

**Software Test 10 for  
Digivance 800 MHz 50-Watt SDR System  
Model Numbers DGVS-112710SYS and DGVS-122710SYS**

The out of band emissions were measured directly from the EUT antenna output with a spectrum analyzer from 30 MHz to the 10<sup>th</sup> harmonic of the highest carrier frequency. The Software Test 10 simulates the GSM signal created from a sequence of all ones.

**Results:**

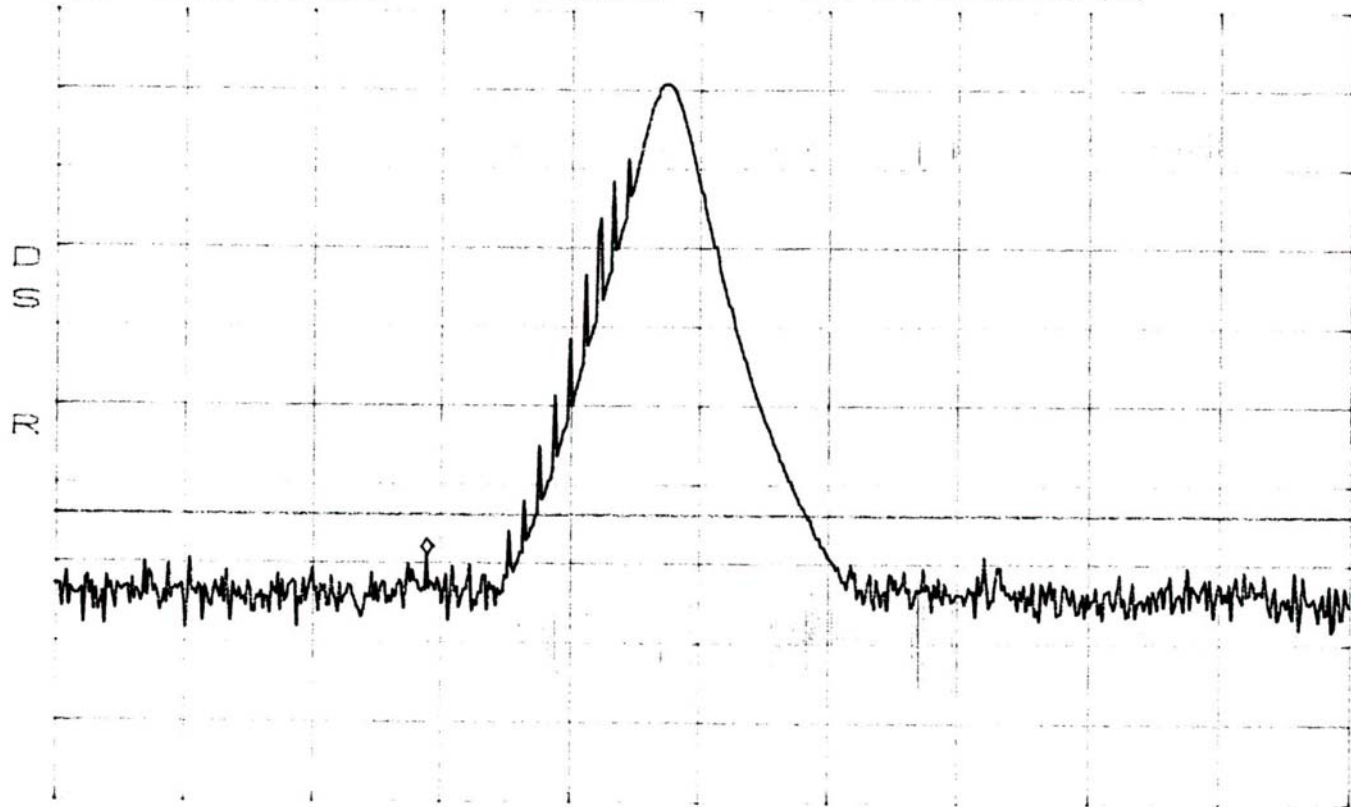
Pass (see plots)

Software Defined Radio  
Software Test 10  
A Band - Channel 181

\*ATTEN 30dB  
RL 51.0dBm

10dB/

MKR -17.83dBm  
878.950MHz



CENTER 880.000MHz

SPAN 5.000MHz

\*RBW 100kHz

VBW 100kHz

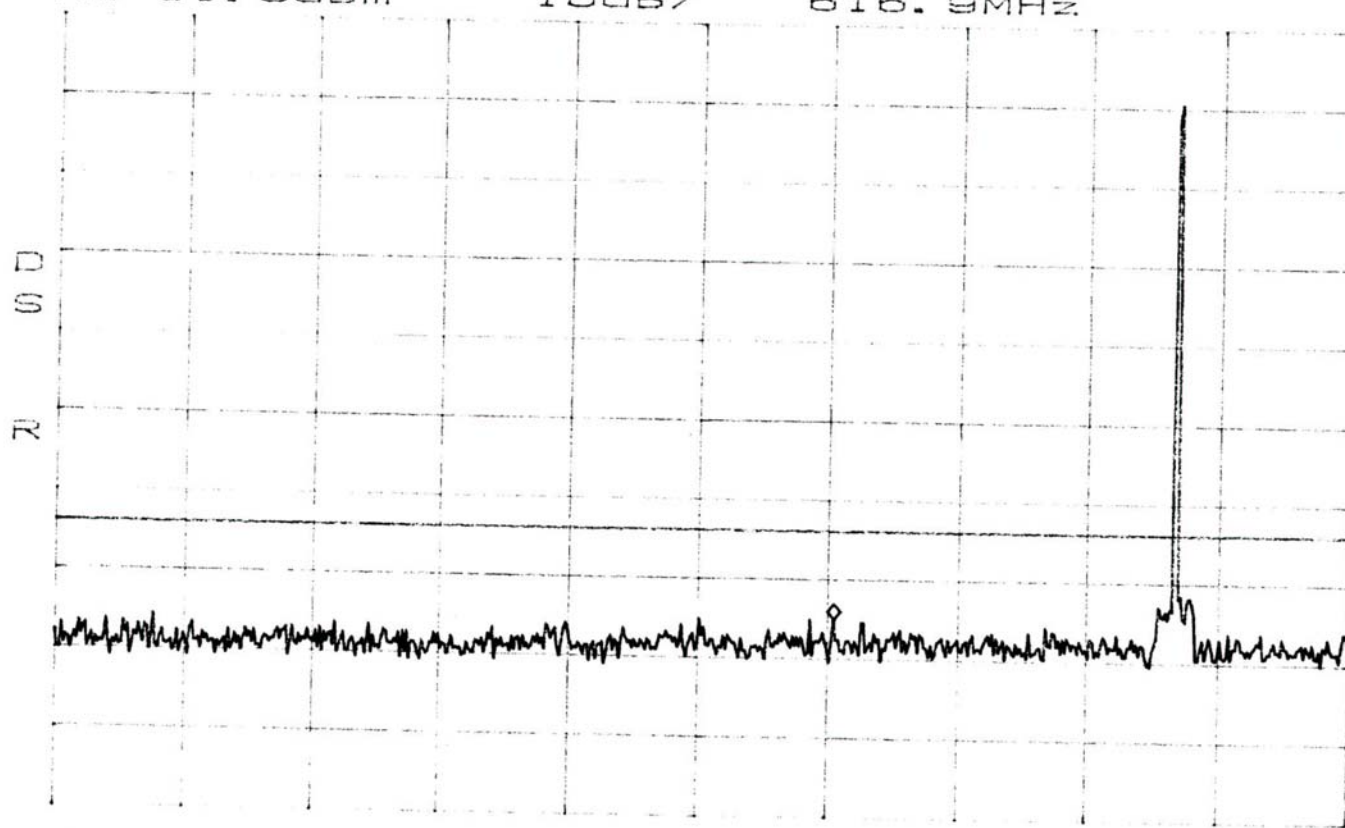
SWP 50ms

Software Defined Radio  
Software Test 10  
A Band - Channel 181

\*ATTEN 30dB  
RL 51.0dBm

10dB/

MKR -24.00dBm  
616.9MHz



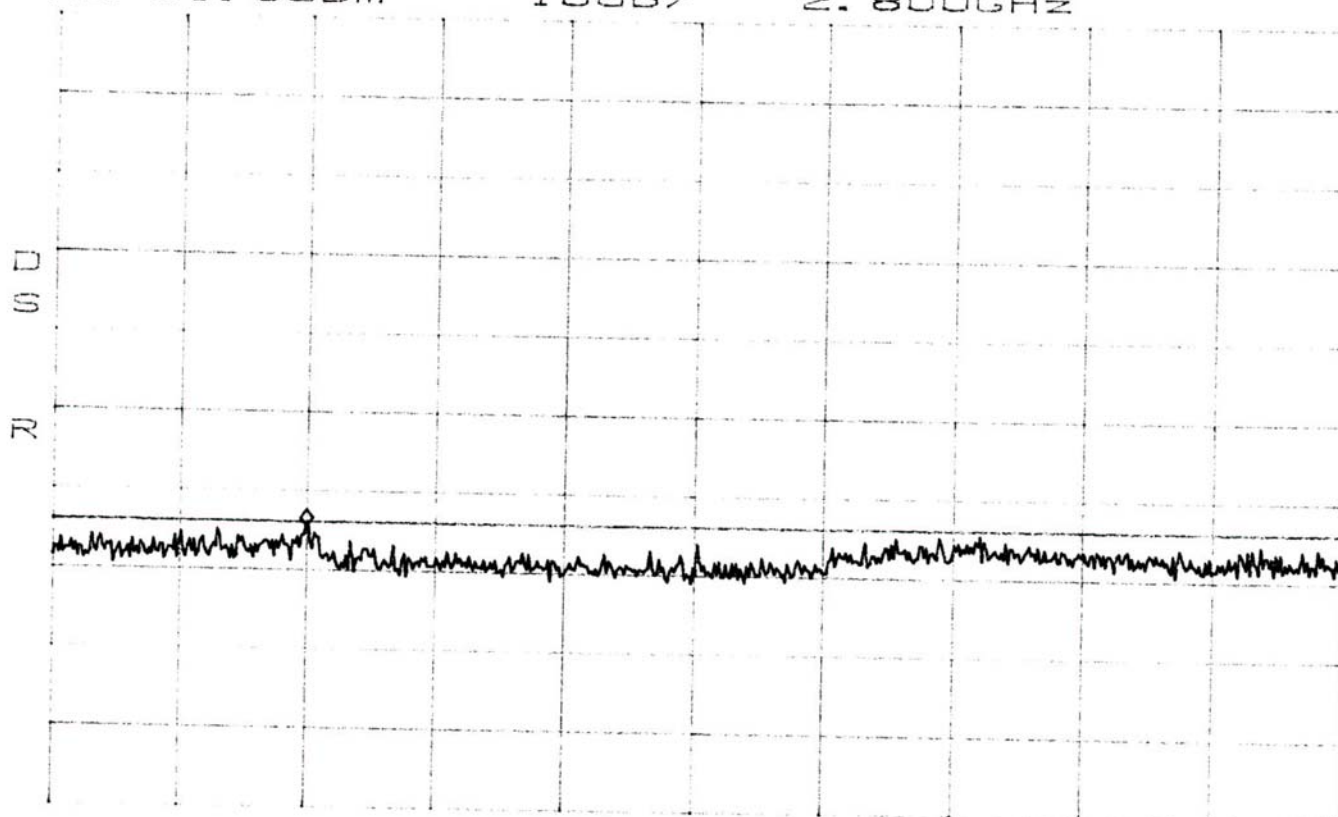
START 30.0MHz STOP 1.0000GHz  
\*RBW 100kHz VBW 100kHz SWP 250ms

Software Defined Radio  
Software Test 10  
A Band - Channel 181

\*ATTEN 30dB  
RL 51.0dBm

10dB/

MKR -13.33dBm  
2.8000GHz



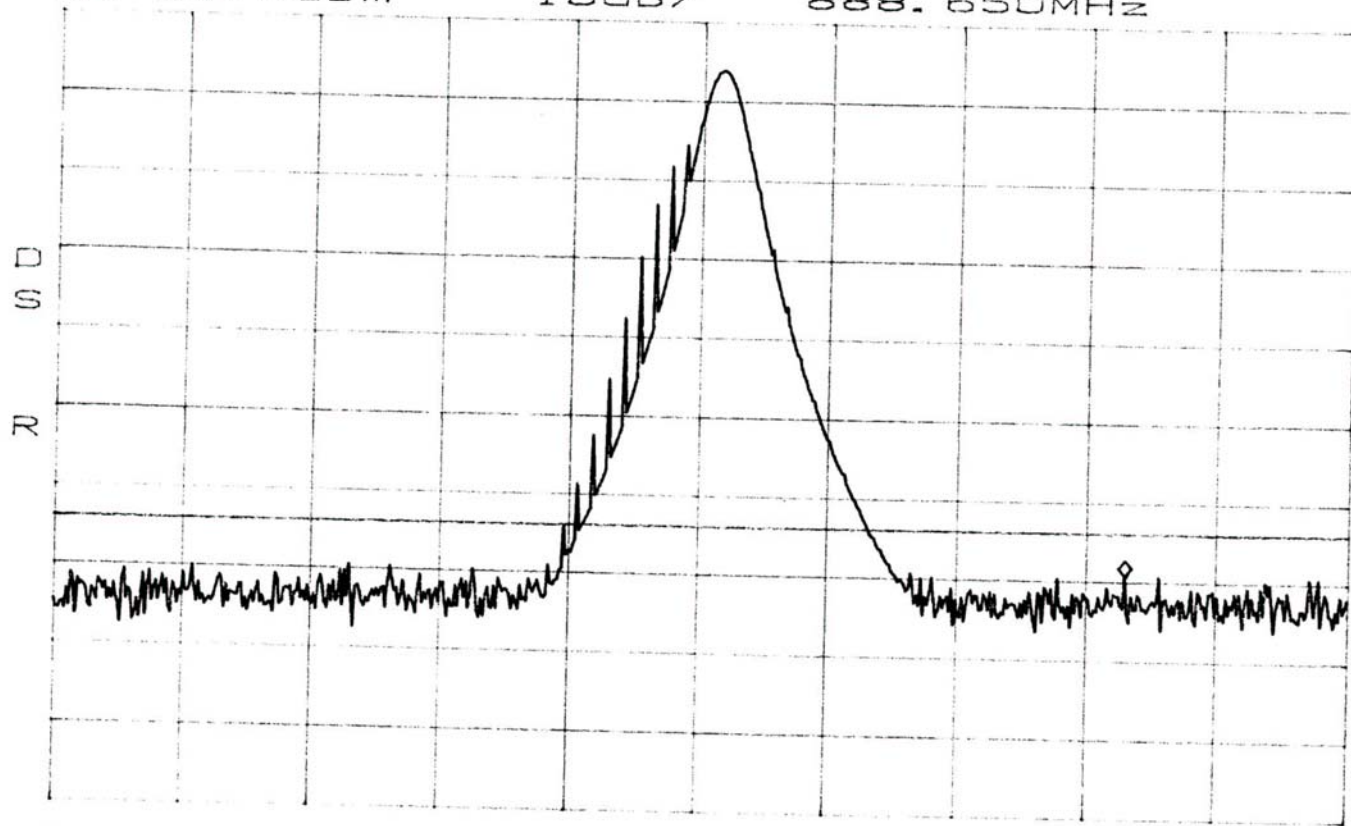
START 1.000GHz STOP 10.000GHz  
\*RBW 1.0MHz VBW 1.0MHz SWP 180ms

