	AFT-18855	8723H705	12	10/5/01
Pre-amplifier	CTT	ACO/400	47526	12	10/5/01
Power Meter	Hewlett Packard	8900D	3607U00673	12	7/31/01

No Calibration Required

6.0 Document History

Revision/ Job Number	Writer Initials	Date	Change
1.0 / J20046983D1	OM	May 25, 2001	Original document