EXHIBIT D – REPORT OF MEASUREMENTS

- **KTL Dallas, Inc. Technical Report**
  (Test Report # 980221)

FCC PART 15 SUBPART B-UNINTENTIONAL RADIATORS CLASS B DIGITAL DEVICE / SUBPART C - INTENTIONAL RADIATORS

MEASUREMENT / TECHNICAL REPORT
TEST REPORT #: 980221.REP
Number of pages in Test Report: 40

on the

Model 01-STR916-002

FCC ID: N49ST02

for

The NewID Mgt, Inc.
400 Chisholm Place Suite 114
Plano, Texas 75075

August 15, 1998

NVLAP

NVLAP LAB CODE: 100426-0

Prepared by:

KTL DALLAS, INC.
802 N. KEALY
LEWISVILLE, TEXAS 75057-3136
(972) 436-9600 telephone
(972) 436-2667 fax

Prepared by:

Ann J. Melloh
Documentation Specialist

Approved by:

Wes Atchison
Senior EMC Engineer

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CORPORATE POLICY

KTL Dallas, Inc. test reports are submitted for exclusive use of the clients to whom they are addressed. The test report significance is subject to the adequacy of the samples in representing production models and representative of the samples and the comprehensiveness of the tests or surveys performed.

No quotations from KTL Dallas, Inc. reports or use of KTL Dallas, Inc.'s name are permitted except as expressly authorized by KTL Dallas, Inc. in writing.

QUALITY SYSTEM

The quality system in place conforms to IEC Guide 25 and EN 45001. The EMC Laboratory has been audited to the EN 45001 standard by TÜV Rheinland, a European Union Competent Body in Germany, as well as NEMKO, a Certification Body in Norway. The EMC Laboratory has been audited using the ISO 9000 Quality System by Interference Technology International, a European Union Competent Body in the United Kingdom. KTL Dallas, Inc. has also been assessed against the requirements of ISO Guide 25, EN 45001, and ISO 9002 by Acemark Europe, Ltd.

KTL Dallas, Inc. data are accepted by the following European EMC Competent Bodies: BSI Testing; Chase EMC, Ltd.; Dedicated Micros, Ltd.; EURO EMC SERVICE (EES); Gastec NV; GEC Marconi Avionics; Hursley EMC Services; KTL; LUCAS VARITY; Motor Industry Research Association (MIRA); SGS EMC, Ltd.; TRL EMC, Ltd.; TRIPLE C; TELEFICATION BV; and YORK EMC SERVICES.

KTL Dallas, Inc. is accredited by the United States of America National Institute of Standards and Technology, as well as National Voluntary Laboratory Accreditation Program (NVLAP) for selected test methods or services. This report must not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. government.

KTL Dallas, Inc. is a recognized laboratory with VCCI (Japan), BCIQ (Taiwan), the Federal Communications Commission, the Ministry of Commerce (New Zealand), and is also an Underwriters Laboratory Certificated Agency Administrative Agent.

Appendix D contains a list of the certificates and recognitions issued to KTL Dallas, Inc. for compliance testing services.

** FCC VERIFICATION OF COMPLIANCE **

47 Code of Federal Regulations (CFR), Part 2, Section 2.953 and Section 2.955 places certain responsibilities upon the manufacturer and/or importer of Verified equipment:

Section 2.953 (Responsibility of Manufacturer/Importer) places the following burden upon the manufacturer/importer:

A. Parties must warrant that the equipment now being produced by the company is representative of the original tested equipment.

B. An importer of Verified equipment is permitted to market based on a statement of compliance from the manufacturer. The manufacturer must be able to produce a test record in English on demand by the Federal Communications Commission.

C. Should the equipment undergo modification or redesign, the burden of proof of continuing compliance is a responsibility.

Section 2.955 (Retention of Records) places the following requirements on the manufacturer or importer of Verified equipment:

A. Retention of original design drawings/specifications to include modifications.

B. A record of the procedures used for production inspection to ensure compliance with 2.953.

C. A record of the emissions measurements, i.e. test report.

D. For equipment subject to Part 15, this record indicates that the equipment was Verified pursuant to transition provisions, 15.37.

E. All records must be retained for two years after the equipment has ceased to be manufactured.

* *

The signature block below is provided as a means of warranting compliance by the responsible party at your company and also serves to validate this report in compliance with 47CFR, 2.953 and 2.955:

Reviewed by: _____
(Signature)

Name: _____

A. INTRODUCTION

STANDARD REFERENCES

Standards applied to the EUT:

1) ANSI C63.4: 1992, Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz.

