EXHIBIT # 16

FCC Requirements CRF 47 Part 2.1033,c (13)

Modulation System Description

JXBLMDSXP4-8T

EXHIBIT 2.1033,c(4)&(5)&(6)

Type of Emission, Necessary Bandwidth and Modulation Characteristics for 4XT1 and the 8XT1 Radio:

The DMC XP4 T-Carrier radio is employed to process digital information of various types. Voice, data, television, and many other information types can be encoded and transmitted across this radio system. The emission designators, 5M00F7W, and 10M0F7W were developed by the following process:

The necessary bandwidth was developed from the following equation: CFR 47 part 2.202, (b)

For 4XT1 Data rate (including overhead):

$Bn = 2 DK + B$

$B = R/\log(\text{base2}) \text{ of } S$

$B = (7.249\text{Mbits/sec.})/2 = 3.6245\text{M Symbols/sec.}$

Where: Bn = Necessary bandwidth in MHz
R= Aggregate bit rate in bits/sec = 7.249 Mbits/sec.
S= number of transmitter levels = 4
D= deviation in MHz = .687 MHz
K= 1 for this modulation type

Therefore Bn = (2) (.687E+6) (1) + 3.624E+6 = 5.00 MHz

The F7W portion of the designator is derived as follows
F = Frequency Modulation [CFR47 part 2.201 (c)]
7 = is the nature of the modulation signal [CFR47 part2.201 (d)]
W = is the type of information transmitted [CFR47 part2.201 (e)]

The resultant complete emission designator for the 4XT1 can be stated as 5M0OF7W

For 8XT Data rate (including overhead):

Bn = 2 DK + B

B = R/log(base2) of S

B = (14.48Mbits/sec.)/2 = 7.249M Symbols/sec.

Where: Bn = Necessary bandwidth in MHz
R= Aggregate bit rate in bits/sec = 14.48 Mbits/sec.
S= number of transmitter levels = 4
D= deviation in MHz = 1.375 MHz
K= 1 for this modulation type

Therefore Bn = (2) (1.375+6) (1) + 7.249E+6 = 10.00 MHz

The F7W portion of the designator is derived as follows
F = Frequency Modulation [CFR47 part 2.201 (c)]
7 = is the nature of the modulation signal [CFR47 part2.201 (d)]
W = is the type of information transmitted [CFR47 part2.201 (e)]

The resultant complete emission designator for the 8XT1 can be stated as 10MOF7W

Frequency Range: Three Bands 1. 27,500 to 28,350 MHz

2. 29,100 to 29,250 MHz

3. 31,000 to 31,300 MHz

Range of operating power: 30 db Refer to Exhibit 2.1033,c(4)&(5)&(6) and Exhibit 2.1033 ,c(9) for technical description of power control and operation.

4XT1 XP4 Occupied Bandwidth

$Attn\_floor := 56$

$$Attn\_BW(BW, x) := 11 + 0.4 \cdot \left\{ \frac{x}{BW} \cdot 100 - 50 \right\} + 10 \cdot \log(BW)$$

BW is in MHz
x is frequency offset in MHz

$$F\_mask(BW) := \left[\frac{Attn\_floor - (11 + 10 \cdot \log(BW))}{0.4} + 50 \right] \cdot \frac{BW}{100}$$

$Attn\_P(P\_mean) := 43 + P\_mean$

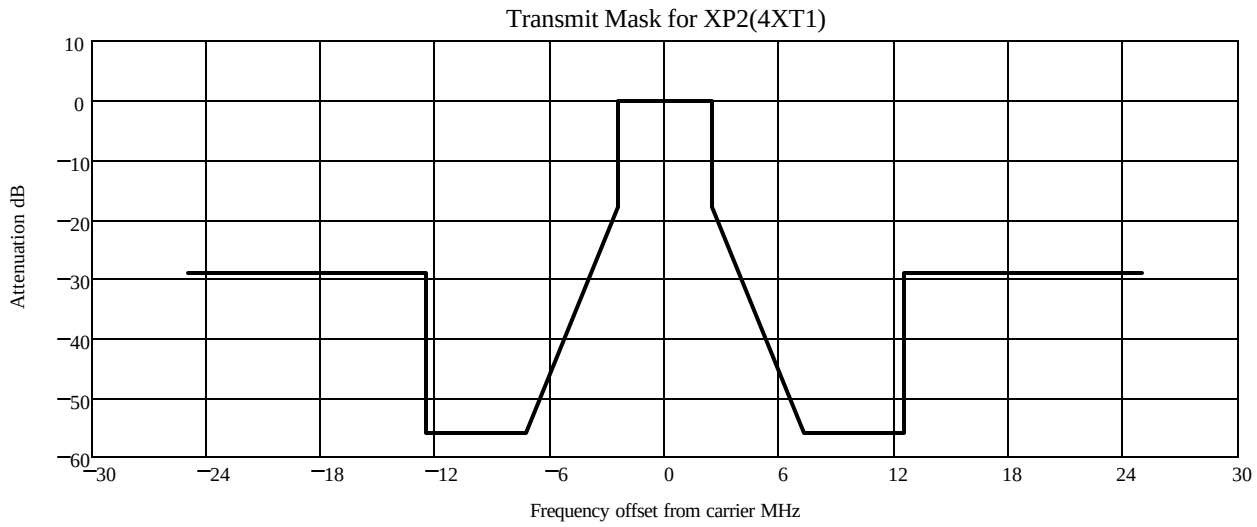
$BW := 5.00$ **BW is in MHz** $P\_mean := -14$ **P_mean is in dBW**

