9 RADIATION EXPOSURE

The M-WIBS1900 Base Station is the transceiver intended to service multiple subscribers on a point-to-multipoint basis. Antenna is fix-mounted, generally quite high, so it is impossible to use the product in any portable application. Therefore, to comply with RF Exposure Requirement, the MPE is calculated and measured.

The maximum Peak EIRP measured and calculated is 19.7 dBm or 0. W. The Power Density can be calculated using the formula

$$S = EIRP/ 4\pi D^2$$

Where S is Power Density in W/m^2
D is the distance from the antenna

In the table below, the calculated Power Density (using the formula) at different distances and MPE Limit are presented.

Distance, m	Power Density, W/m^2	MPE, W/m^2
0.05	3.2	10.0
0.1	0.8	10.0
0.2	0.2	10.0
0.3	0.09	10.0
0.6	0.02	10.0
0.8	0.01	10.0
1.0	0.008	10.0

In the table below, the calculated Power Density (using the Field Strength measurement data) at different distances and MPE Limit are presented.

Distance, m	Field Strength (measured) V/m	Power Density (calculated) W/m^2	MPE, W/m^2
0.1	16.0	0.7	10.0
0.2	9.7	0.25	10.0
0.3	6.0	0.095	10.0
0.6	3.4	0.031	10.0
0.8	2.2	0.013	10.0
1.0	1.5	0.006	10.0

As can be seen from the data, the MPE is well below the limit at 5 cm and more.