2) Code of Federal Regulations (CFR) Title 47, Part 15, Radio frequency devices, Subpart B Unintentional Radiators and Subpart C Intentional Radiators (October 1, 1996).

Standards utilized for measurement methods and/or equipment:

3) CISPR Publication 16, Second Edition, (CISPR specification for radio interference measuring apparatus and measurement methods) IEC 1987.

A. INTRODUCTION (Continued)

The test facility, International Compliance Corporation, was legally changed to KTL Dallas, Inc. KTL Dallas, Inc. is in the process of updating forms. Some forms in this report reference the former company, International Compliance Corporation.

ELECTROMAGNETIC EMISSIONS

- **CONDUCTED EMISSIONS**

The conducted electromagnetic emissions amplitudes were not measured because the Equipment-Under-Test (EUT) is dc powered.

- **ELECTRIC-FIELD RADIATED EMISSIONS**

The electric-field radiated electromagnetic emissions amplitudes were measured from The NewID MGT, Inc. Model 01-STR916-002 with receive mode configuration at the KTL Dallas, Inc. Open Area Test Site on July 30, 1998. **The test results confirm that the amplitudes of the electric-field radiated emissions from The NewID MGT, Inc. Model 01-STR916-002 with receive mode configuration tested in conjunction with other equipment (identified later in this report) are within the FCC Part 15 Subpart B Class B Limits.**

The electric-field radiated electromagnetic emissions amplitudes were also measured from The NewID MGT, Inc. Model 01-STR916-002 with transmit mode configuration at the KTL Dallas, Inc. Open Area Test Site on July 31, 1998. **The test results confirm that the amplitudes of the electric-field radiated emissions from The NewID MGT, Inc. Model 01-STR916-002 with transmit mode configuration tested in conjunction with other equipment (identified later in this report) are within the FCC Part 15 Subpart B Class B Limits and FCC Part 15 Subpart C Limits.**

- **MICROWAVE RADIATED EMISSIONS**

The microwave radiated electromagnetic emissions amplitudes were measured from The NewID MGT, Inc. Model 01-STR916-002 with receive mode and transmit mode at the KTL Dallas, Inc. Open Area Test Site on July 30th and 31rst of 1998. **The test results confirm that the amplitudes of the microwave radiated emissions from The NewID MGT, Inc. Model 01-STR916-002 tested in conjunction with other equipment (identified later in this report) are within the FCC Part 15 Subpart B Class B Limits.**

FCC Part 15 Subpart B		
Conducted Emissions, Class B	15.107 (a) (450 kHz - 30 MHz)	N/A
Radiated Emissions, Class B	15.109 (a) (30 MHz - 1000 MHz)	Pass
Microwave Radiated Emission, Class B	15.109 (a)/ 15.33(b)(1) (1 GHz - 5 GHz)	Pass
FCC Part 15 Subpart C		
Radiated Emissions, Class B	15.249 (a), (b), (c) (30 MHz - 10 GHz)	Pass

"N/A" = Not Applicable

B. EQUIPMENT-UNDER-TEST

KTL Dallas, Inc. received the equipment-under-test (EUT) on July, 30 1998, from The NewID MGT, Inc. The results in this report relate only to the items listed below.

The EUT is The NewID MGT, Inc. Transceiver Model 01-STR916-002, S/N 202, P/N 01-STR916-002. **Refer to Figure B-1 for EUT photographs.**

The Model 01-STR916-002 included the following equipment and cables:

None.

MODES OF OPERATION

The EUT was operating in a receive mode and a transmit mode.

CHANGES TO THE EUT AFTER RECEIPT OF SAMPLE

No additional measures were taken over those already incorporated in the product.

DEVIATION CRITERIA

No deviation was required.

C. TEST PROCEDURE

• ELECTROMAGNETIC EMISSIONS

The test procedures used for determining FCC Part 15 Subpart B-Unintentional Radiators Class B and FCC Part 15 Subpart C Intentional Radiators compliance were in accordance with FCC Rules and Regulations, ANSI C63.4-1992 Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

All measurements were performed using the CISPR quasi-peak, peak or average detector functions of the receiver or spectrum analyzer. The bandwidths (6-dB) were as follows for the different detector functions and frequency ranges (deviations if necessary would be noted on the individual data sheets):

FREQUENCY RANGE	QUASI-PEAK	PEAK	AVERAGE
10 kHz - 150kHz	200 Hz	200 Hz	200 Hz
150 kHz - 30 kHz	9 kHz	10 kHz	10 kHz
30 MHz - 1000 MHz	120 kHz	100 kHz	100 kHz
> 1000 MHz	N/A	1 MHz	1 MHz

Conducted Emissions Measurements:

The conducted emissions amplitudes were not measured because the EUT is dc powered.