Software Defined Radio  
Software Test 10  
B Band - Channel 217

\*ATTEN 30dB  
RL 51.0dBm

10dB/

MKR -18.17dBm  
888.650MHz



CENTER 887.000MHz

\*RBW 100kHz VBW 100kHz

SPAN 5.000MHz

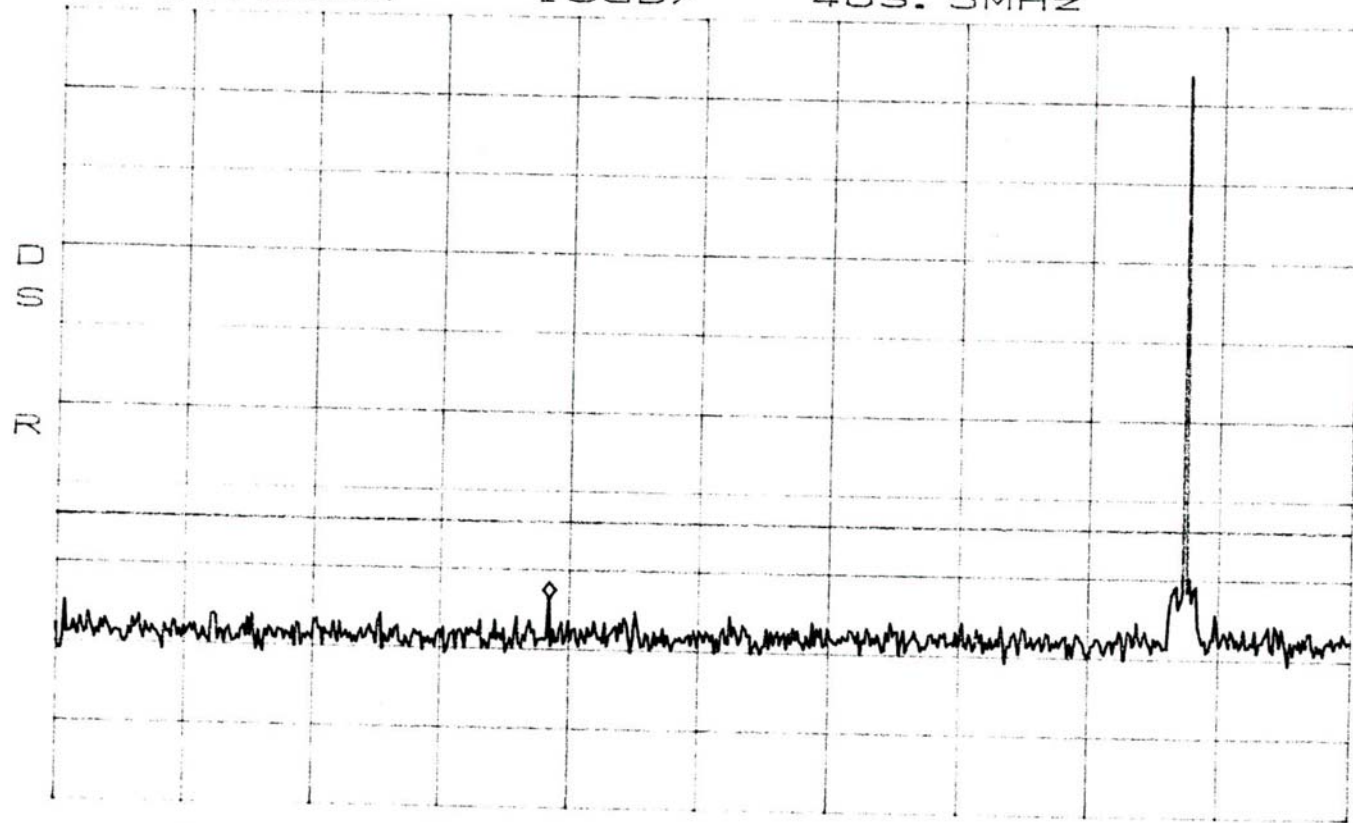
SWP 50ms

Software Defined Radio  
Software Test 10  
B Band - Channel 217

\*ATTEN 30dB  
RL 51.0dBm

10dB/

MKR -22.50dBm  
403.5MHz



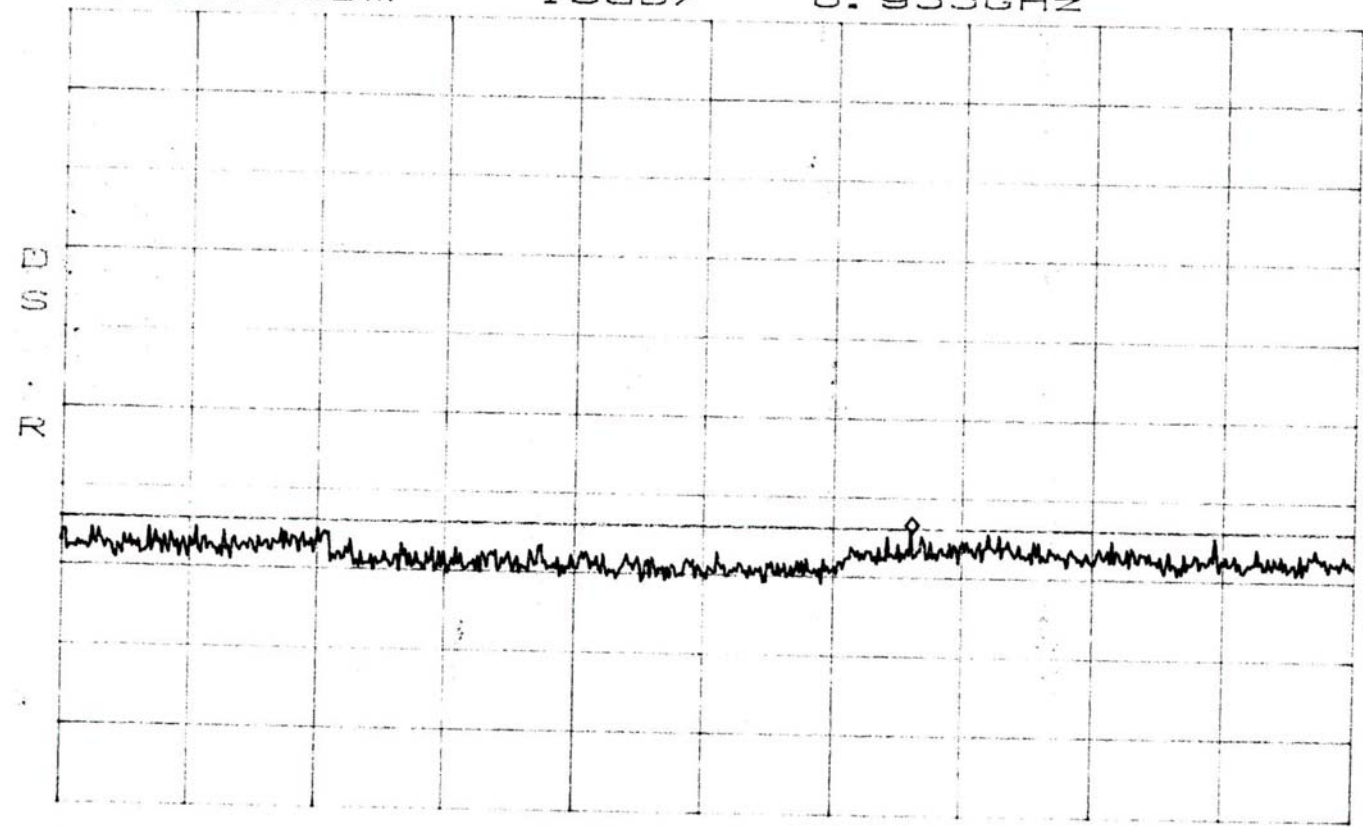
START 30.0MHz STOP 1.0000GHz  
\*RBW 100kHz VBW 100kHz SWP 250ms

Software Defined Radio  
Software Test 10  
B Band - Channel 217

\*ATTEN 30dB  
RL 51.0dBm

10dB/

MKR -13.33dBm  
6.955GHz



START 1.000GHz STOP 10.000GHz  
\*RBW 1.0MHz VBW 1.0MHz SWP 180ms

**Software Test 11 for  
Digivance 800 MHz 50-Watt SDR System  
Model Numbers DGVS-112710SYS and DGVS-122710SYS**

The out of band emissions were measured directly from the EUT antenna output with a spectrum analyzer from 30 MHz to the 10<sup>th</sup> harmonic of the highest carrier frequency. The Software Test 11 simulates the GSM signal created from a repeated sequence with 1 timeslot of valid control channel data and the remaining 7 timeslots filled with dummy bursts.

**Results:**

Pass (see plots)