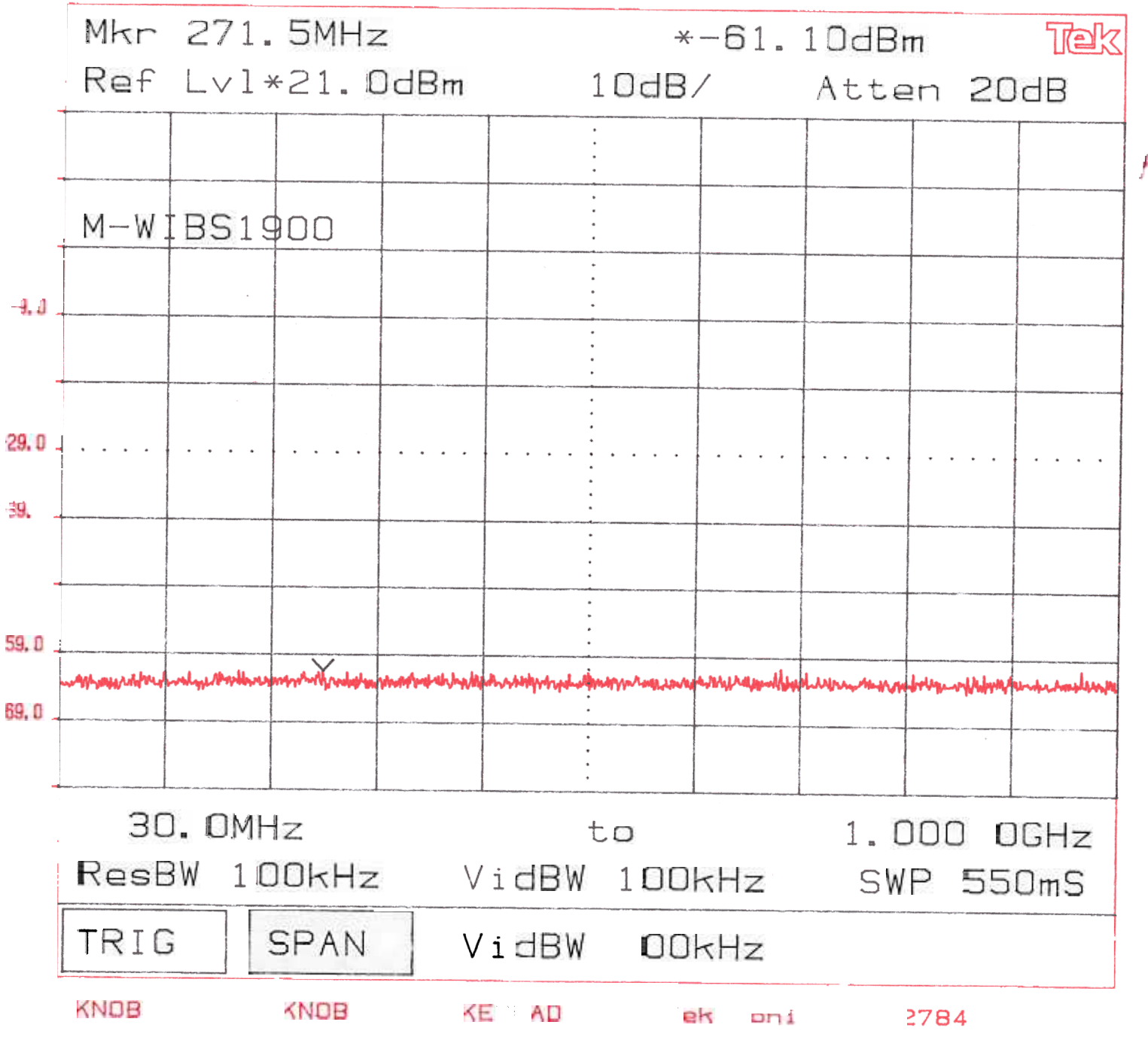
10 LIST OF TEST EQUIPMENT

Equipment	Manufacturer	Model	Serial #	Cal. Int.	Cal. Due	Used
Double-ridged Horn Antenna	EMCO	3115	9107-3712	12	6/25/01	X
				#	#	X
				12	11/14/01	X
		AFT18855	8723H705	12	11/14/01	X
		ACO/400	47526	12	11/14/01	X
Spectrum Analyzer w/8650 QP Adapter	Hewlett Packard	HP 8566B	2416A00317 2521A01021	6	7/03/01	X
Spectrum Analyzer	Tektronix	2784	B3020108	12	8/4/01	X
Field Strength Meters				12	9/15/01	X
Peak Power Meter	Hewlett Packard	8900D		12	7/31/01	X
Peak Power Sensor	Hewlett Packard	84811A		12	7/31/01	X