$$y := \left(-Attn\_P(P\_mean) \; -Attn\_P(P\_mean) \; -Attn\_floor \; -Attn\_floor \; -Attn\_BW\left(BW, \frac{BW}{2}\right) \; 0 \; 0 \; -Attn\_BW\left(BW, \frac{BW}{2}\right) \right)$$

$$x := \left(-5 \cdot BW \; -2.5 \cdot BW \; -2.5 \cdot BW \; -F\_mask(BW) \; \frac{-BW}{2} \; \frac{-BW}{2} \; \frac{BW}{2} \; \frac{BW}{2} \; F\_mask(BW) \; 2.5 \cdot BW \; 2.5 \cdot BW \; 5 \cdot BW \right)$$

$i := 0 .. 11$

Power out antenna port is 16 dBm
Transmit Bandwidth is 5.00 MHz



$y = (-29 \; -29 \; -56 \; -56 \; -17.99 \; 0 \; 0 \; -17.99 \; -56 \; -56 \; -29 \; -29)$

$x = (-25 \; -12.5 \; -12.5 \; -7.251 \; -2.5 \; -2.5 \; 2.5 \; 2.5 \; 7.251 \; 12.5 \; 12.5 \; 25)$

8XT1 XP4 Occupied Bandwidth

$Attn\_floor := 56$

$$Attn\_BW(BW, x) := 11 + 0.4 \cdot \left\{ \frac{x}{BW} \cdot 100 - 50 \right\} + 10 \cdot \log(BW)$$

BW is in MHz
x is frequency offset in MHz

$$F\_mask(BW) := \left[\frac{Attn\_floor - (11 + 10 \cdot \log(BW))}{0.4} + 50 \right] \cdot \frac{BW}{100}$$

$Attn\_P(P\_mean) := 43 + P\_mean$

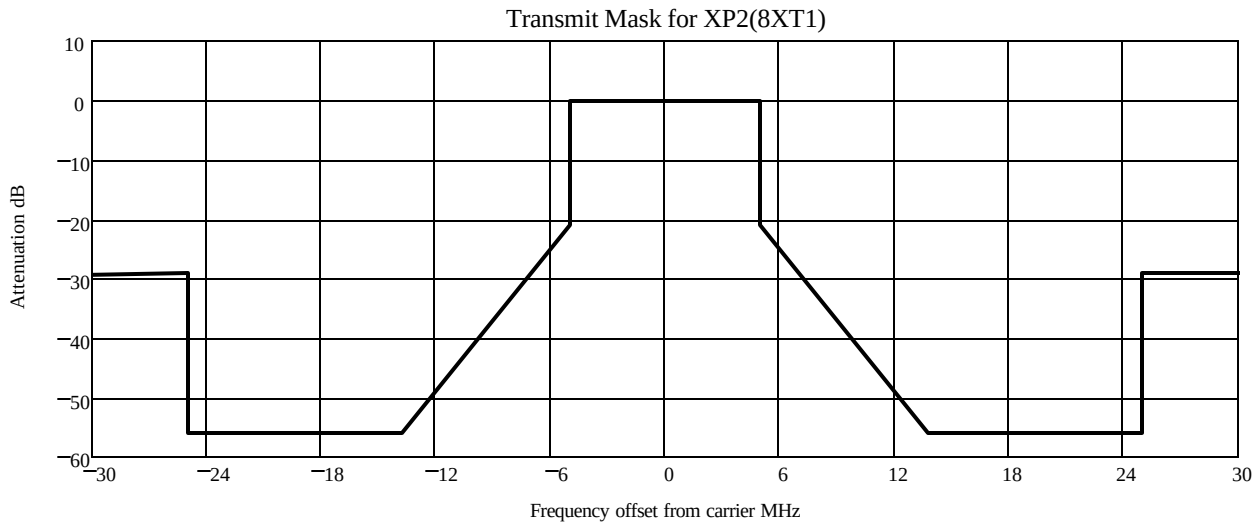
$BW := 10.00$ **BW is in MHz** $P\_mean := -14$ **P_mean is in dBW**