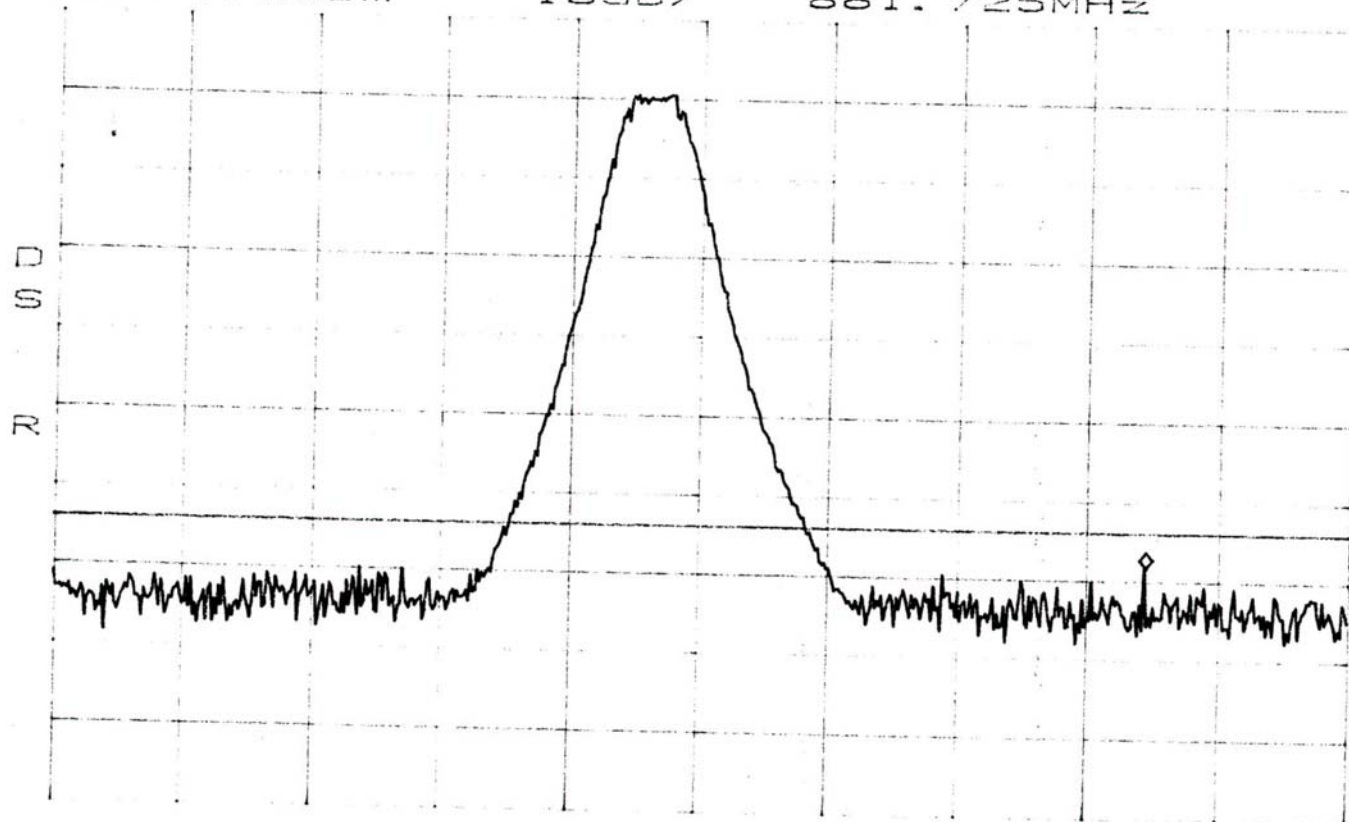


Software Defined Radio  
Software Test 11  
A Band Channel 181

\*ATTEN 30dB  
RL 51.0dBm

10dB/

MKR -17.17dBm  
881.725MHz



CENTER 880.000MHz

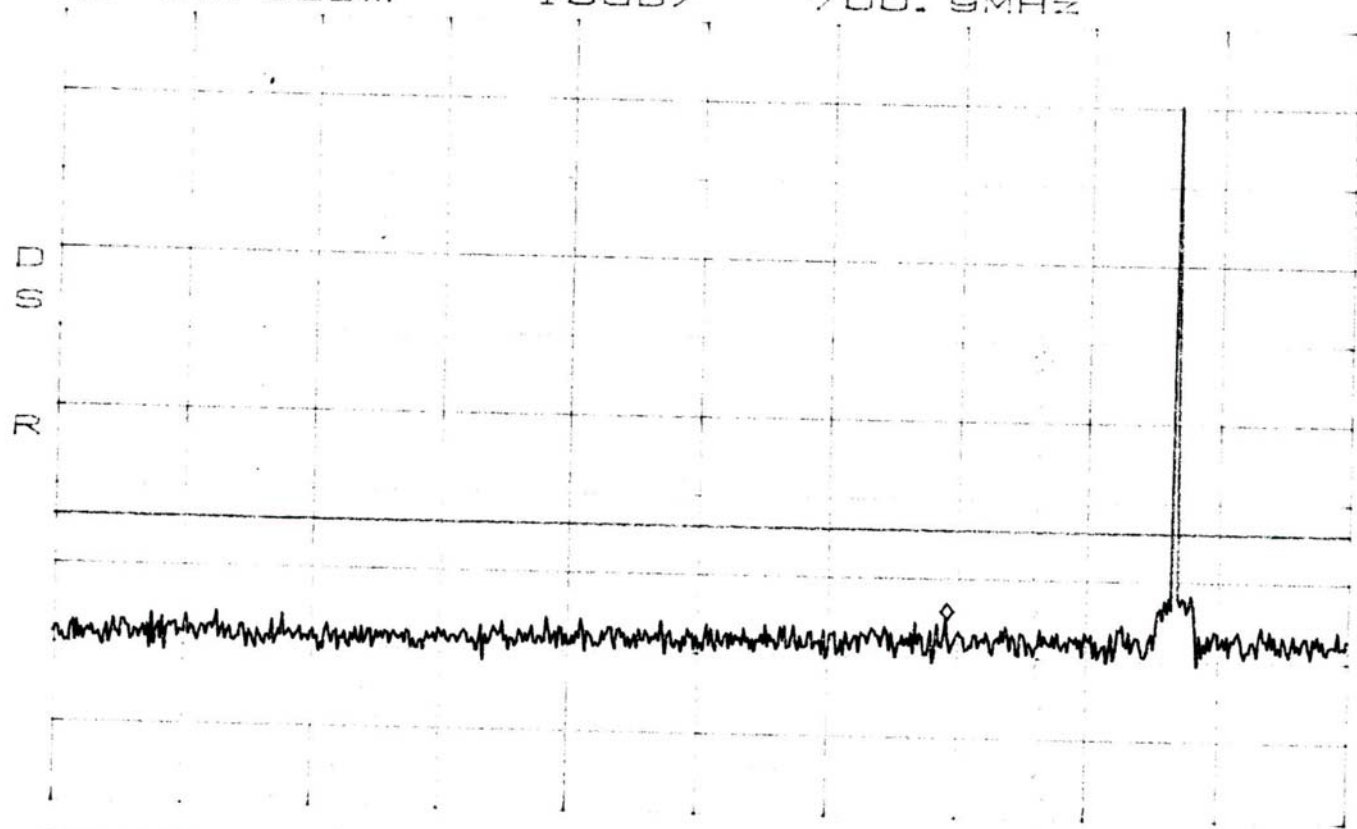
\*RBW 100kHz VBW 100kHz

SPAN 5.000MHz

SWP 50ms

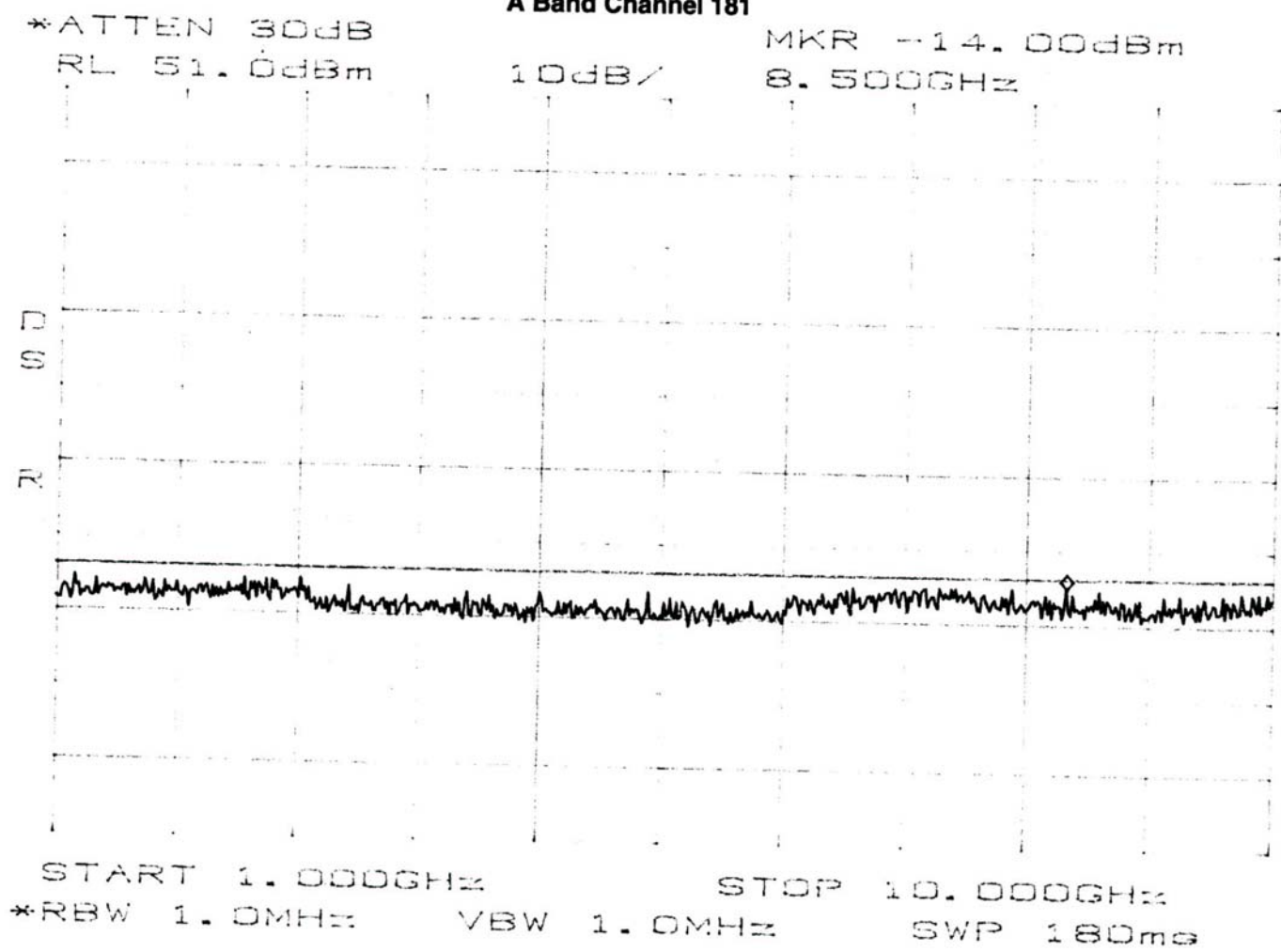
Software Defined Radio  
Software Test 11  
A Band Channel 181