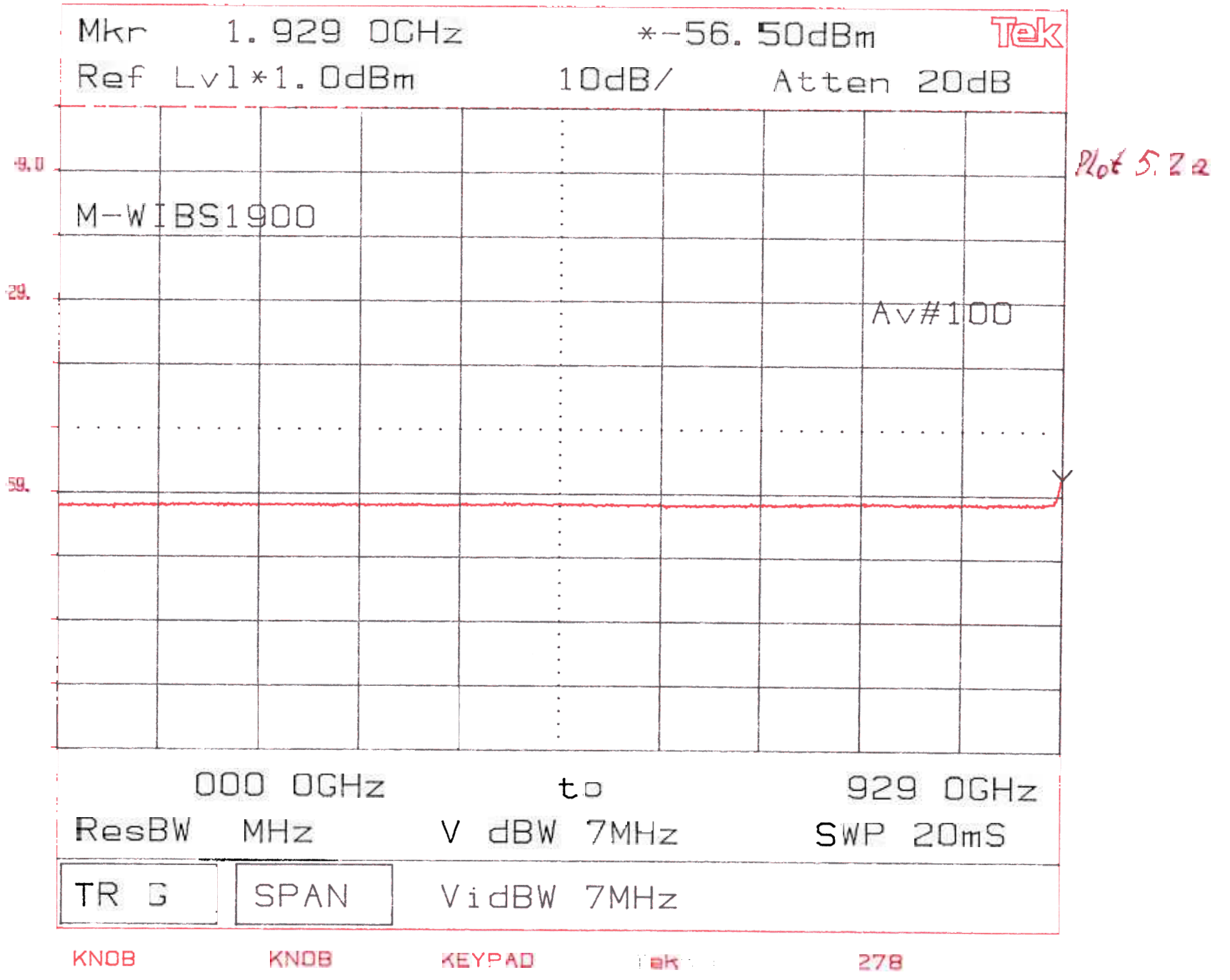
Calibration is not required

11 EXHIBIT 1

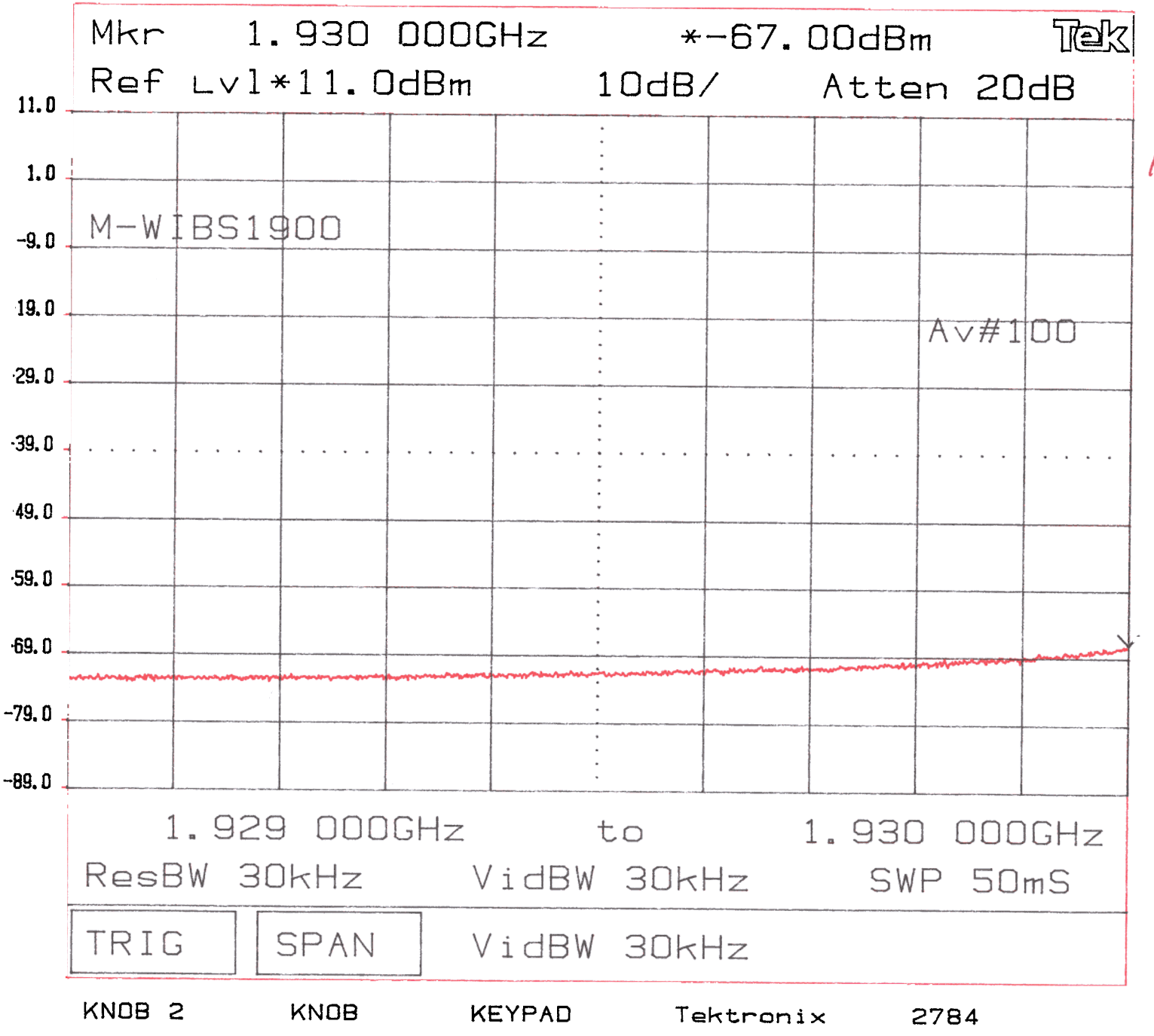
Plot No	Description
3.1 – 3.6	Output Power
	Out-of-band conducted emissions at antenna terminal, low channel
	Out-of-band conducted emissions at antenna terminal, middle channel
5.1c – 5.5c	Out-of-band conducted emissions at antenna terminal, high channel
6.1 – 6.4	Bandwidth plots