$$y := \left\{ -Attn\_P(P\_mean) \; -Attn\_P(P\_mean) \; -Attn\_floor \; -Attn\_floor \; -Attn\_BW\left\{BW, \frac{BW}{2}\right\} \; 0 \; 0 \; -Attn\_BW\left\{BW, \frac{BW}{2}\right\} \right\}$$

$$x := \left\{ -5 \cdot BW \; -2.5 \cdot BW \; -2.5 \cdot BW \; -F\_mask(BW) \; \frac{-BW}{2} \; \frac{-BW}{2} \; \frac{BW}{2} \; \frac{BW}{2} \; F\_mask(BW) \; 2.5 \cdot BW \; 2.5 \cdot BW \; 5 \cdot BW \right\}$$

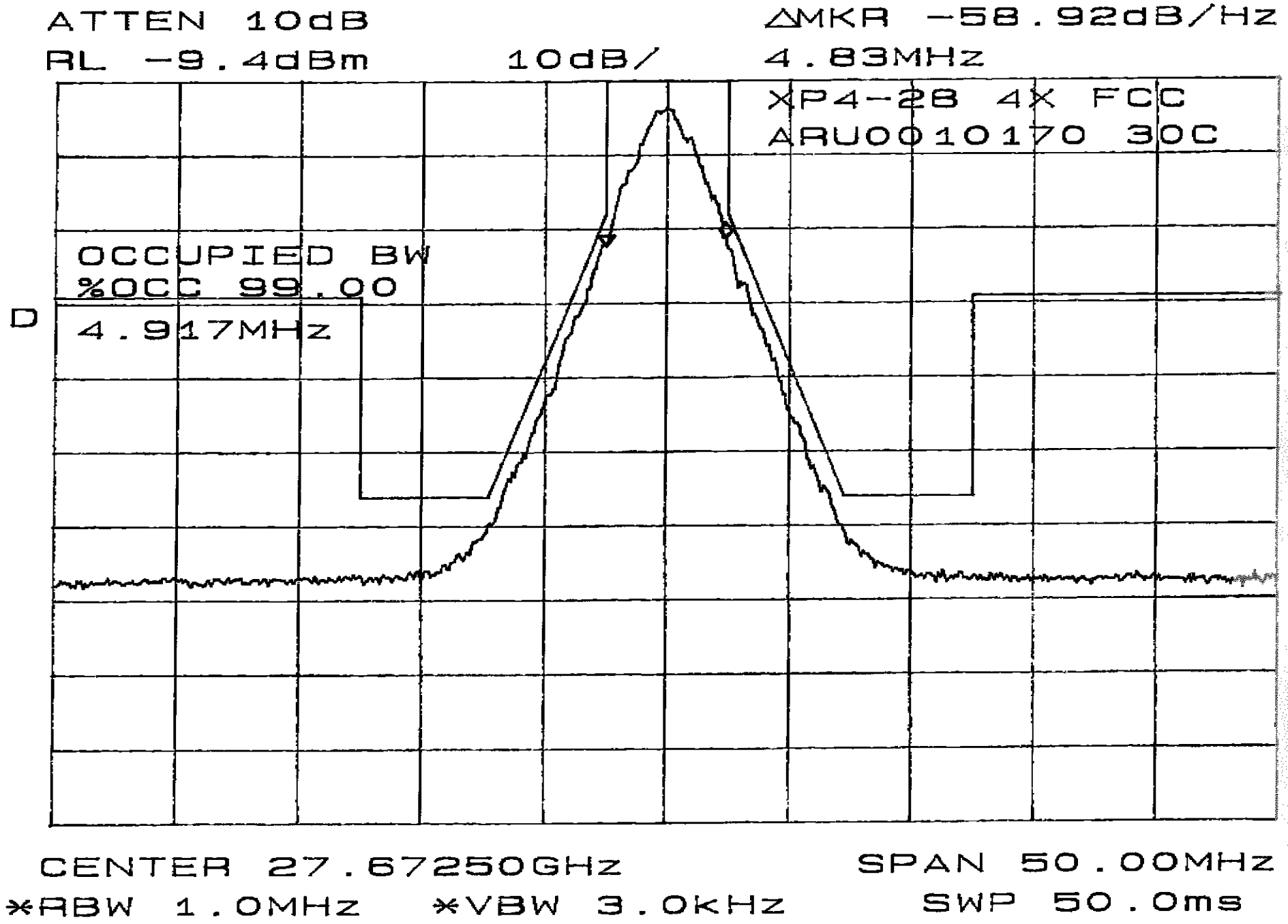
$i := 0 .. 11$

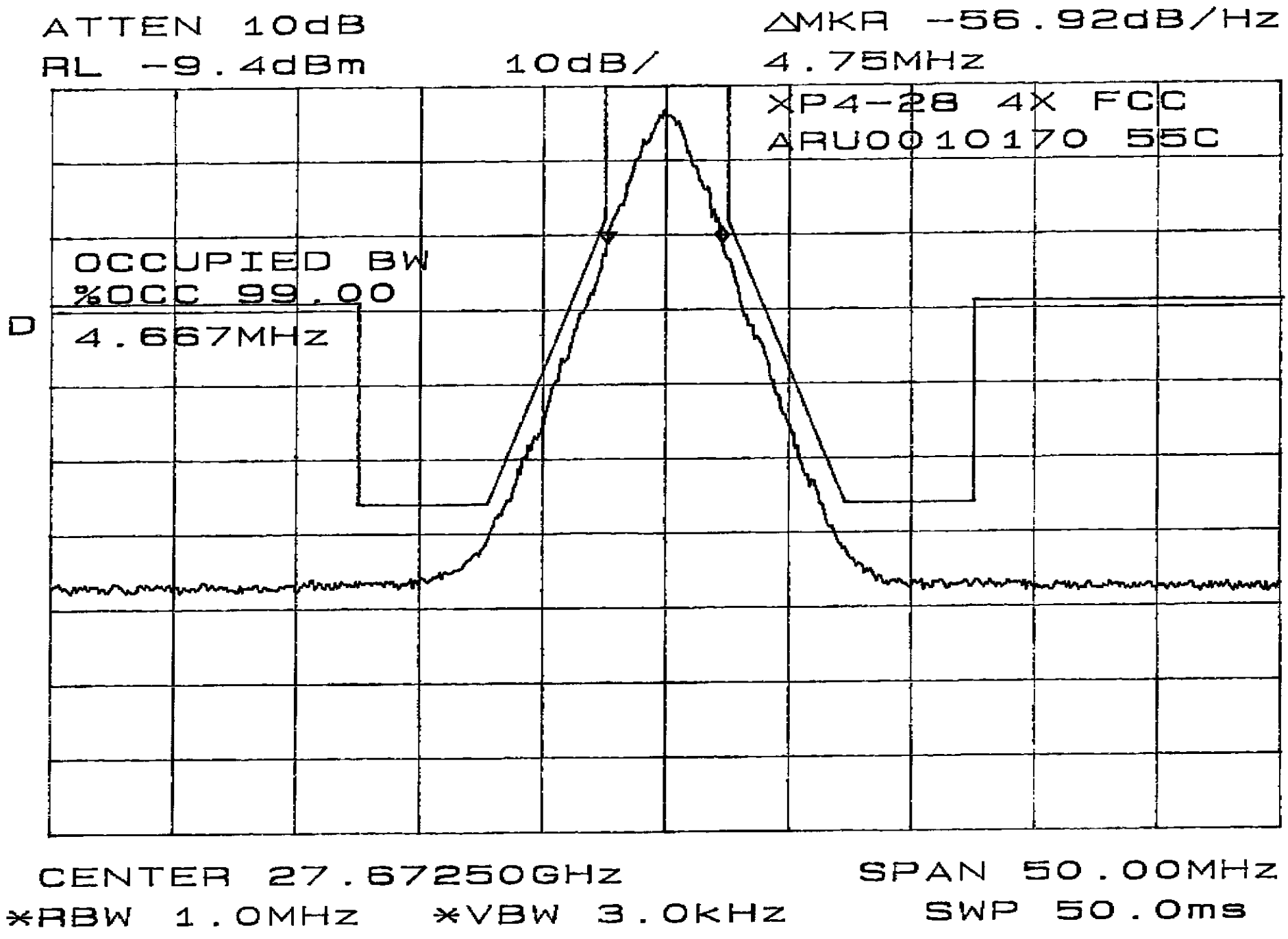
Power out antenna port is 16 dBm
Transmit Bandwidth is 10.00 MHz