\*ATTEN 30dB  
RL 51.0dBm  
MKB -24.00dBm  
700.002  
/BPO1



START 30.0MHz  
\*RBW 100kHz  
STOP 1.0000GHz  
VBW 100kHz  
SWP 250ms

Software Defined Radio  
Software Test 11  
A Band Channel 181

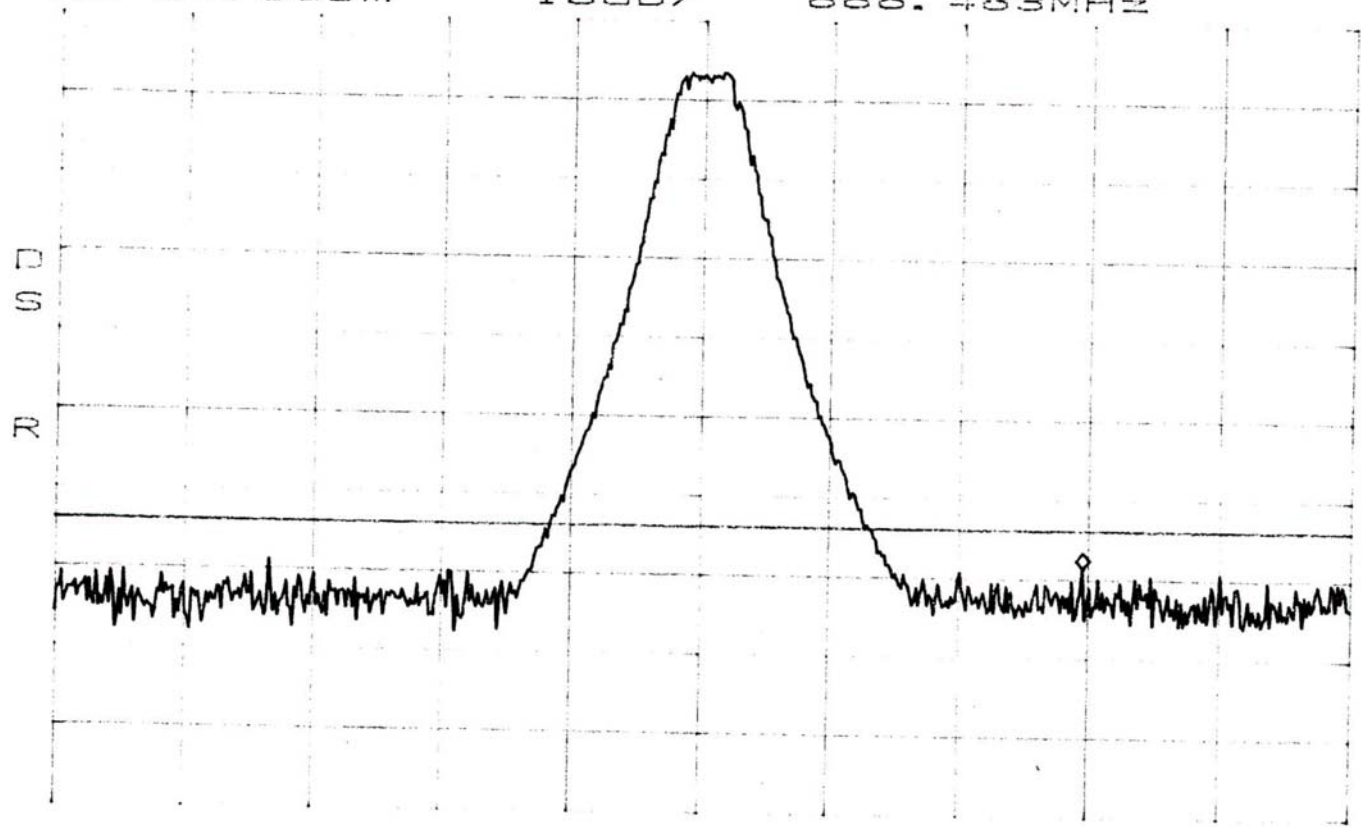


Software Defined Radio  
Software Test 11  
B Band Channel 217

\*ATTEN 30dB  
RL 51.0dBm

10dB/

MKR -17.50dBm  
888.483MHz



CENTER 887.000MHz

\*RBW 100kHz VBW 100kHz

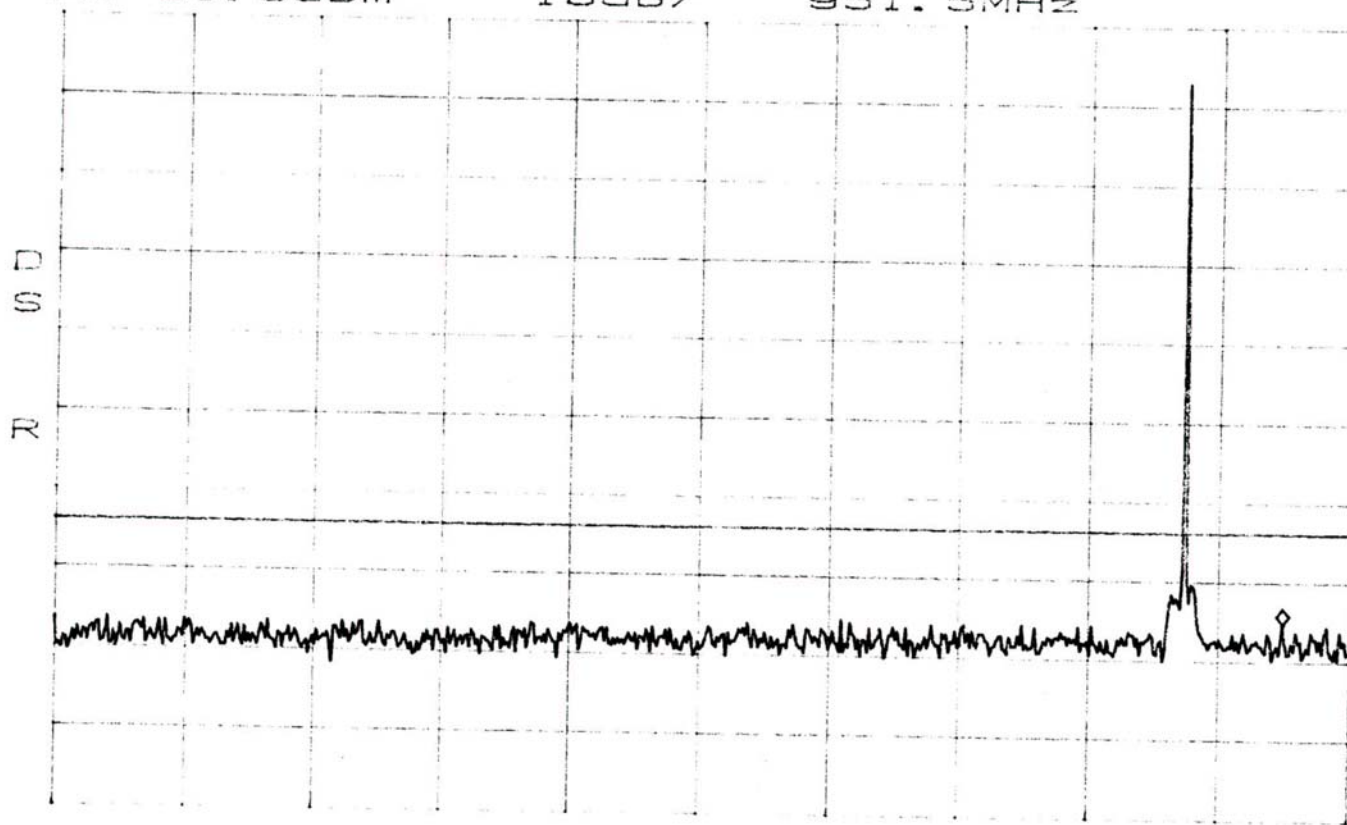
SPAN 5.000MHz

SWP 50ms

Software Defined Radio  
Software Test 11  
B Band Channel 217

\*ATTEN 30dB  
RL 51.0dBm

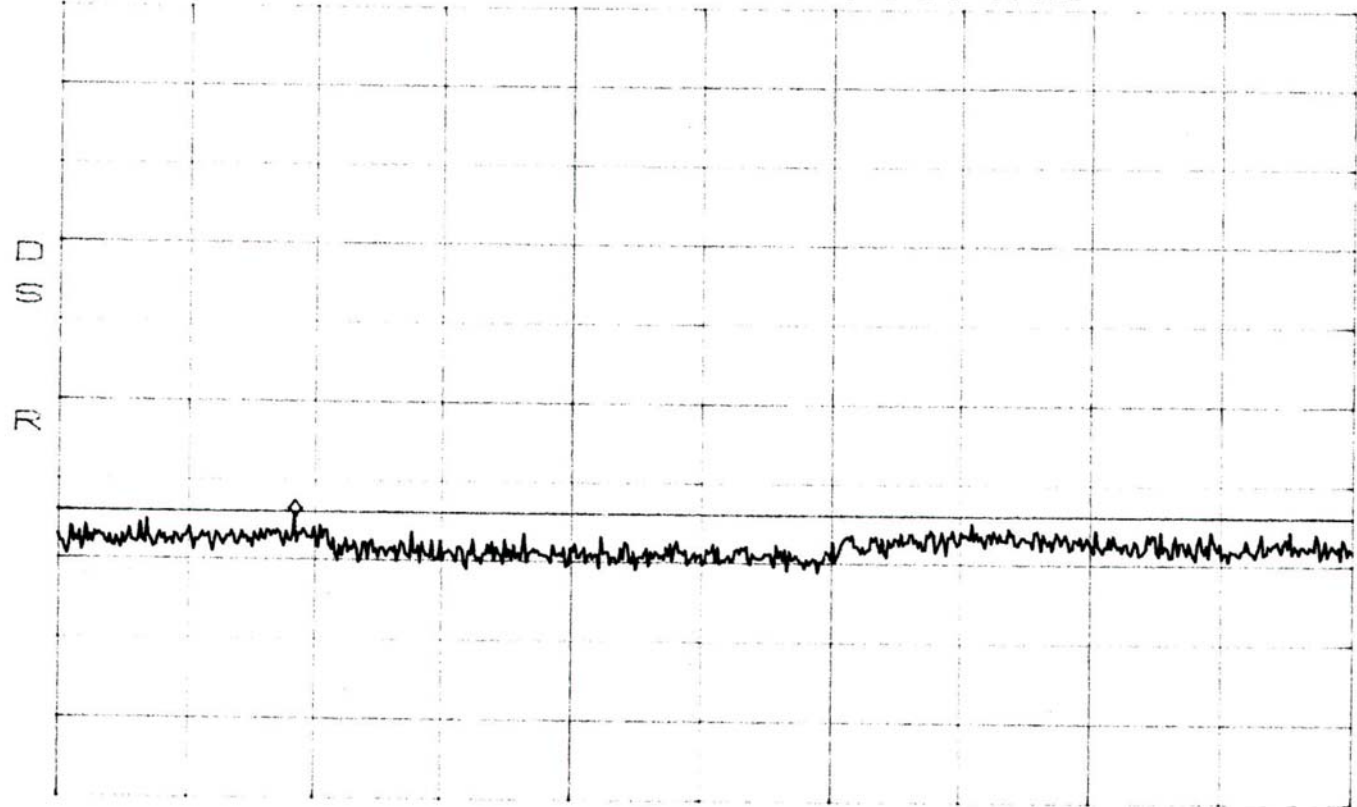
10dB/  
951.5MHz  
MKR -24.17dBm



START 30.0MHz STOP 1.00000GHz  
\*RBW 100kHz VBW 100kHz SWP 250ms

Software Defined Radio  
Software Test 11  
B Band Channel 217

\*ATTEN 30dB      mBPO5 -13.50dBm  
RL 51.0dBm      10dB/      2.66599GHz



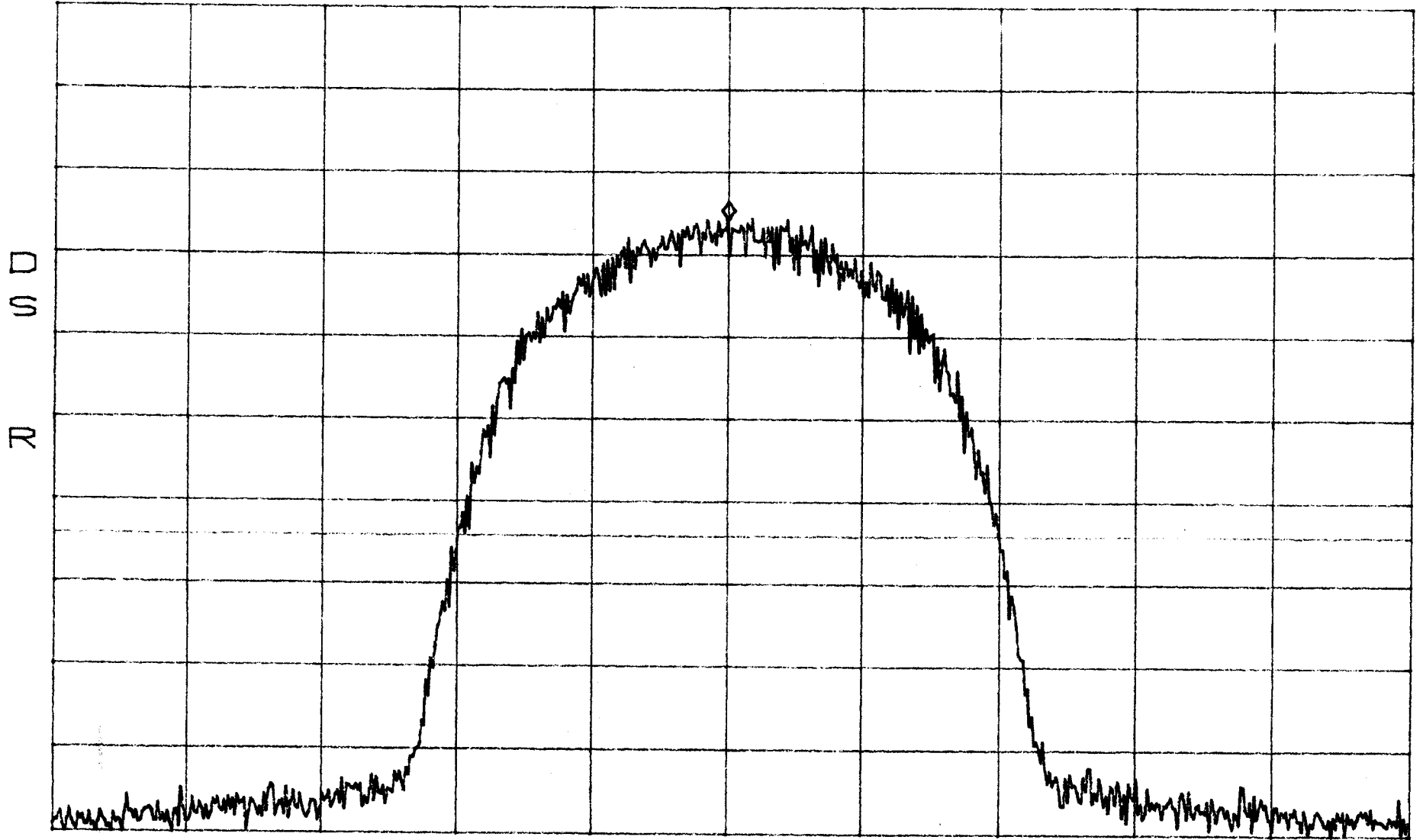
START 1.000GHz      STOP 10.000GHz  
\*RBW 1.0MHz      VBW 1.0MHz      SWP 180ms

Band Edge Low  
Band A channel 128

ATTEN 30dB  
RL 51.2dBm

10dB/

MKR 25.70dBm  
869.2000MHz



CENTER 869.2000MHz SPAN 800.0kHz  
\*RBW 300Hz VBW 300Hz SWP 23sec



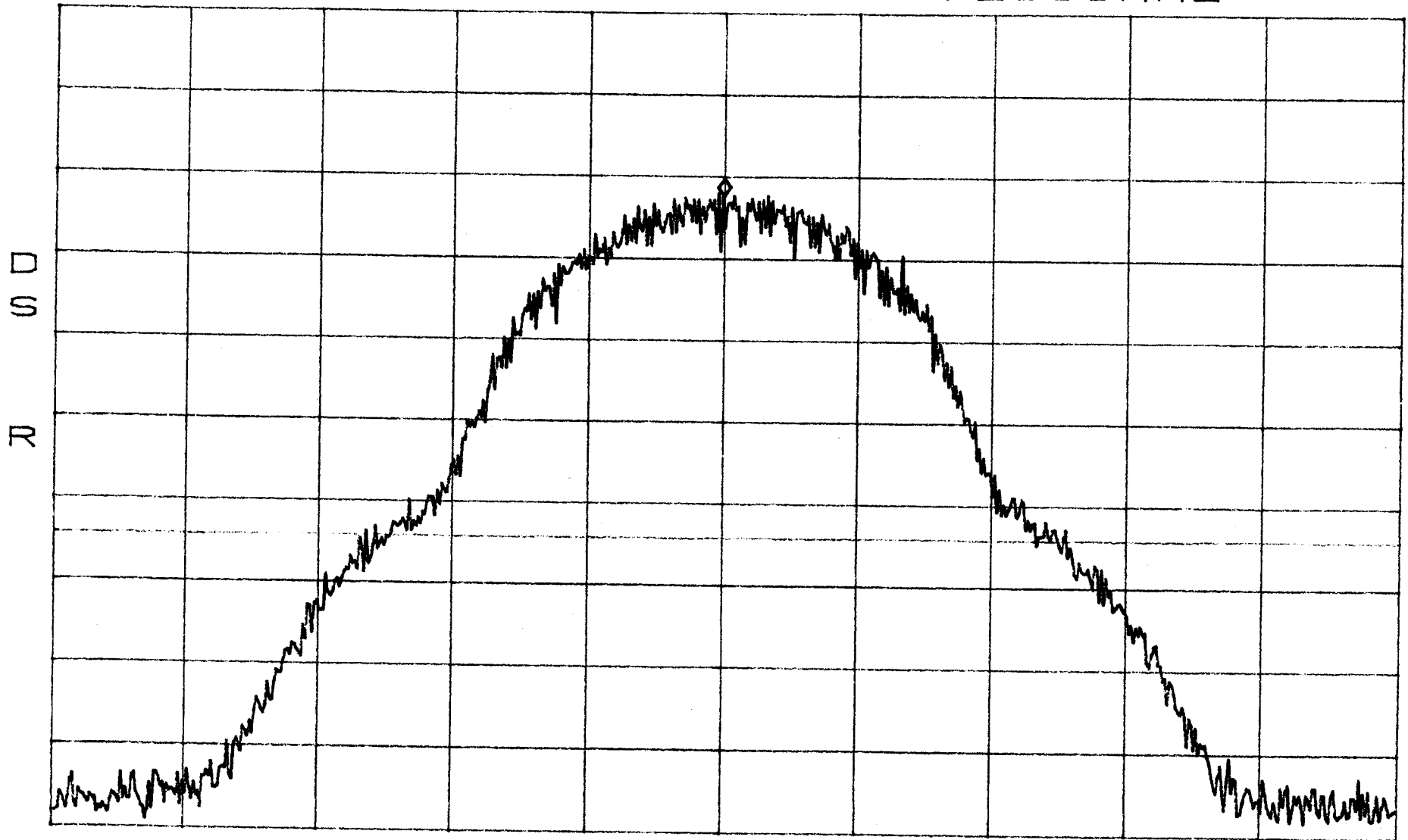


Band Edge Low  
Band B channel 183

ATTEN 30dB  
RL 51.2dBm

MKR 29.03dBm  
880.2000MHz

10dB/BPO1



CENTER 880.2000MHz  
\*RBW 300Hz VBW 300Hz

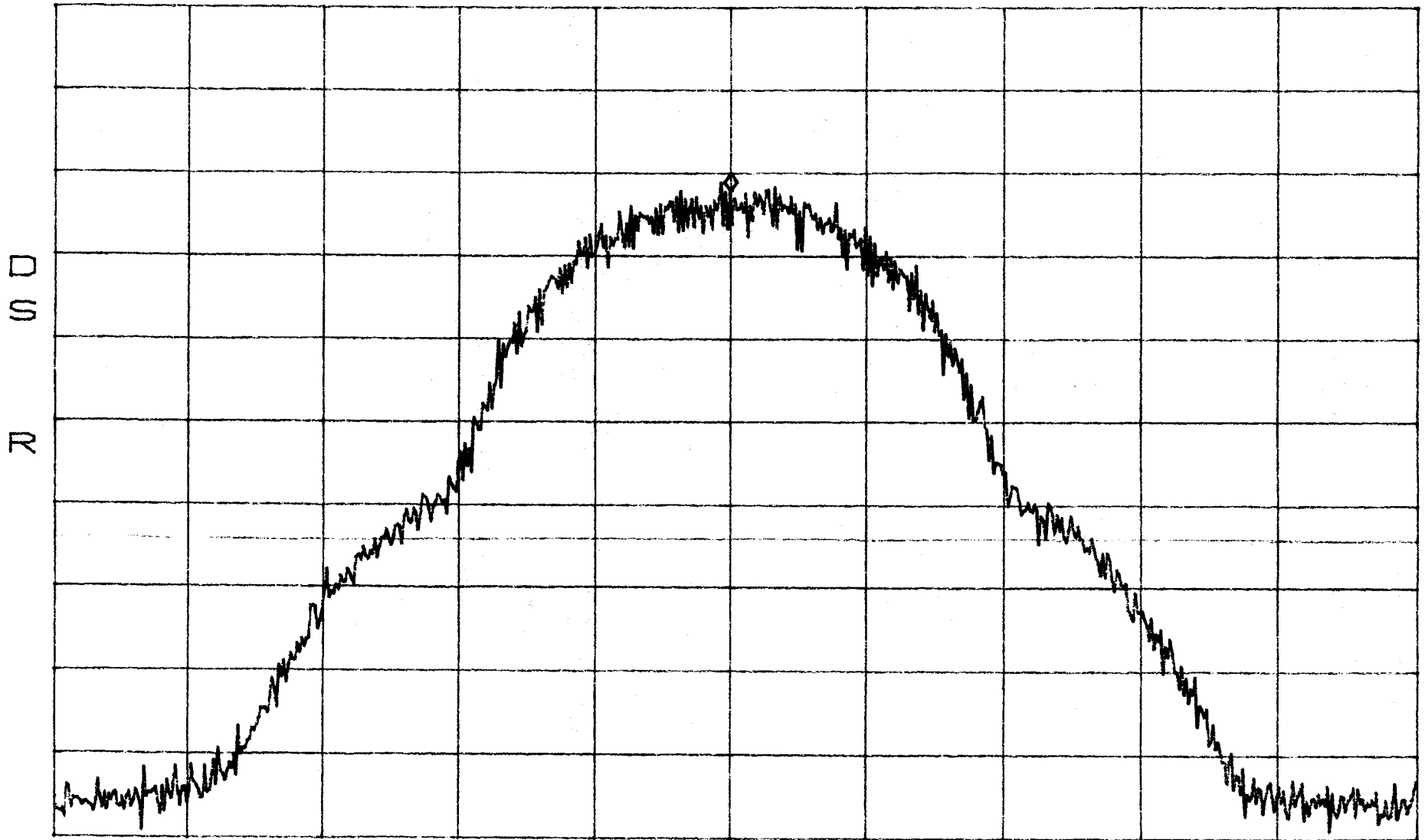
SPAN 800.0kHz  
SWP 23sec

Band Edge High  
Band B channel 251

ATTEN 30dB  
RL 51.2dBm

10dB/

MKR 29.20dBm  
893.8000MHz



CENTER 893.8000MHz  
\*RBW 300Hz

VBW 300Hz

SPAN 800.0kHz  
SWP 23sec

**Occupied Bandwidth Modulation Test for ADC Inc.  
Digivance 800 MHz 50-Watt WBDR System  
Model Numbers DGVS-112710SYS and DGVS-122710SYS**