Mkr 271.5MHz
*-61.10dBm
Tek
Ref Lvl*21.0dBm
10dB/
Atten 20dB
M-WIBS1900
-9.0
29.0
39.
59.0
69.0
30.0MHz
to
1.000 0GHz
ResBW 100kHz
VidBW 100kHz
SWP 550mS
TRIG
SPAN
VidBW 00kHz
KNOB
KNOB
2784

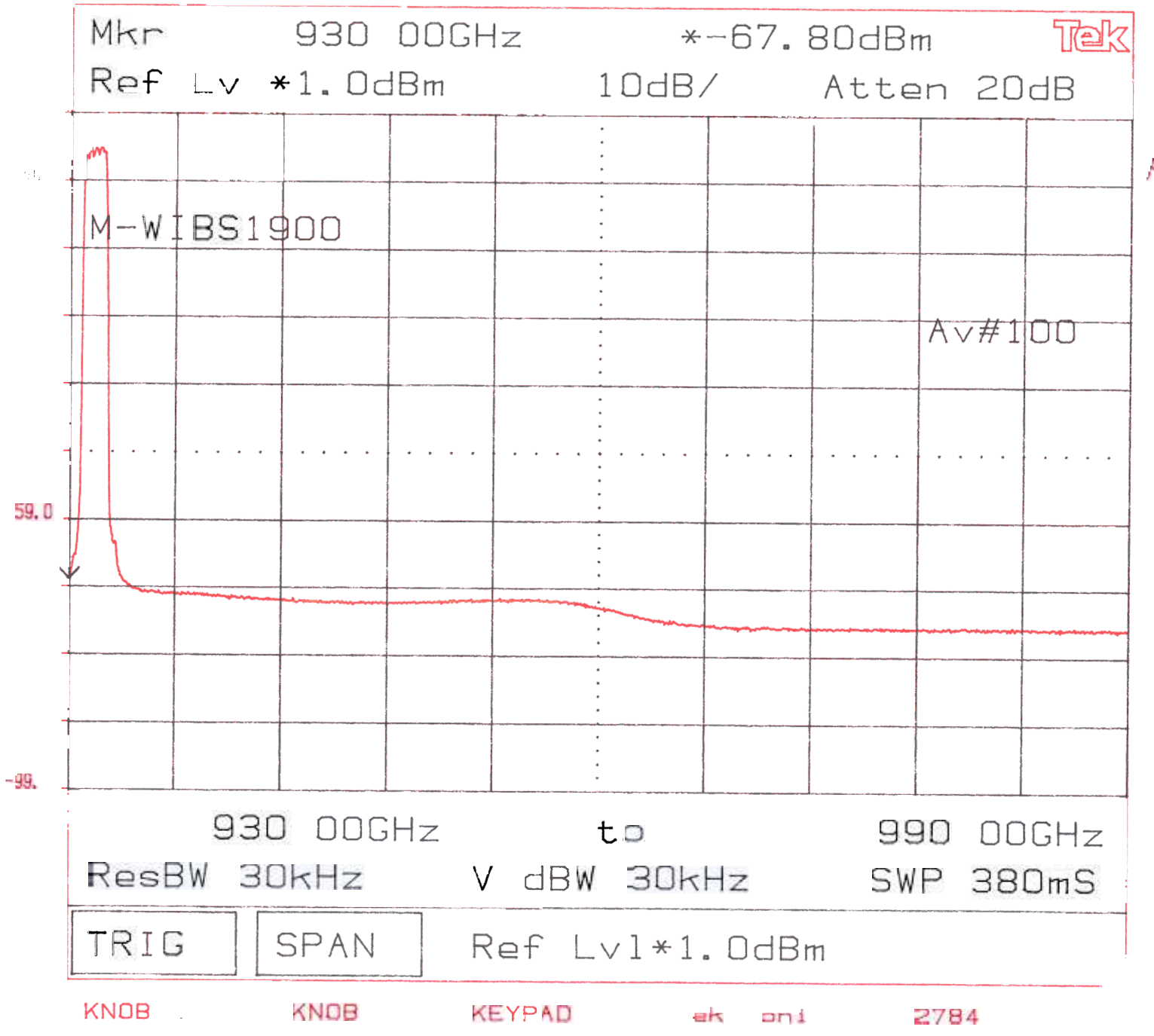
Plot


Mkr 1.929 0GHz
*-56.50dBm
Tek
Ref Lvl*1.0dBm
10dB/
Atten 20dB
-9.0
29.
59.
M-WIBS1900
Av#100
000 0GHz
to
929 0GHz
ResBW MHz
V dBW 7MHz
SWP 20mS
TR G
SPAN
VidBW 7MHz
KNOB
KNOB
KEYPAD
278