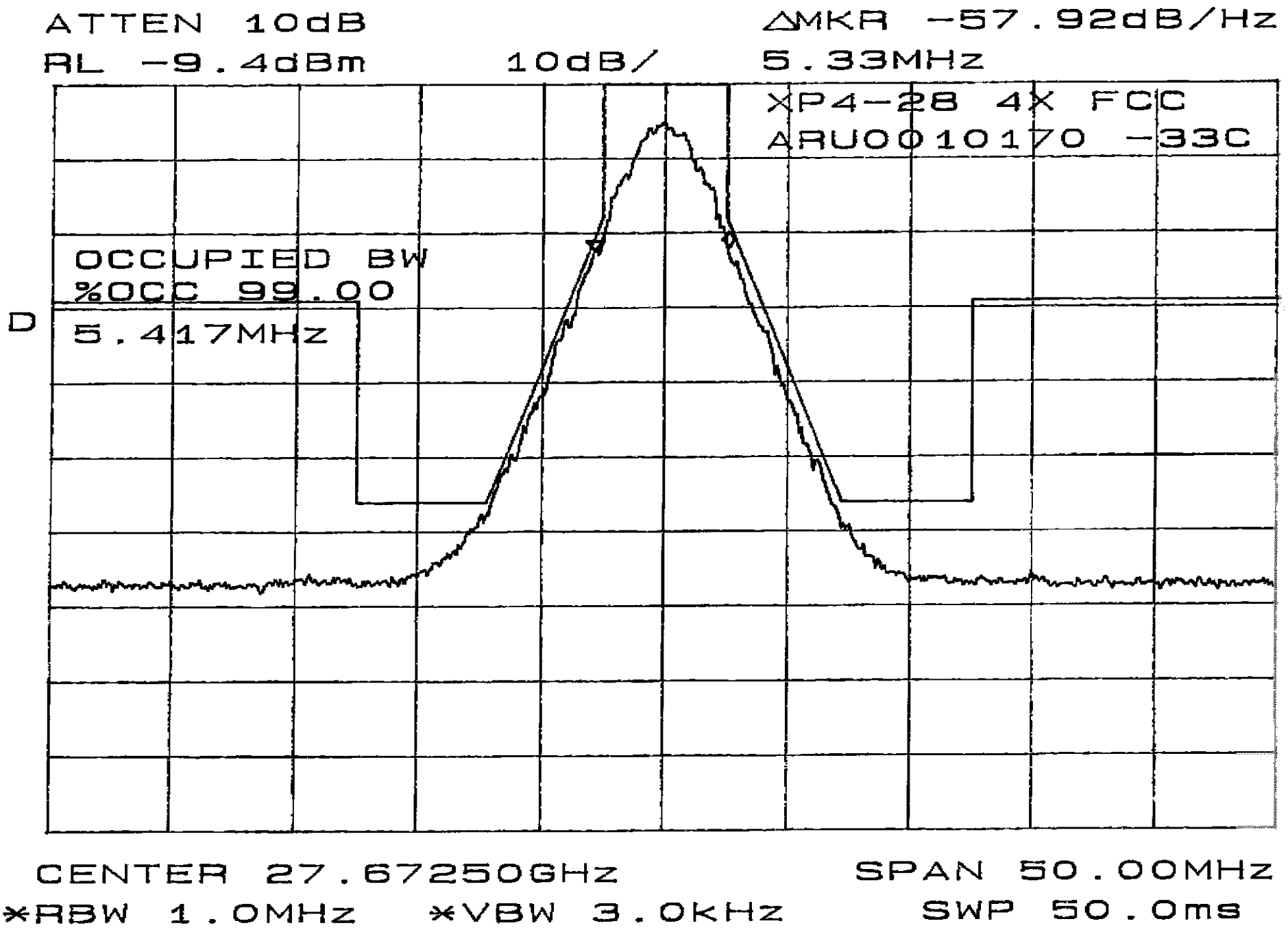


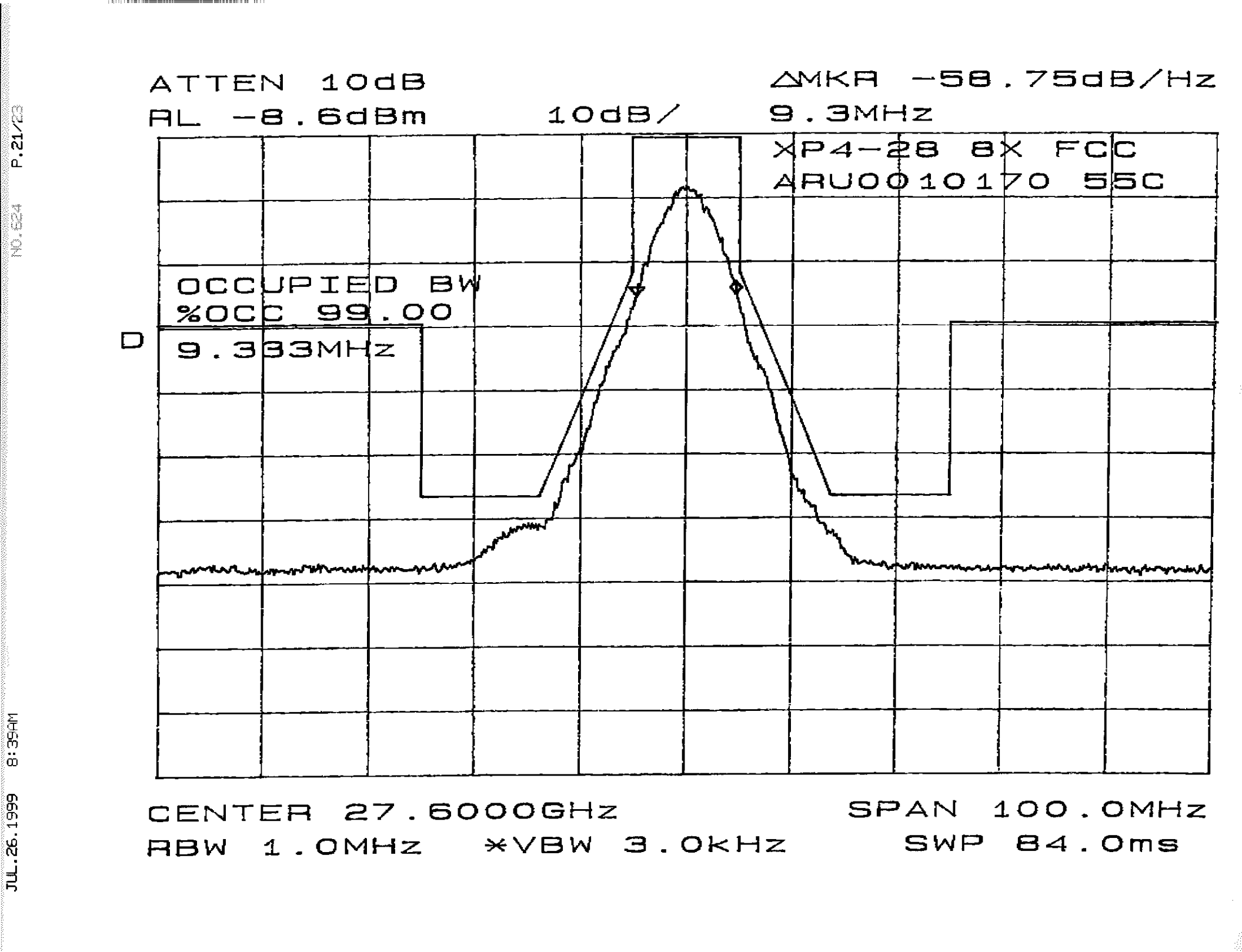
$y = (-29 \; -29 \; -56 \; -56 \; -21 \; 0 \; 0 \; -21 \; -56 \; -56 \; -29 \; -29)$