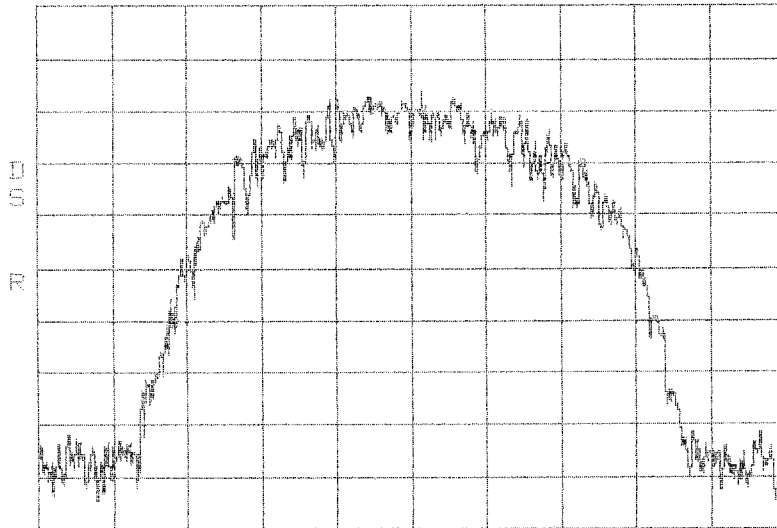
An output Occupied Bandwidth test was done with modulation type GSM. The purpose was to determine the amount of distortion added to this modulation scheme by the EUT. The following plots show output signals.

**Results:**

Pass (see plots)



ATTEN 30dB                      ΔMKR - .67dB  
RL 50.5dBm                      10dB/                      230.8kHz



CENTER 887.0000MHz                      SPAN 500.0kHz  
\*RBW 3.0kHz                      UBW 3.0kHz                      SWP 140ms

**Software Defined Radio  
Occupied Bandwidth  
GSM  
B BAND**

Channel 217

A radiated emission scan was also made, at TUV America's Wild River Lab Large Test Site, with the EUT's antenna replaced with a termination to demonstrate case radiation compliance to the -13 dBm requirement at the 3 carrier frequencies. Radiated emissions from the EUT are measured in the frequency range of 30 to 9000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasi-peak detection and measurements above 1000 MHz are made with a 1 MHz/6 dB bandwidth and peak detection. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimeters above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 10 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees. The field strength levels were measured per ANSI C63.4. The EUT is then replaced with a tuned dipole antenna (below 1 GHz) or horn antenna (above 1 GHz). The substitute antenna was placed in the same polarization as the test antenna. A signal generator was used to generate a signal level that matched the highest level measured from the EUT. The signal generator level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level. 2 case radiation emission scans were performed. The highest emission frequency from the two scans is listed below.

Run 1		
Frequency MHz	dBuV/m(from EUT)	Substitution power level - dBm
910.44	67.5	-32.49

**Case Radiation data is on the following pages:**

# RADIATED EMISSIONS



Test Report #: 2208 Run 1                      Test Area: LTS  
 EUT Model #: DGVS-112710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat

Page: 1 of 6

## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1	DELTA (dBm) part 22 case radiation qp
Channel 128 (869.2 MHz)						
1.0 GHz	38.9 Pk	2.74 / 26.4 / 38.2 / -100.5	-70.66	H / 1.00 / 0	n/a	-57.66*
1.065 GHz	43.15 Pk	2.83 / 26.44 / 39.29 / -100.5	-67.36	H / 1.00 / 0	n/a	-54.36*
1.136 GHz	40.5 Pk	2.93 / 26.48 / 39.9 / -100.5	-70.49	H / 1.00 / 0	n/a	-57.49*
1.207 GHz	40.6 Pk	3.01 / 26.52 / 40.28 / -100.5	-70.64	H / 1.00 / 0	n/a	-57.64*
1.278 GHz	51.3 Pk	3.1 / 26.57 / 40.56 / -100.5	-60.09	H / 1.00 / 0	n/a	-47.09*
1.28 GHz	44.0 Pk	3.1 / 26.57 / 40.57 / -100.5	-67.4	H / 1.00 / 0	n/a	-54.4*
1.491 GHz	44.8 Pk	3.42 / 26.69 / 41.53 / -100.5	-67.11	H / 1.00 / 0	n/a	-54.11*
1.558 GHz	40.45 Pk	3.48 / 27.04 / 41.72 / -100.5	-71.25	H / 1.00 / 0	n/a	-58.25*
1.633 GHz	42.9 Pk	3.55 / 27.47 / 41.92 / -100.5	-68.5	H / 1.00 / 0	n/a	-55.5*
1.704 GHz	44.0 Pk	3.62 / 27.88 / 42.1 / -100.5	-67.1	H / 1.00 / 0	n/a	-54.1*
1.738 GHz	59.05 Pk	3.68 / 28.08 / 42.19 / -100.5	-51.88	H / 1.00 / 0	n/a	-38.88*
1.775 GHz	42.5 Pk	3.74 / 28.3 / 42.31 / -100.5	-68.27	H / 1.00 / 0	n/a	-55.27*
1.78 GHz	41.7 Pk	3.75 / 28.32 / 42.32 / -100.5	-69.05	H / 1.00 / 0	n/a	-56.05*
1.846 GHz	40.15 Pk	3.83 / 28.71 / 42.54 / -100.5	-70.35	H / 1.00 / 0	n/a	-57.35*
2.333 GHz	47.3 Pk	4.23 / 30.33 / 43.62 / -100.5	-62.26	H / 1.00 / 0	n/a	-49.26*
2.608 GHz	40.95 Pk	4.43 / 30.92 / 43.7 / -100.5	-67.91	H / 1.00 / 0	n/a	-54.91*
3.477 GHz	42.55 Pk	5.26 / 32.94 / 44.3 / -100.5	-64.05	H / 1.00 / 0	n/a	-51.05*
8.692 GHz	34.7 Pk	9.23 / 38.51 / 43.26 / -100.5	-61.31	H / 1.00 / 0	n/a	-48.31*
1738 MHz maxed:						
1.738 GHz	66.25 Pk	3.68 / 28.08 / 42.19 / -100.5	-44.68	H / 2.30 / 271	n/a	-31.68*
1.738 GHz	73.2 Pk	3.68 / 28.08 / 42.19 / -100.5	-37.73	V / 1.00 / 180	n/a	-24.73*
1.065 GHz	49.7 Pk	2.83 / 26.44 / 39.29 / -100.5	-60.81	V / 1.00 / 180	n/a	-47.81*
1.136 GHz	53.7 Pk	2.93 / 26.48 / 39.9 / -100.5	-57.29	V / 1.00 / 180	n/a	-44.29*
1.207 GHz	57.0 Pk	3.01 / 26.52 / 40.28 / -100.5	-54.24	V / 1.00 / 180	n/a	-41.24*

Tested by: J. C. Sausen

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Reviewed by: T. K. Swanson

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# RADIATED EMISSIONS



Test Report #: 2208 Run 1                      Test Area: LTS  
 EUT Model #: DGVS-112710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat

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## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1	DELTA (dBm) part 22 case radiation qp
1.278 GHz	62.65 Pk	3.1 / 26.57 / 40.56 / -100.5	-48.74	V / 1.00 / 180	n/a	-35.74*
1.491 GHz	50.6 Pk	3.42 / 26.69 / 41.53 / -100.5	-61.31	V / 1.00 / 180	n/a	-48.31*
1.704 GHz	50.75 Pk	3.62 / 27.88 / 42.1 / -100.5	-60.35	V / 1.00 / 180	n/a	-47.35*
1.775 GHz	46.75 Pk	3.74 / 28.3 / 42.31 / -100.5	-64.02	V / 1.00 / 180	n/a	-51.02*
1.78 GHz	48.3 Pk	3.75 / 28.32 / 42.32 / -100.5	-62.45	V / 1.00 / 180	n/a	-49.45*
1.846 GHz	46.65 Pk	3.83 / 28.71 / 42.54 / -100.5	-63.85	V / 1.00 / 180	n/a	-50.85*
1.738 GHz	66.1 Pk	3.68 / 28.08 / 42.19 / -100.5	-44.83	H / 2.60 / 180	n/a	-31.83*
1278 MHz maxed:						
1.278 GHz	60.65 Pk	3.1 / 26.57 / 40.56 / -100.5	-50.74	H / 1.80 / 137	n/a	-37.74*
2.84 GHz	40.95 Pk	4.6 / 31.38 / 44.12 / -100.5	-67.69	H / 1.80 / 137	n/a	-54.69*
Channel 157 ( 875.0 MHz)						
1750 MHz maxed:						
1.75 GHz	65.5 Pk	3.7 / 28.15 / 42.23 / -100.5	-45.38	H / 1.41 / 183	n/a	-32.38*
1.0 GHz	37.25 Pk	2.74 / 26.4 / 38.2 / -100.5	-72.31	H / 1.41 / 183	n/a	-59.31*
1.065 GHz	48.9 Pk	2.83 / 26.44 / 39.29 / -100.5	-61.61	H / 1.41 / 183	n/a	-48.61*
1.136 GHz	52.7 Pk	2.93 / 26.48 / 39.9 / -100.5	-58.29	H / 1.41 / 183	n/a	-45.29*
1.207 GHz	51.75 Pk	3.01 / 26.52 / 40.28 / -100.5	-59.49	H / 1.41 / 183	n/a	-46.49*
1.278 GHz	58.6 Pk	3.1 / 26.57 / 40.56 / -100.5	-52.79	H / 1.41 / 183	n/a	-39.79*
1.28 GHz	41.35 Pk	3.1 / 26.57 / 40.57 / -100.5	-70.05	H / 1.41 / 183	n/a	-57.05*
1.491 GHz	50.55 Pk	3.42 / 26.69 / 41.53 / -100.5	-61.36	H / 1.41 / 183	n/a	-48.36*
1.633 GHz	48.55 Pk	3.55 / 27.47 / 41.92 / -100.5	-62.85	H / 1.41 / 183	n/a	-49.85*
1.704 GHz	46.0 Pk	3.62 / 27.88 / 42.1 / -100.5	-65.1	H / 1.41 / 183	n/a	-52.1*
1.775 GHz	44.25 Pk	3.74 / 28.3 / 42.31 / -100.5	-66.52	H / 1.41 / 183	n/a	-53.52*
1.846 GHz	49.25 Pk	3.83 / 28.71 / 42.54 / -100.5	-61.25	H / 1.41 / 183	n/a	-48.25*
2.84 GHz	57.3 Pk	4.6 / 31.38 / 44.12 / -100.5	-51.34	H / 1.41 / 183	n/a	-38.34*

Tested by: J. C. Sausen

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Reviewed by: T. K. Swanson

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Signature



# RADIATED EMISSIONS



Test Report #: 2208 Run 1 Test Area: LTS  
 EUT Model #: DGVS-112710SYS Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC Temperature: 23.0 °C  
 Test Method: FCC Part 22 Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat

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## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1	DELTA (dBm) part 22 case radiation qp
2.625 GHz	42.65 Pk	4.44 / 30.95 / 43.7 / -100.5	-66.16	H / 1.41 / 183	n/a	-53.16*
1750 MHz maxed:						
1.75 GHz	72.95 Pk	3.7 / 28.15 / 42.23 / -100.5	-37.93	V / 1.00 / 184	n/a	-24.93*
8.692 GHz	35.45 Pk	9.23 / 38.51 / 43.26 / -100.5	-60.56	V / 1.00 / 184	n/a	-47.56*
8.75 GHz	35.85 Pk	9.24 / 38.7 / 43.29 / -100.5	-59.99	V / 1.00 / 184	n/a	-46.99*
Channel 239 (891.4 MHz)						
1782 MHz maxed:						
1.783 GHz	69.1 Pk	3.75 / 28.34 / 42.33 / -100.5	-41.64	V / 1.80 / 185	n/a	-28.64*
1.136 GHz	41.85 Pk	2.93 / 26.48 / 39.9 / -100.5	-69.14	V / 1.80 / 185	n/a	-56.14*
1.207 GHz	54.2 Pk	3.01 / 26.52 / 40.28 / -100.5	-57.04	V / 1.80 / 185	n/a	-44.04*
1.278 GHz	59.9 Pk	3.1 / 26.57 / 40.56 / -100.5	-51.49	V / 1.80 / 185	n/a	-38.49*
1.28 GHz	42.95 Pk	3.1 / 26.57 / 40.57 / -100.5	-68.45	V / 1.80 / 185	n/a	-55.45*
1.491 GHz	54.2 Pk	3.42 / 26.69 / 41.53 / -100.5	-57.71	V / 1.80 / 185	n/a	-44.71*
1.633 GHz	41.65 Pk	3.55 / 27.47 / 41.92 / -100.5	-69.75	V / 1.80 / 185	n/a	-56.75*
1.704 GHz	45.85 Pk	3.62 / 27.88 / 42.1 / -100.5	-65.25	V / 1.80 / 185	n/a	-52.25*
1.775 GHz	49.65 Pk	3.74 / 28.3 / 42.31 / -100.5	-61.12	V / 1.80 / 185	n/a	-48.12*
1.846 GHz	42.85 Pk	3.83 / 28.71 / 42.54 / -100.5	-67.65	V / 1.80 / 185	n/a	-54.65*
1782 MHz maxed:						
1.783 GHz	66.85 Pk	3.75 / 28.34 / 42.33 / -100.5	-43.89	H / 1.60 / 233	n/a	-30.89*
1.633 GHz	50.05 Pk	3.55 / 27.47 / 41.92 / -100.5	-61.35	H / 1.60 / 233	n/a	-48.35*
Channel 128 (869.2 MHz)						
73.42 MHz	36.6 Qp	0.7 / 8.5 / 0.0 / -100.5	-54.7	V / 1.50 / 235	n/a	-41.7
150.17 MHz	32.4 Qp	1.0 / 9.95 / 0.0 / -100.5	-57.15	V / 1.50 / 235	n/a	-44.15
710.015 MHz	31.05 Qp	2.3 / 21.3 / 0.0 / -100.5	-45.85	V / 1.50 / 235	n/a	-32.85