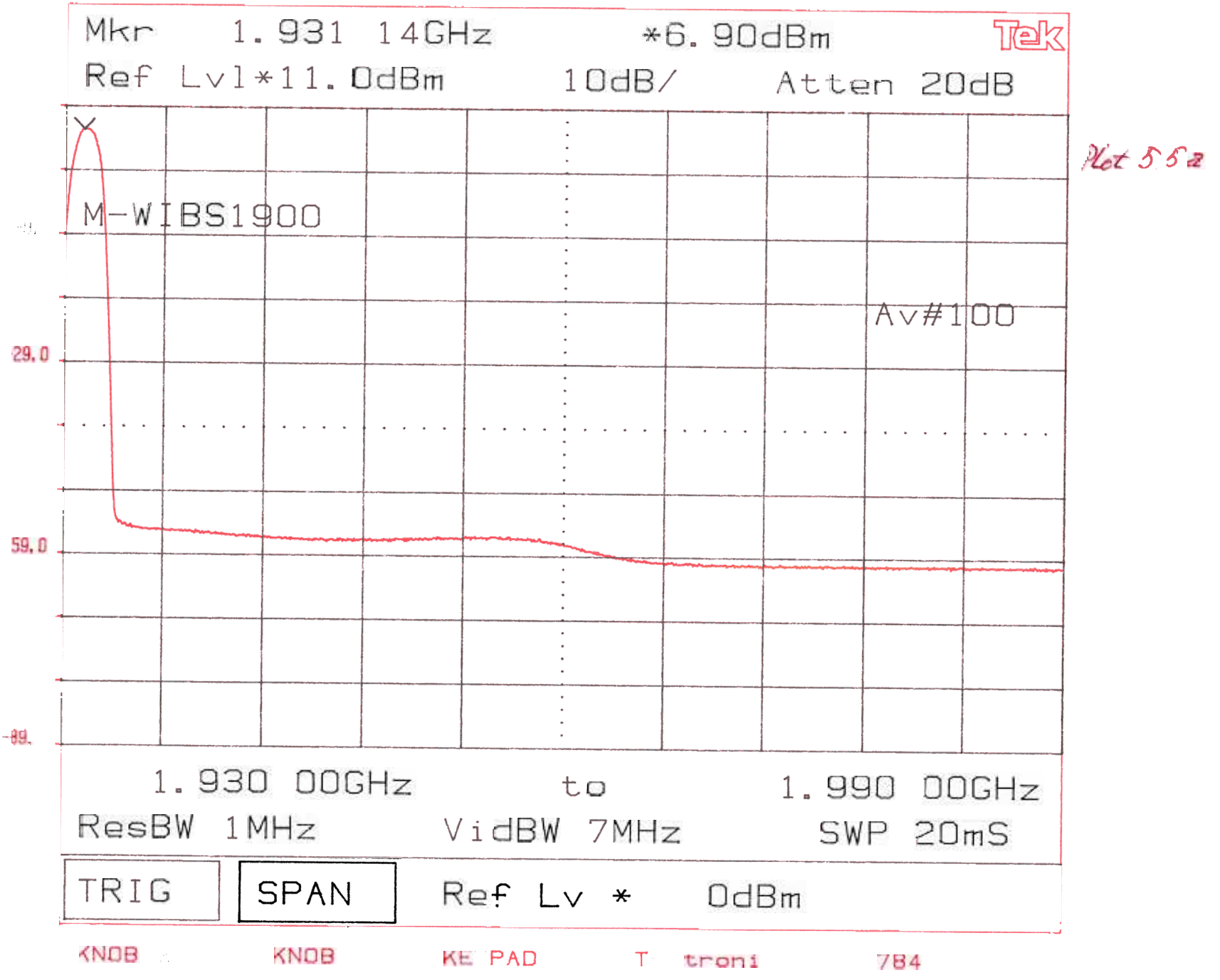
Plot 5.2.2


Mkr 1.930 000GHz *-67.00dBm Tek
Ref Lvl*11.0dBm 10dB/ Atten 20dB
11.0
1.0
-9.0
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
-89.0
M-WIBS1900
Av#100
1.929 000GHz to 1.930 000GHz
ResBW 30kHz VidBW 30kHz SWP 50mS
TRIG
SPAN
VidBW 30kHz
KNOB 2 KNOB KEYPAD Tektronix 2784