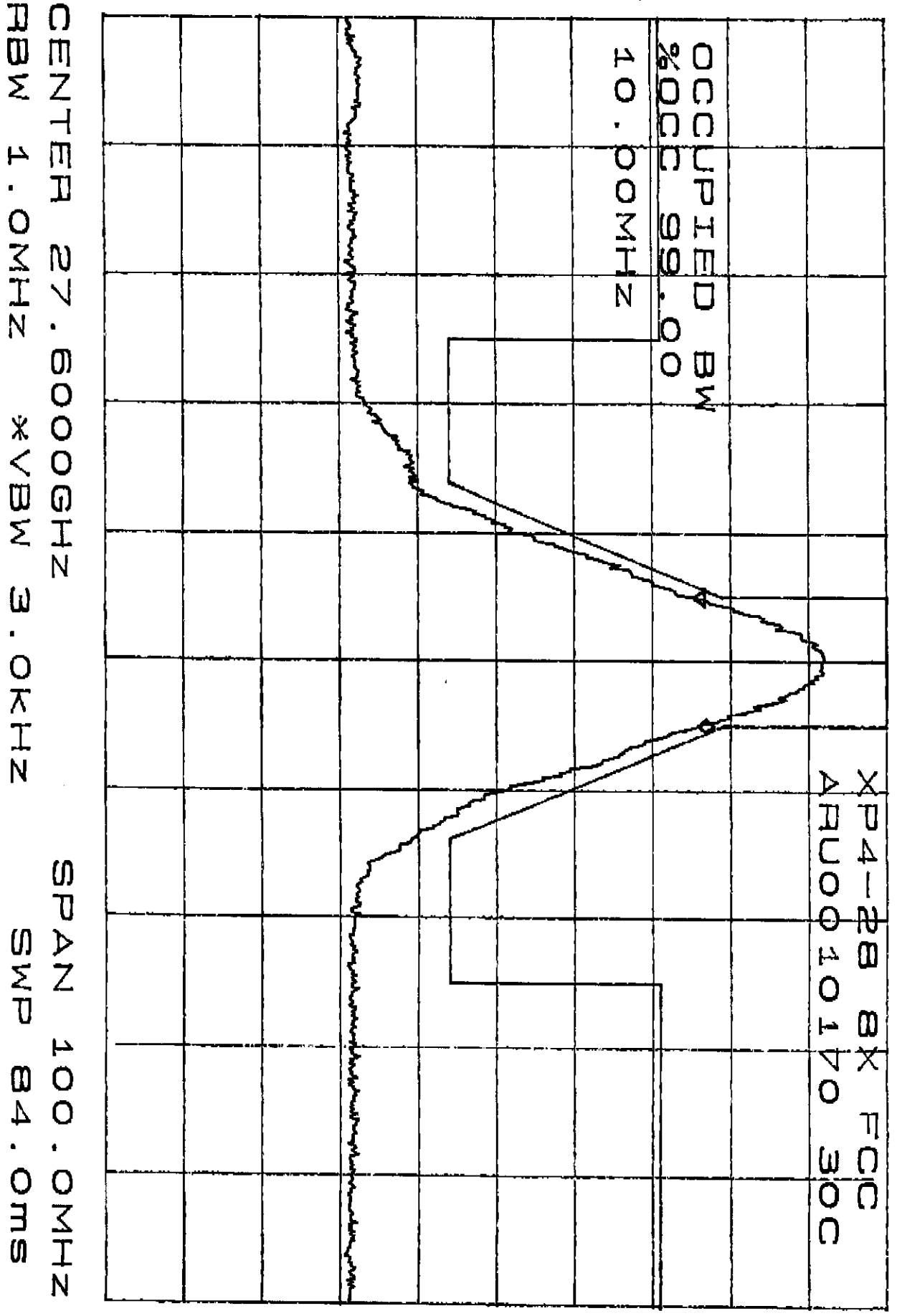
$x = (-50 \; -25 \; -25 \; -13.75 \; -5 \; -5 \; 5 \; 5 \; 13.75 \; 25 \; 25 \; 50)$