Tested by: J. C. Sausen

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Reviewed by: T. K. Swanson

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# RADIATED EMISSIONS



Test Report #: 2208 Run 1                      Test Area: LTS  
 EUT Model #: DGVS-112710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat                      Page: 4 of 6

## List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA1	DELTA (dBm) part 22 case radiation qp
910.406 MHz	39.05 Qp	2.61 / 23.3 / 0.0 / -100.5	-35.54	V / 1.70 / 235	n/a	-22.54
910.441 MHz	41.95 Qp	2.61 / 23.3 / 0.0 / -100.5	-32.64	V / 2.90 / 235	n/a	-19.64
910.441 MHz	40.15 Qp	2.61 / 23.3 / 0.0 / -100.5	-34.44	H / 2.90 / 235	n/a	-21.44
Channel 157 (875.0MHz)						
910.441 MHz	39.75 Qp	2.61 / 23.3 / 0.0 / -100.5	-34.84	H / 2.90 / 235	n/a	-21.84
910.441 MHz	42.1 Qp	2.61 / 23.3 / 0.0 / -100.5	-32.49	V / 2.90 / 235	n/a	-19.49
Channel 239 (891.4 MHz)						
910.441 MHz	41.5 Qp	2.61 / 23.3 / 0.0 / -100.5	-33.09	V / 2.90 / 235	n/a	-20.09
910.441 MHz	40.2 Qp	2.61 / 23.3 / 0.0 / -100.5	-34.39	H / 2.90 / 235	n/a	-21.39
substitution signal						
910.43 MHz	41.6 Qp	2.61 / 23.3 / 0.0 / -100.5	-32.99	V / 1.00 / 0	n/a	-19.99
signal generator level - cable loss = -26.9 dBm - 6.2 db (dipole factor w/10 dB pad) = -33.1 dBm to get 67.5 dBuV/m						

Tested by: J. C. Sausen

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Reviewed by: T. K. Swanson

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# RADIATED EMISSIONS



Test Report #: 2208 Run 1 Test Area: LTS  
EUT Model #: DGVS-112710SYS Date: 5/7/04  
EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC Temperature: 23.0 °C  
Test Method: FCC Part 22 Air Pressure: 98.0 kPa  
Customer: ADC Mark Miska Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat Page: 6 of 6

Measurement summary for limit2: part 22 case radiation qp (Qp)					
FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA (dBm) part 22 case radiation qp
8.75 GHz	35.85 Pk	9.24 / 38.7 / 43.29 / -100.5	-59.99	V / 1.00 / 184	-46.99*
1.783 GHz	69.1 Pk	3.75 / 28.34 / 42.33 / -100.5	-41.64	V / 1.80 / 185	-28.64*

Tested by: J. C. Sausen  
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Reviewed by: T. K. Swanson  
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# RADIATED EMISSIONS



Test Report #: 2208 Run 2                      Test Area: LTS  
 EUT Model #: DGVS-122710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat

Page: 1 of 6

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA (dBm) part 22 case radiation qp	DELTA2
Channel 182 (880.0 MHz)						
1760 MHz maxed:						
1.76 GHz	68.15 Pk	3.72 / 28.21 / 42.26 / -100.5	-42.69	H / 1.10 / 230	-29.69*	n/a
1.0 GHz	40.35 Pk	2.74 / 26.4 / 38.2 / -100.5	-69.21	H / 1.10 / 230	-56.21*	n/a
1.065 GHz	51.1 Pk	2.83 / 26.44 / 39.29 / -100.5	-59.41	H / 1.10 / 230	-46.41*	n/a
1.136 GHz	47.0 Pk	2.93 / 26.48 / 39.9 / -100.5	-63.99	H / 1.10 / 230	-50.99*	n/a
1.207 GHz	55.95 Pk	3.01 / 26.52 / 40.28 / -100.5	-55.29	H / 1.10 / 230	-42.29*	n/a
1.278 GHz	45.9 Pk	3.1 / 26.57 / 40.56 / -100.5	-65.49	H / 1.10 / 230	-52.49*	n/a
1.491 GHz	53.95 Pk	3.42 / 26.69 / 41.53 / -100.5	-57.96	H / 1.10 / 230	-44.96*	n/a
1.633 GHz	63.3 Pk	3.55 / 27.47 / 41.92 / -100.5	-48.1	H / 1.10 / 230	-35.1*	n/a
1.704 GHz	40.5 Pk	3.62 / 27.88 / 42.1 / -100.5	-70.6	H / 1.10 / 230	-57.6*	n/a
1.775 GHz	45.8 Pk	3.74 / 28.3 / 42.31 / -100.5	-64.97	H / 1.10 / 230	-51.97*	n/a
1.846 GHz	46.85 Pk	3.83 / 28.71 / 42.54 / -100.5	-63.65	H / 1.10 / 230	-50.65*	n/a
2.333 GHz	50.1 Pk	4.23 / 30.33 / 43.62 / -100.5	-59.46	H / 1.10 / 230	-46.46*	n/a
2.84 GHz	47.8 Pk	4.6 / 31.38 / 44.12 / -100.5	-60.84	H / 1.10 / 230	-47.84*	n/a
1.76 GHz	68.95 Pk	3.72 / 28.21 / 42.26 / -100.5	-41.89	V / 2.10 / 239	-28.89*	n/a
1.704 GHz	45.6 Pk	3.62 / 27.88 / 42.1 / -100.5	-65.5	V / 2.10 / 239	-52.5*	n/a
1.775 GHz	52.0 Pk	3.74 / 28.3 / 42.31 / -100.5	-58.77	V / 2.10 / 239	-45.77*	n/a
2.64 GHz	37.55 Pk	4.44 / 30.98 / 43.7 / -100.5	-71.23	V / 2.10 / 239	-58.23*	n/a
3.52 GHz	39.9 Pk	5.33 / 33.05 / 44.35 / -100.5	-66.56	V / 2.10 / 239	-53.56*	n/a
8.8 GHz	37.0 Pk	9.25 / 38.86 / 43.31 / -100.5	-58.7	V / 2.10 / 239	-45.7*	n/a
Channel 217 (887.0 MHz)						
1774 MHz maxed:						
1.774 GHz	61.25 Pk	3.74 / 28.29 / 42.31 / -100.5	-49.53	V / 2.80 / 227	-36.53*	n/a
3.548 GHz	37.65 Pk	5.38 / 33.12 / 44.38 / -100.5	-68.73	V / 2.80 / 227	-55.73*	n/a

Tested by: J. C. Sausen

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Reviewed by: T. K. Swanson

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# RADIATED EMISSIONS



Test Report #: 2208 Run 2                      Test Area: LTS  
 EUT Model #: DGVS-122710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat

Page: 2 of 6

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA (dBm) part 22 case radiation qp	DELTA2
8.87 GHz	36.55 Pk	9.26 / 39.08 / 43.34 / -100.5	-58.95	V / 2.80 / 227	-45.95*	n/a
1.774 GHz	65.7 Pk	3.74 / 28.29 / 42.31 / -100.5	-45.08	H / 1.40 / 258	-32.08*	n/a
1.775 GHz	53.0 Pk	3.74 / 28.3 / 42.31 / -100.5	-57.77	H / 1.40 / 258	-44.77*	n/a
2.84 GHz	58.45 Pk	4.6 / 31.38 / 44.12 / -100.5	-50.19	H / 1.30 / 197	-37.19*	n/a
1.136 GHz	49.8 Pk	2.93 / 26.48 / 39.9 / -100.5	-61.19	H / 1.30 / 197	-48.19*	n/a
1.775 GHz	54.75 Pk	3.74 / 28.3 / 42.31 / -100.5	-56.02	H / 1.30 / 197	-43.02*	n/a
1.846 GHz	51.6 Pk	3.83 / 28.71 / 42.54 / -100.5	-58.9	H / 1.30 / 197	-45.9*	n/a
2.84 GHz	59.0 Pk	4.6 / 31.38 / 44.12 / -100.5	-49.64	H / 1.30 / 197	-36.64*	n/a
3.548 GHz	48.7 Pk	5.38 / 33.12 / 44.38 / -100.5	-57.68	H / 1.30 / 197	-44.68*	n/a
3.548 GHz	48.9 Pk	5.38 / 33.12 / 44.38 / -100.5	-57.48	H / 1.40 / 229	-44.48*	n/a
Channel 251 (893.8 MHz)						
1.788 GHz	69.1 Pk	3.76 / 28.37 / 42.35 / -100.5	-41.62	V / 1.40 / 229	-28.62*	n/a
2.681 GHz	40.05 Pk	4.47 / 31.06 / 43.79 / -100.5	-68.71	V / 1.00 / 235	-55.71*	n/a
3.575 GHz	48.2 Pk	5.43 / 33.18 / 44.41 / -100.5	-58.11	V / 1.00 / 235	-45.11*	n/a
3.575 GHz	47.15 Pk	5.43 / 33.18 / 44.41 / -100.5	-59.16	V / 1.00 / 243	-46.16*	n/a
1.788 GHz	66.9 Pk	3.76 / 28.37 / 42.35 / -100.5	-43.82	H / 1.50 / 234	-30.82*	n/a
1.065 GHz	52.25 Pk	2.83 / 26.44 / 39.29 / -100.5	-58.26	H / 1.50 / 234	-45.26*	n/a
1.278 GHz	48.7 Pk	3.1 / 26.57 / 40.56 / -100.5	-62.69	H / 1.50 / 234	-49.69*	n/a
1.633 GHz	63.65 Pk	3.55 / 27.47 / 41.92 / -100.5	-47.75	H / 1.50 / 234	-34.75*	n/a
3.575 GHz	52.5 Pk	5.43 / 33.18 / 44.41 / -100.5	-53.81	H / 1.20 / 313	-40.81*	n/a
1.065 GHz	55.05 Pk	2.83 / 26.44 / 39.29 / -100.5	-55.46	H / 1.20 / 313	-42.46*	n/a
2.681 GHz	48.75 Pk	4.47 / 31.06 / 43.79 / -100.5	-60.01	H / 1.20 / 313	-47.01*	n/a
8.938 GHz	36.95 Pk	9.27 / 39.3 / 43.38 / -100.5	-58.35	H / 1.20 / 313	-45.35*	n/a
893 MHz maxed:						

Tested by: J. C. Sausen

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Reviewed by: T. K. Swanson

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# RADIATED EMISSIONS



Test Report #: 2208 Run 2                      Test Area: LTS  
 EUT Model #: DGVS-122710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat

Page: 3 of 6

## List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA (dBm) part 22 case radiation qp	DELTA2
910.39 MHz	33.35 Qp	2.61 / 23.3 / 0.0 / -100.5	-41.24	H / 1.80 / 246	-28.24	n/a
710.02 MHz	32.4 Qp	2.3 / 21.3 / 0.0 / -100.5	-44.5	H / 1.80 / 246	-31.5	n/a
168.506 MHz	31.2 Qp	1.07 / 9.1 / 0.0 / -100.5	-59.13	H / 1.80 / 246	-46.13	n/a
142.004 MHz	41.2 Qp	1.0 / 9.78 / 0.0 / -100.5	-48.52	H / 1.80 / 246	-35.52	n/a
80.624 MHz	33.55 Qp	0.8 / 7.51 / 0.0 / -100.5	-58.64	H / 1.80 / 246	-45.64	n/a
910.39 MHz	34.85 Qp	2.61 / 23.3 / 0.0 / -100.5	-39.74	H / 1.80 / 266	-26.74	n/a
910.39 MHz	40.85 Pk	2.61 / 23.3 / 0.0 / -100.5	-33.74	V / 1.50 / 231	-20.74*	n/a
80.624 MHz	31.15 Qp	0.8 / 7.51 / 0.0 / -100.5	-61.04	V / 1.50 / 231	-48.04	n/a
710.02 MHz	35.5 Qp	2.3 / 21.3 / 0.0 / -100.5	-41.4	V / 1.50 / 231	-28.4	n/a
910.39 MHz	38.25 Qp	2.61 / 23.3 / 0.0 / -100.5	-36.34	V / 1.50 / 231	-23.34	n/a
Channel 217 (887 MHz)						
710.02 MHz	35.35 Qp	2.3 / 21.3 / 0.0 / -100.5	-41.55	V / 1.50 / 231	-28.55	n/a
910.39 MHz	37.55 Qp	2.61 / 23.3 / 0.0 / -100.5	-37.04	V / 1.50 / 231	-24.04	n/a
74.924 MHz	36.4 Qp	0.71 / 8.2 / 0.0 / -100.5	-55.19	V / 1.50 / 231	-42.19	n/a
142.004 MHz	39.9 Qp	1.0 / 9.78 / 0.0 / -100.5	-49.82	V / 1.50 / 231	-36.82	n/a
710.02 MHz	35.25 Qp	2.3 / 21.3 / 0.0 / -100.5	-41.65	V / 1.50 / 231	-28.65	n/a
910.39 MHz	37.55 Qp	2.61 / 23.3 / 0.0 / -100.5	-37.04	V / 1.50 / 231	-24.04	n/a
910.39 MHz	39.1 Pk	2.61 / 23.3 / 0.0 / -100.5	-35.49	H / 1.50 / 323	-22.49*	n/a
142.004 MHz	40.6 Qp	1.0 / 9.78 / 0.0 / -100.5	-49.12	H / 1.50 / 323	-36.12	n/a
Channel 182 (880 MHz)						
910.414 MHz	36.55 Qp	2.61 / 23.3 / 0.0 / -100.5	-38.04	H / 1.50 / 323	-25.04	n/a
142.004 MHz	40.6 Qp	1.0 / 9.78 / 0.0 / -100.5	-49.12	H / 1.50 / 323	-36.12	n/a
710.02 MHz	32.25 Qp	2.3 / 21.3 / 0.0 / -100.5	-44.65	V / 1.50 / 323	-31.65	n/a
910.403 MHz	36.22 Qp	2.61 / 23.3 / 0.0 / -100.5	-38.37	V / 1.50 / 323	-25.37	n/a