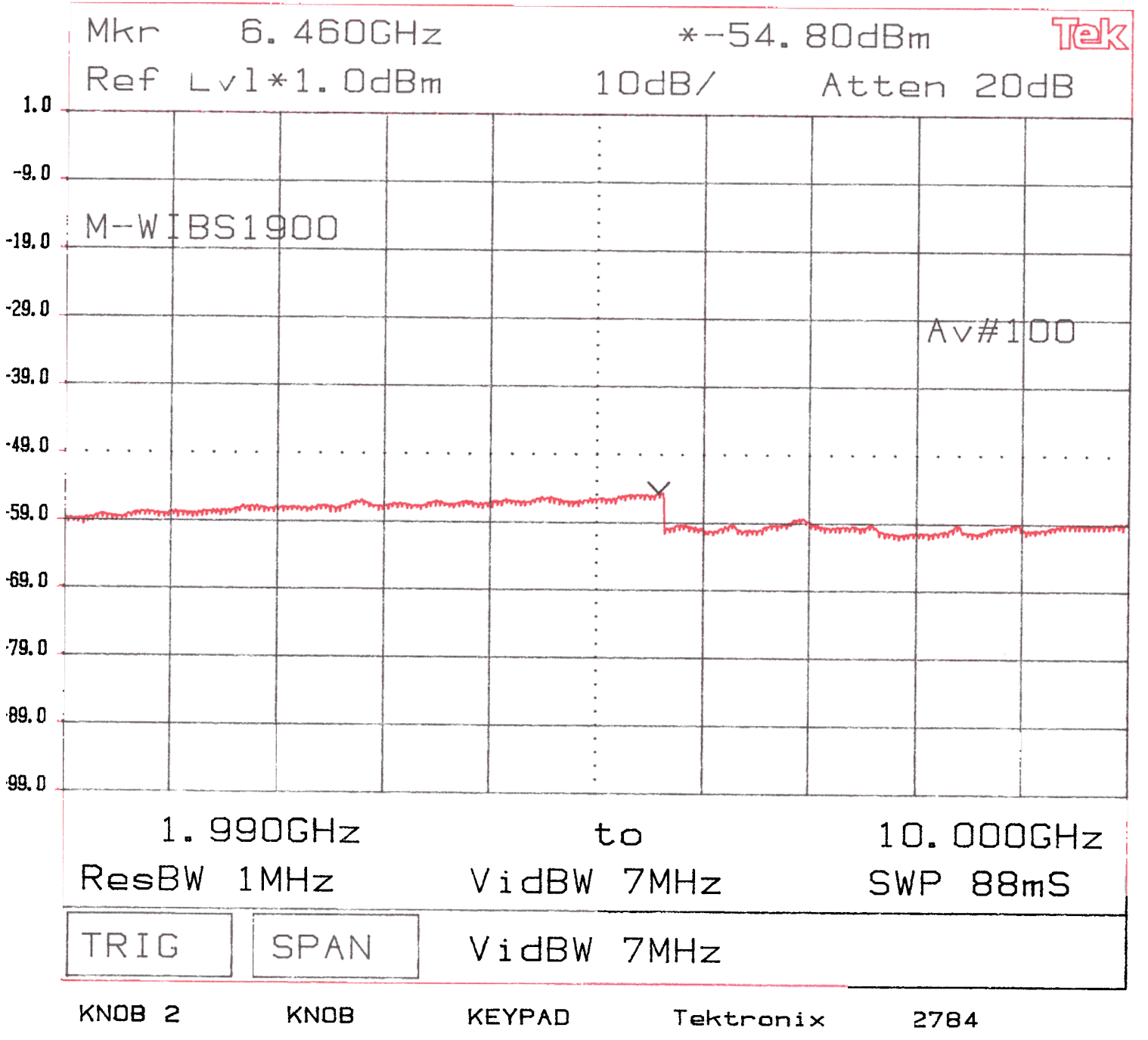
Plot 5.3a


Mkr 930 00GHz *-67.80dBm
Tek
Ref Lv *1.0dBm 10dB/ Atten 20dB
M-WIBS1900
Av#100
59.0
-99.
930 00GHz to 990 00GHz
ResBW 30kHz V dBW 30kHz SWP 380mS
TRIG
SPAN
Ref Lvl*1.0dBm
KNOB
KNOB
KEYPAD
2784