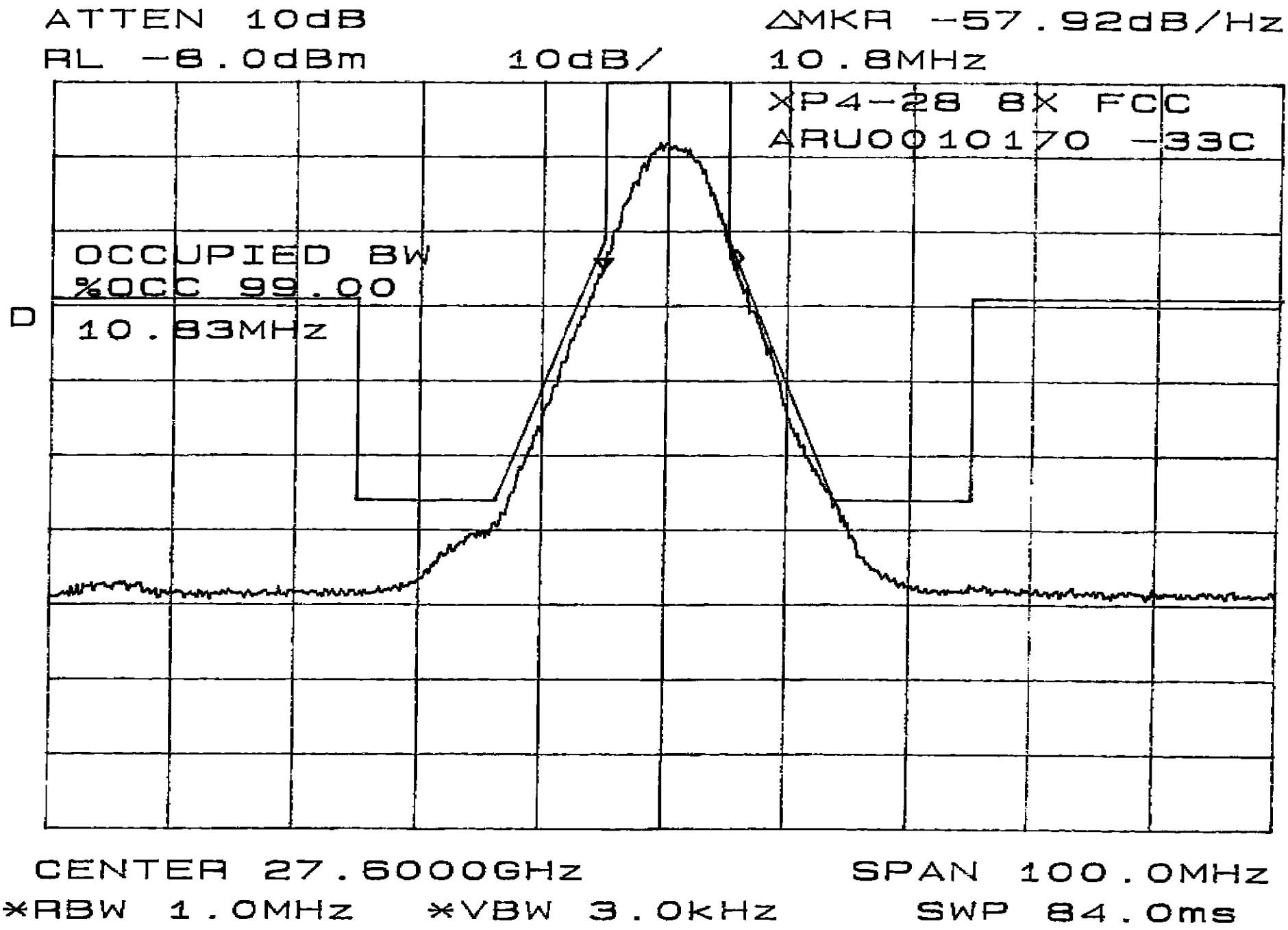

ATTEN 10dB
RL -9.4dBm
10dB/
ΔMKR -58.92dB/Hz
4.83MHz
XP4-28 4X FCC
ARU0010170 30C
OCCUPIED BW
%OCC 99.00
D
4.917MHz
CENTER 27.67250GHz
SPAN 50.00MHz
*RBW 1.0MHz
*VBW 3.0kHz
SWP 50.0ms


ATTEN 10dB
RL -9.4dBm
10dB/
ΔMKA -56.92dB/Hz
4.75MHz
XP4-28 4X FCC
ARU0010170 55C
OCCUPIED BW
%OCC 99.00
D
4.667MHz
CENTER 27.67250GHz
SPAN 50.00MHz
*RBW 1.0MHz
*VBW 3.0kHz
SWP 50.0ms


ATTEN 10dB
RL -9.4dBm
10dB/
ΔMKR -57.92dB/Hz
5.33MHz
XP4-28 4X FCC
ARU0010170 -33C
OCCUPIED BW
%OCC 99.00
D
5.417MHz
CENTER 27.67250GHz
SPAN 50.00MHz
*RBW 1.0MHz
*VBW 3.0KHz
SWP 50.0ms




ATTEN 10dB
RL -8.0dBm
10dB/
ΔMKR -57.42dB/Hz
10.0MHz
XP4-28 8X FCC
ΔRU00 1017O 30C
OCCUPIED BW
%OCC 99.00
10.00MHz
D
CENTER 27.6000GHz
SPAN 100.0MHz
*RBW 1.0MHz *VBW 3.0KHz
SWP 84.0ms


ATTEN 10dB
RL -8.0dBm
10dB/
ΔMKR -57.92dB/Hz
10.8MHz
XP4-28 8X FCC
ARU0010170 -33C
OCCUPIED BW
%OCC 99.00
10.83MHz
D
CENTER 27.6000GHz
SPAN 100.0MHz
*RBW 1.0MHz
*VBW 3.0kHz
SWP 84.0ms