Tested by: J. C. Sausen

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Reviewed by: T. K. Swanson

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# RADIATED EMISSIONS



Test Report #: 2208 Run 2                      Test Area: LTS  
 EUT Model #: DGVS-122710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat                      Page: 4 of 6

### List of measurements for run #: 2

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA (dBm) part 22 case radiation qp	DELTA2
910.403 MHz	39.2 Qp	2.61 / 23.3 / 0.0 / -100.5	-35.39	V / 1.70 / 235	-22.39	n/a
74.924 MHz	36.25 Qp	0.71 / 8.2 / 0.0 / -100.5	-55.34	V / 1.50 / 235	-42.34	n/a
710.02 MHz	37.7 Qp	2.3 / 21.3 / 0.0 / -100.5	-39.2	V / 1.50 / 235	-26.2	n/a

Tested by: J. C. Sausen  
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Reviewed by: T. K. Swanson  
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# RADIATED EMISSIONS



Test Report #: 2208 Run 2                      Test Area: LTS  
 EUT Model #: DGVS-122710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat

Page: 5 of 6

## Measurement summary for limit1: part 22 case radiation qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA (dBm) part 22 case radiation qp
910.403 MHz	39.2 Qp	2.61 / 23.3 / 0.0 / -100.5	-35.39	V / 1.70 / 235	-22.39
710.02 MHz	37.7 Qp	2.3 / 21.3 / 0.0 / -100.5	-39.2	V / 1.50 / 235	-26.2
142.004 MHz	41.2 Qp	1.0 / 9.78 / 0.0 / -100.5	-48.52	H / 1.80 / 246	-35.52
74.924 MHz	36.4 Qp	0.71 / 8.2 / 0.0 / -100.5	-55.19	V / 1.50 / 231	-42.19
80.624 MHz	33.55 Qp	0.8 / 7.51 / 0.0 / -100.5	-58.64	H / 1.80 / 246	-45.64
168.506 MHz	31.2 Qp	1.07 / 9.1 / 0.0 / -100.5	-59.13	H / 1.80 / 246	-46.13
1.76 GHz	68.95 Pk	3.72 / 28.21 / 42.26 / -100.5	-41.89	V / 2.10 / 239	-28.89*
1.0 GHz	40.35 Pk	2.74 / 26.4 / 38.2 / -100.5	-69.21	H / 1.10 / 230	-56.21*
1.065 GHz	55.05 Pk	2.83 / 26.44 / 39.29 / -100.5	-55.46	H / 1.20 / 313	-42.46*
1.136 GHz	49.8 Pk	2.93 / 26.48 / 39.9 / -100.5	-61.19	H / 1.30 / 197	-48.19*
1.207 GHz	55.95 Pk	3.01 / 26.52 / 40.28 / -100.5	-55.29	H / 1.10 / 230	-42.29*
1.278 GHz	48.7 Pk	3.1 / 26.57 / 40.56 / -100.5	-62.69	H / 1.50 / 234	-49.69*
1.491 GHz	53.95 Pk	3.42 / 26.69 / 41.53 / -100.5	-57.96	H / 1.10 / 230	-44.96*
1.633 GHz	63.65 Pk	3.55 / 27.47 / 41.92 / -100.5	-47.75	H / 1.50 / 234	-34.75*
1.704 GHz	45.6 Pk	3.62 / 27.88 / 42.1 / -100.5	-65.5	V / 2.10 / 239	-52.5*
1.775 GHz	54.75 Pk	3.74 / 28.3 / 42.31 / -100.5	-56.02	H / 1.30 / 197	-43.02*
1.846 GHz	51.6 Pk	3.83 / 28.71 / 42.54 / -100.5	-58.9	H / 1.30 / 197	-45.9*
2.333 GHz	50.1 Pk	4.23 / 30.33 / 43.62 / -100.5	-59.46	H / 1.10 / 230	-46.46*
2.84 GHz	59.0 Pk	4.6 / 31.38 / 44.12 / -100.5	-49.64	H / 1.30 / 197	-36.64*
2.64 GHz	37.55 Pk	4.44 / 30.98 / 43.7 / -100.5	-71.23	V / 2.10 / 239	-58.23*
3.52 GHz	39.9 Pk	5.33 / 33.05 / 44.35 / -100.5	-66.56	V / 2.10 / 239	-53.56*
8.8 GHz	37.0 Pk	9.25 / 38.86 / 43.31 / -100.5	-58.7	V / 2.10 / 239	-45.7*
1.774 GHz	65.7 Pk	3.74 / 28.29 / 42.31 / -100.5	-45.08	H / 1.40 / 258	-32.08*
3.548 GHz	48.9 Pk	5.38 / 33.12 / 44.38 / -100.5	-57.48	H / 1.40 / 229	-44.48*
8.87 GHz	36.55 Pk	9.26 / 39.08 / 43.34 / -100.5	-58.95	V / 2.80 / 227	-45.95*

Tested by: J. C. Sausen

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Reviewed by: T. K. Swanson

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# RADIATED EMISSIONS



Test Report #: 2208 Run 2                      Test Area: LTS  
 EUT Model #: DGVS-122710SYS                      Date: 5/7/04  
 EUT Serial #: \_\_\_\_\_ EUT Power: 60 Hz / 110 VAC                      Temperature: 23.0 °C  
 Test Method: FCC Part 22                      Air Pressure: 98.0 kPa  
 Customer: ADC Mark Miska                      Rel. Humidity: 35.0 %

EUT Description: Digivance 800 MHz 50 Watt SDRS

Notes: \_\_\_\_\_

Data File Name: 2208convertedtodbm.dat                      Page: 6 of 6

### Measurement summary for limit1: part 22 case radiation qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBm)	POL / HGT / AZ (m)(DEG)	DELTA (dBm) part 22 case radiation qp
1.788 GHz	69.1 Pk	3.76 / 28.37 / 42.35 / -100.5	-41.62	V / 1.40 / 229	-28.62*
2.681 GHz	48.75 Pk	4.47 / 31.06 / 43.79 / -100.5	-60.01	H / 1.20 / 313	-47.01*
3.575 GHz	52.5 Pk	5.43 / 33.18 / 44.41 / -100.5	-53.81	H / 1.20 / 313	-40.81*
8.938 GHz	36.95 Pk	9.27 / 39.3 / 43.38 / -100.5	-58.35	H / 1.20 / 313	-45.35*
910.39 MHz	40.85 Pk	2.61 / 23.3 / 0.0 / -100.5	-33.74	V / 1.50 / 231	-20.74*

Tested by: J. C. Sausen  
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Reviewed by: T. K. Swanson  
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 Signature

**Equipment Under Test (EUT) Test Operation Mode - Emission tests :**

The device under test was operated under the following conditions during emissions testing:

- Standby
- Test program (H - Pattern)
- Test program (color bar)
- Test program (customer specific)
- Practice operation
- Normal Operating Mode
- Max composite out.

**Configuration of the device under test:**

The following peripheral devices and interface cables were connected during the measurement:

- |                                  |              |
|----------------------------------|--------------|
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |
| <input type="checkbox"/> - _____ | Type : _____ |

- unshielded power cable

- unshielded cables

- shielded cables

MPS.No.: \_\_\_\_\_

- customer specific cables

- \_\_\_\_\_

- \_\_\_\_\_

**DEVIATIONS FROM STANDARD:**

None

**GENERAL REMARKS:**

**SUMMARY:**

The requirements according to the technical regulations are

■ - met

□ - **not** met.

The device under test does

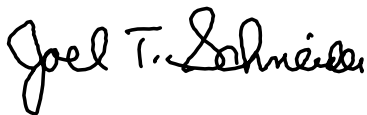
■ - fulfill the general approval requirements mentioned on page 3.

□ - **not** fulfill the general approval requirements mentioned on page 3.

Testing Start Date: 07 May 2004

Testing End Date: 07 May 2004

- TÜV PRODUCT SERVICE INC -



Reviewed By:  
J. T. Schneider



Tested By:  
J. C. Sausen

### Test Equipment List

**ADC Test equipment used :**

	<b>Model Number</b>	<b>Manufacturer</b>	<b>Description</b>	<b>Serial Number</b>	<b>Cal Due</b>
■ -	49-30-33	Aeroflex	Attenuator	N/A	CNR
■ -	HP8563E	HP	Spectrum Analyzer	MC27690	24 May 04
■ -		Rohde & Schwarz	Power Meter	MC21671	March 05
■ -	1520CT	Staco	Variable Auto Transformer	MC/44655	CNR
■ -	79III	Fluke	Multimeter	MC16178	Feb 06
■ -	5347A	HP	Freq. Counter	MC27569	Jan 05
■ -		Tenney Environmental	Temperature Chamber	MC24315	Oct 05

Note: Any equipment used in testing that has a Calibration Not Required (CNR) listing is verified and compensated for with NIST traceable calibrate equipment.

**TUV Test equipment used :**

	<b>TUV ID</b>	<b>Model Number</b>	<b>Manufacturer</b>	<b>Description</b>	<b>Serial Number</b>	<b>Cal Due</b>
■ -	3204	EM-6917B	Electro-Metrics	Biconicalog Periodic	102	10-24-04
■ -	2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	11-19-04
■ -	8052	8566B	Hewlett-Packard	Spectrum Analyzer	2115a00853	10-17-04
■ -	8051	85662A	Hewlett-Packard	Analyzer Display	2112A02220	10-17-04
■	2682	85650A	Hewlett-Packard	Quasi-Peak Adapter	2811A01127	2-23-05
■ -	3962	ZHL-1042J	Mini-Circuits	Preamplifier	D120403-2	Code B
■ -	3957	SL18B4020	Phase One Microwave	Preamplifier 1 – 18 GHz	0001	Code B
■ -	2396	2520	Wavetek	Signal Generator	6271013	6-04-04
■ -	3236	UHAP-10dB	Schwarzbeck	Dipole Antenna 300-1000	164	N/A

Cal Code B = Calibration verification performed internally.

Cal Code Y = Calibration not required when used with other calibrated equipment.

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually.

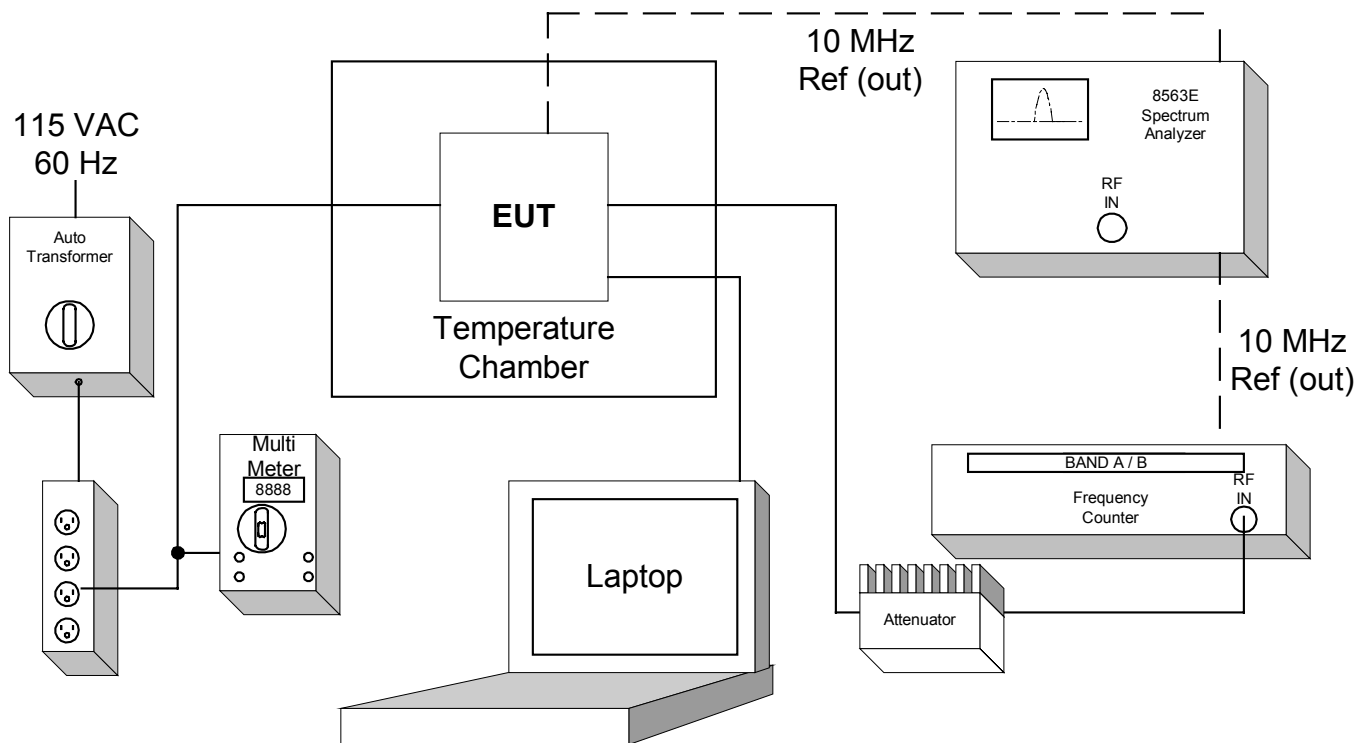
**TEST SETUP PHOTOS FOR EMISSIONS TESTING**



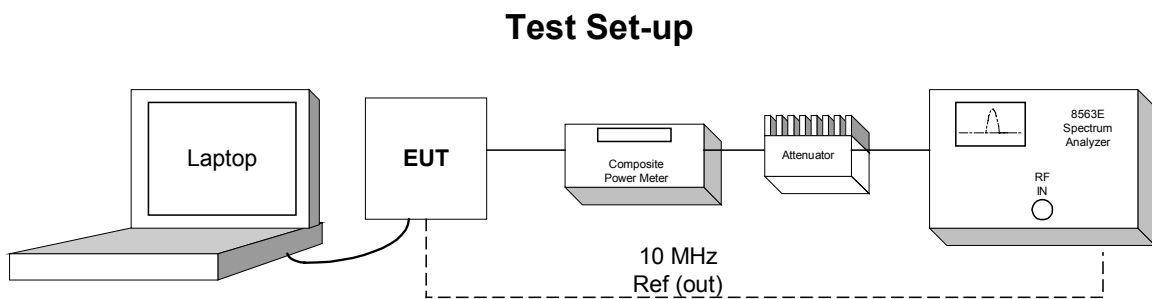
# Frequency Tolerance Test for ADC Inc Digivance 800 MHz 50-Watt SDR System Model Numbers DGVS-112710SYS and DGVS-122710SYS

EUT Server is specified for indoor use only with temperature range of 10° to +35° C, and was tested with its range.  
EUT STM and LPA are specified with a temperature range of -30° to +50° C and were tested with their range.