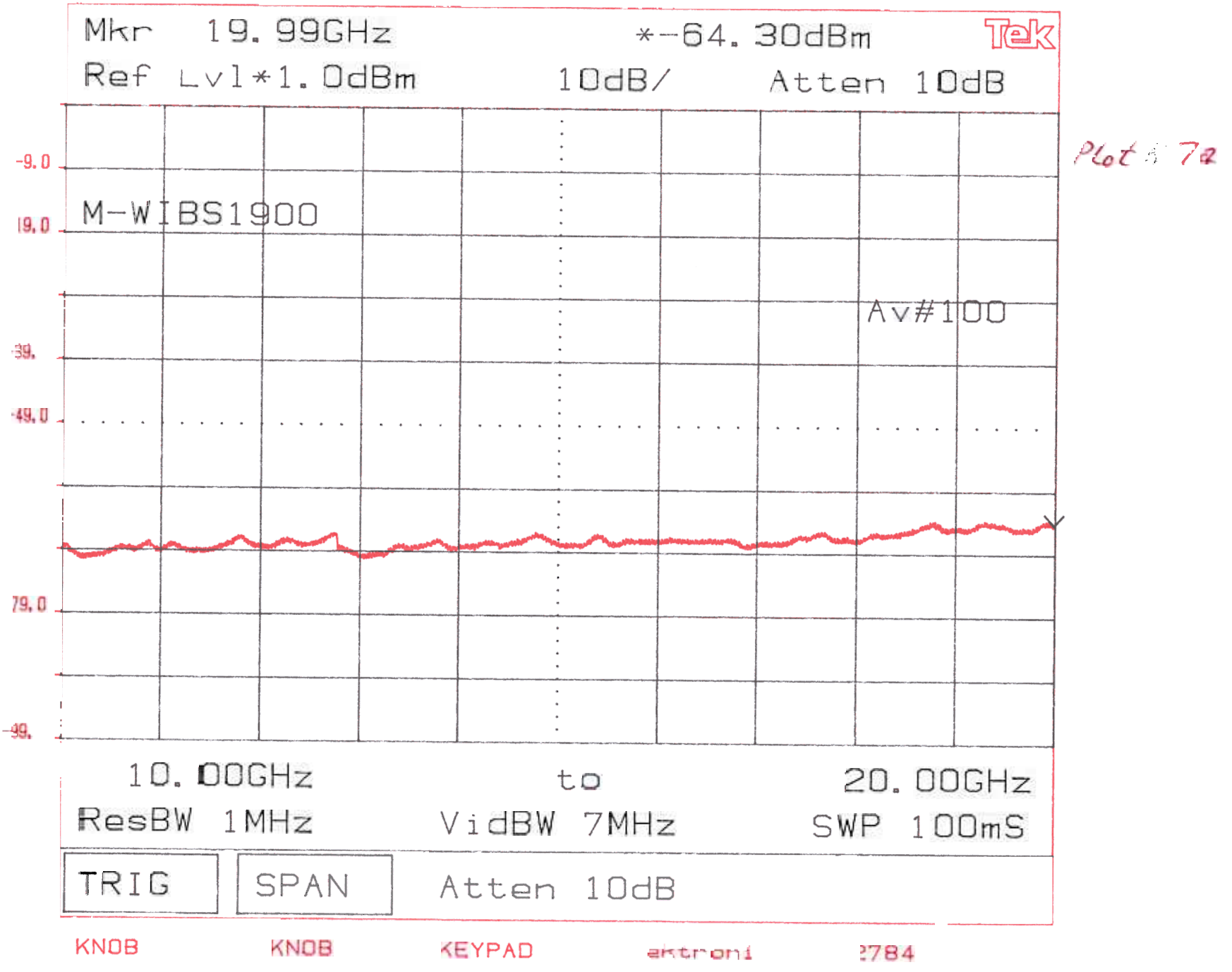
Plot 5.4.2


Mkr 1.931 14GHz *6.90dBm
Tek
Ref Lvl*11.0dBm 10dB/ Atten 20dB
M-WIBS1900
Av#100
29.0
59.0
-89.
1.930 00GHz to 1.990 00GHz
ResBW 1MHz VidBW 7MHz SWP 20mS
TRIG
SPAN
Ref Lv * 0dBm
KNOB KNOB KE PAD T troni 784

Ref 552


Mkr 6.460GHz
*-54.80dBm
Tek
Ref Lvl*1.0dBm
10dB/
Atten 20dB
1.0
-9.0
-19.0
-29.0
-39.0
-49.0
-59.0
-69.0
-79.0
-89.0
-99.0
M-WIBS1900
Av#100
1.990GHz
to
10.000GHz
ResBW 1MHz
VidBW 7MHz
SWP 88mS
TRIG
SPAN
VidBW 7MHz
KNOB 2
KNOB
KEYPAD
Tektronix
2784

Plot 5.6a


Mkr 19.99GHz
*-64.30dBm
Tek
Ref Lvl*1.0dBm
10dB/
Atten 10dB
-9.0
19.0
M-WIBS1900
Av#100
39.
-49.0
79.0
-99.
10.00GHz
to
20.00GHz
ResBW 1MHz
VidBW 7MHz
SWP 100mS
TRIG
SPAN
Atten 10dB
KNOB
KNOB
KEYPAD
2784

Plot # 7a