## Test Set-up



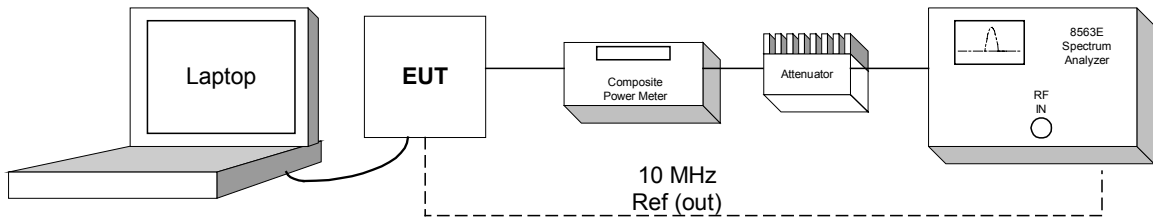
**Effective Isotropic Radiated Power Limit Test for ADC Inc.  
Digivance 800 MHz 50-Watt SDR System  
Model Numbers DGVS-112710SYS and DGVS-122710SYS**



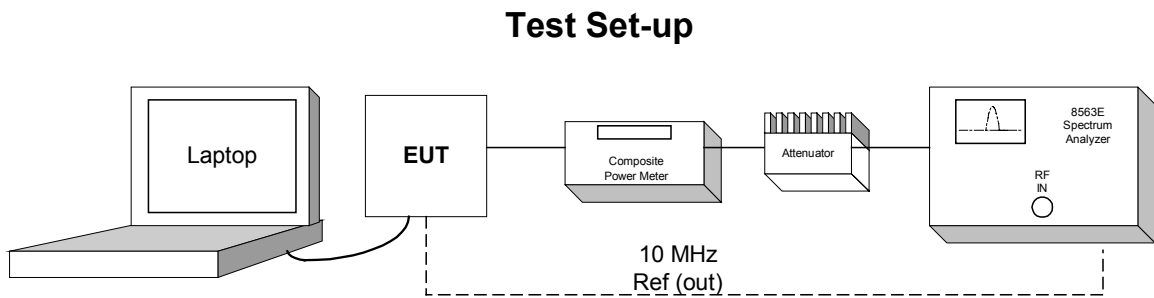


**Inter-Modulation Test for ADC Inc.  
Digivance 800 MHz 50-Watt SDR System  
Model Numbers DGVS-112710SYS and DGVS-122710SYS**

**Test Set-up**

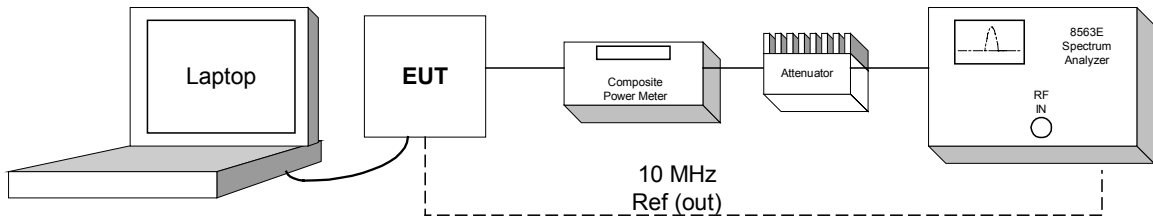


**Conducted Emission Limits Test for ADC Inc.  
Digivance 800 MHz 50-Watt SDR System  
Model Numbers DGVS-112710SYS and DGVS-122710SYS**



**Occupied Bandwidth Modulation Test for ADC Inc.  
Digivance 800 MHz 50-Watt SDR System  
Model Numbers DGVS-112710SYS and DGVS-122710SYS**

**Test Set-up**



Radiated Emissions Test Setup

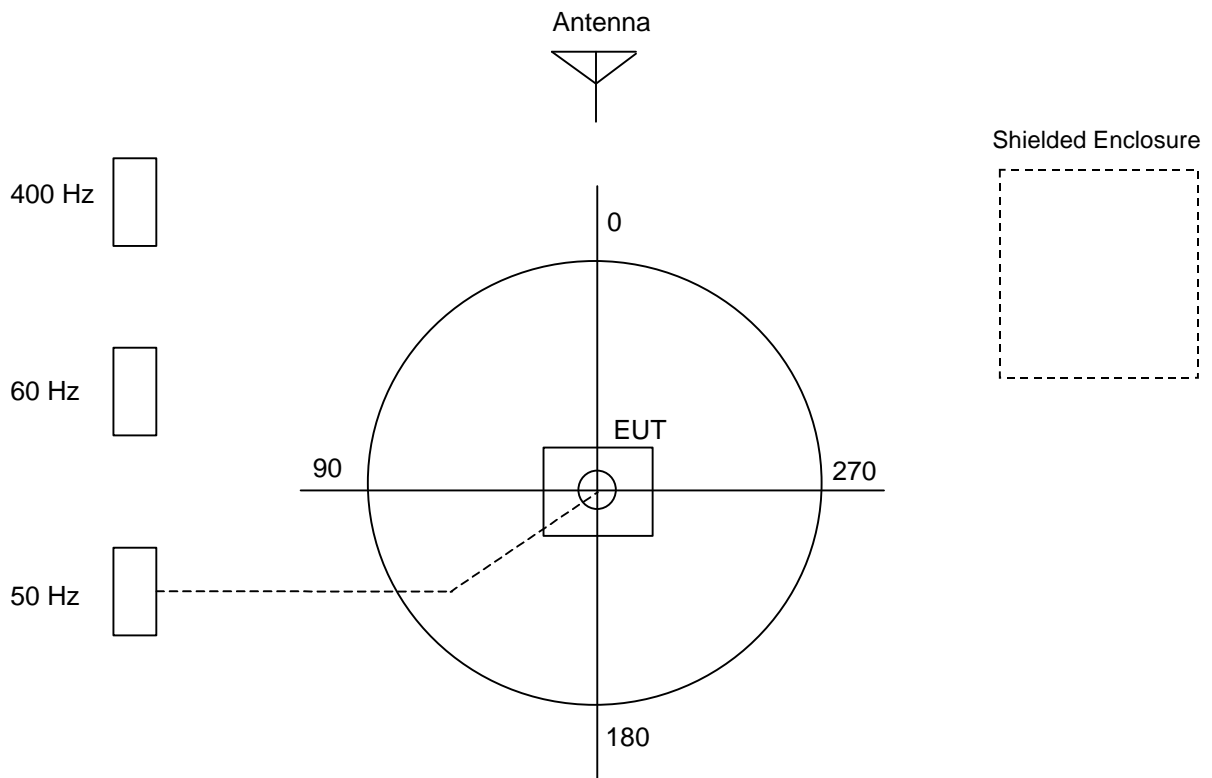


## TEST SETUP FOR EMISSIONS TESTING

WILD RIVER LAB  
Large Test Site

### Notes:

1. Items shown in dotted lines are located on the floor below the test area. It is 5 meters vertically from the ground floor to the test area.
2. 50 Hz, 60 Hz, and 400 Hz are power panels for alternating current.
3. The antenna may be positioned horizontally 3, 10 or 30 meters from the center of the turntable.
4. The circle is a 6.7 meter diameter turntable.
5. A ground plane is in the plane of this sheet.
6. The test sample is shown in the azimuthal position representing zero degrees.



**Appendix A**

Product Information Form



## EMC Test Plan and Constructional Data Form



PLEASE COMPLETE THIS DOCUMENT IN FULL, ENTERING N/A IF THE FIELD IS NOT APPLICABLE.

**Applicant -- NOTE: This information will be input into your test report as shown below.  
Press the F1 key at any time to get HELP for the current field selected.**

Company: ADC Inc.

Address: P.O. Box 1101  
Minneapolis, MN 55440-1101

Contact: Mark F. Miska Position: Compliance Engineer

Phone: 952-403-8340 Fax: 952-403-8560

E-mail Address: mark.miska@adc.com

**General Equipment Description -- NOTE: This information will be input into your test report as shown below.**

EUT Description Transports RF between a remote antenna and Wide Band Digital Radio base station.

EUT Name Digivance Wide Band Digital Radio 800 MHz 50-Watt System

Model No.: DGVS-112710SYS and DGVS-122710SYS Serial No.: None

Product Options: Receive Diversity

Configurations to be tested: 800 MHz System: A and B Band Version with Diversity option

**Test Objective**

- EMC Directive 89/336/EEC (EMC)  FCC: Class  A  B Part 22  
Std:  VCCI: Class  A  B
- Machinery Directive 89/392/EEC (EMC)  BCIQ: Class  A  B  
Std:  Canada: Class  A  B
- Medical Device Directive 93/42/EEC (EMC)  Australia: Class  A  B  
Std:  Other: FCC Part 15 Class B
- Vehicle Directive 72/245/EEC (EMC)  
Std: \_\_\_\_\_
- FDA Reviewers Guidance for Premarket Notification Submissions (EMC)

## EMC Test Plan and Constructional Data Form

### TÜV Product Service Certification Requested

- Attestation of Conformity (AoC)
  International EMC Mark (IEM)  
 Certificate of Conformity (CoC)
  Compliance Document  
 Protection Class (N/A for vehicles)
  Class I
  Class II
  Class III  
 (Press **F1** when field is selected to show additional information on Protection Class.)

### Attendance

Test will be:  Attended by the customer  Unattended by the customer

### Failure - Complete this section if testing will not be attended by the customer.

If a failure occurs, TÜV Product Service should:

- Call contact listed above, if not available then stop testing. (After hrs phone): \_\_\_\_\_  
 Continue testing to complete test series.  
 Continue testing to define corrective action.  
 Stop testing.

### EUT Specifications and Requirements

Length: 20" Width: 17.11" Height: 3.5" Weight: 48 LBS

### Power Requirements

*Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)*

Voltage: 100-120/200-240 VAC (If battery powered, make sure battery life is sufficient to complete testing.)

# of Phases: 1

Current (Amps/phase(max)): 6/4 Current (Amps/phase(nominal)): 4

Other \_\_\_\_\_

### Other Special Requirements

none

### Typical Installation and/or Operating Environment

(ie. Hospital, Small Business, Industrial/Factory, etc.)

Server/PCIx card indoor only with STM and LPA indoor or outdoor. System is typically employed as a GSM base station.



EMC Test Plan and Constructional Data Form



<b>EUT Power Cable</b>			
<input type="checkbox"/> Permanent	OR	<input checked="" type="checkbox"/> Removable	Length (in meters): <u>1</u>
<input type="checkbox"/> Shielded	OR	<input checked="" type="checkbox"/> Unshielded	
<input type="checkbox"/> Not Applicable			

# EMC Test Plan and Constructional Data Form

EUT Interface Ports and Cables												
Interface			Shielding									
Type	Analog	Digital	Qty	Yes	No	Type	Termination	Connector Type	Port Termination	Length (in meters)	Removable	Permanent
<b>EXAMPLE:</b>												
RS232	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Foil over braid	Coaxial	Metallized 9-pin D-Sub	Characteristic Impedance	6	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RF "N" type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Braid	Coaxial	N	50 Ohms	>3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RF "SMR" type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Braid	Coaxial	SMA	50 Ohms	>3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Alarm	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not Specified	N/A	4 Pin Standoff		>3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Fiber	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	N/A	SC	N/A	>3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9 Pin Din	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Not Specified	AC Coupled	Din		>3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
AC power	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A				>3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Battery Connection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A	N/A	2 Pin Standoff		1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
STM to Amp Interconnect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Varied		Terminal		1	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>



# EMC Test Plan and Constructional Data Form

**EUT Software.**

Revision Level: Version 0.00.00.12

Description: Digivance Element Management System (DEMS). System Management and Interface Matching Software.

**EUT Operating Modes to be Tested** -- list the operating modes to be used during test. It is recommended the equipment be tested while operating in a typical operation mode. FCC testing of personal computers and/or peripherals requires that a simple program generate a complete line of upper case H's. Provide a general description of all software, firmware, and PLD algorithms used in the equipment. List all code modules as described above, with the revision level used during testing. Consult with your TÜV Product Service Representative if additional assistance is required.

1. Max composite out
  
- 2.
  
- 3.

**EUT System Components** -- List and describe all components which are part of the EUT. For FCC testing a minimum configuration is required. (ie. Mouse, Printer, Monitor, External Disk Drive, Motherboard, etc.)

Description	Model #	Serial #	FCC ID #
Host Unit	DGVS-800010HU	None	
STM A Band	DGVL-112010STM	None	
STM B Band	DGVL-122010STM	None	
LPA	DGVL-102000LPA	None	
		None	
		None	
Digivance Wide Band Digital Radio 800 MHz 50-Watt System Models DGVS-112710SYS and DGVS- 122710SYS consist of the HU, STM, and LPA.		None	



## EMC Test Plan and Constructional Data Form

<b>Support Equipment</b> -- List and describe all support equipment which is not part of the EUT. (i.e. peripherals, simulators, etc)			
<i>Description</i>	<i>Model #</i>	<i>Serial #</i>	<i>FCC ID #</i>
Server	HP Proliant DL380	D402LJC1H278	
Monitor	N/A		
Keyboard	N/A		

<b>Oscillator Frequencies</b>			
<i>Frequency</i>	<i>Derived Frequency</i>	<i>Component # / Location</i>	<i>Description of Use</i>

<b>Power Supply</b>			
<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Type</i>
			<input type="checkbox"/> Switched-mode: (Frequency) _____ <input type="checkbox"/> Linear <input type="checkbox"/> Other: _____
			<input type="checkbox"/> Switched-mode: (Frequency) _____ <input type="checkbox"/> Linear <input type="checkbox"/> Other: _____

<b>Power Line Filters</b>		
<i>Manufacturer</i>	<i>Model #</i>	<i>Location in EUT</i>
None		



### EMC Test Plan and Constructional Data Form

**Critical EMI Components (Capacitors, ferrites, etc.)**

Description	Manufacturer	Part # or Value	Qty	Component # / Location
None				

**EMC Critical Detail -- Describe other EMC Design details used to reduce high frequency noise.**

None

(PLEASE INSERT "ELECTRONIC SIGNATURE" BELOW IF POSSIBLE)

**Authorization Signatures**

Mark R. Moore  
Customer authorization to perform tests according to this test plan.

7-7-04  
Date

\_\_\_\_\_  
Test Plan/CDF Prepared By (please print)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Reviewed by TUV Product Service Associate

\_\_\_\_\_  
Date