Electric Field Radiated Emissions Measurements:

The electric-field radiated electromagnetic emissions were measured between 30 MHz and 1 GHz for the receive mode configuration and the transmit mode configuration at the KTL Dallas, Inc. Open Area Test Site at a 3 meter distance. The antennas were vertically and then horizontally polarized. The antenna height was varied between 1 and 4 meters. The electric-field radiated-emissions amplitudes were measured at various azimuthal orientations in order to maximize amplitudes. Cables were oriented to maximize the field strength amplitudes.

Microwave Radiated Emissions Measurements:

The microwave radiated electromagnetic emissions were measured between 1 GHz and 5 GHz for the received mode configuration and 1 GHz and 10 GHz for the transmit mode configuration at the KTL Dallas, Inc. Open Area Test Site at a 3 meter distance. The antennas were vertically and then horizontally polarized. The antenna height was set at 1 meter. The microwave radiated-emissions amplitudes were measured at various azimuthal orientations in order to maximize amplitudes. Cables were oriented to maximize the field strength amplitudes.

Unless otherwise specified, broadband antennas were used. Standard broadband antennas used were selected from the following: Biconical 30 MHz - 300 MHz, Log Periodic 0.3 GHz - 1 GHz and Horn 1 GHz - 40 GHz. For measurements (up to 1 GHz) that were close to the limit, a tuned dipole antenna may have been used.

D. TEST RESULTS

FCC Part 15 Subpart B		
Conducted Emissions, Class B	15.108 (a) (450 kHz - 30 MHz)	N/A
Radiated Emissions, Class B	15.109 (a) (30 MHz - 1000 MHz)	Pass
Microwave Radiated Emission, Class B	15.109 (a)/ 15.33(b)(1) (1 GHz - 5 GHz)	Pass
FCC Part 15 Subpart C		
Radiated Emissions, Class B	15.249 (a), (b), (c) (30 MHz -10 GHz)	Pass

"N/A" = Not Applicable

• ELECTROMAGNETIC EMISSIONS

The worst-case data are tabulated in Tables D-I and D-II.

The test data are contained in Appendix B of this report. The electric field radiated emissions data sheets are labeled Test # RE-1 dated July 30, 1998, Tests # RE-2 and # RE 3 dated July 31, 1998. The microwave radiated emissions data sheet is labeled Test # MW-1 dated July 30 1998 and Test # MW-2 dated, July 31, 1998.

Figures D-1 contains photographs of the radiated emissions test set-ups.
Figure D-2 contains photographs of the microwave radiated emissions test set-up.

• TEST RESULTS SUMMARY

The test results confirm that the radiated emissions and microwave radiated emissions amplitudes for the receive mode configuration and the transmit mode configuration are within the FCC Part 15 Subpart B Class B Limits. The test results also confirm that the radiated emissions amplitudes for the transmit mode configuration are within the FCC Part 15 Subpart C Limits.

D. TEST RESULTS (Continued)

• SAMPLE CALCULATIONS

If the meter readings of Quasi-Peak to Average ratio is greater than 6 dB, then the emission is considered to be broad band and the Quasi-Peak reading is reduced by 13 dB for comparison to the Average limit.

e.g., Quasi-Peak reading = 36 dBμV
Broadband Correction Factor = 13 dBμV
Corrected reading = 36-13 = 23 dBμV

Without such a correction, a sample calculation for conducted emissions is included here to account for probe or LISN losses of an external attenuator and cable, as well as the gain of an external amplifier (if used).

RF Radiated Emissions

Test #: RE-1	Frequency:	30.000 MHz	Polarization:	Vertical
Meter Reading (dBμV)	Antenna Factor (dB)	Path Loss (dB)	Amplifier Gain (dB)	Field Strength* (dBμV/m)
31.3	10.6	2.8	27.8	16.9

The calculations proceed as follows: Meter Reading (dBμV) + Antenna Factor (dB) + Path Loss (dB) - Amplifier Gain (dB) = Field Strength (dBμV/m).

When the emission level is less than 6 dB above the ambient noise floor, the antenna is moved closer to the EUT. A 3-meter measurement level is compared with a 10-meter limit by extrapolating the limit to a 3-meter distance. One adds a factor of 10.5 dB to the limit, which is derived from:

Correction Factor (dB) = 20 log (10 m/3 m) = 10.5 dB

e.g., Limit @ 10 m = 30 dBμV/m @ 10 m
Limit @ 3 m = 40.5 dBμV/m @ 3 m

Similarly, a 10-meter limit is extrapolated to a specified 30-meter limit by use of a correction factor of 20 log (10 m/30 m) = -9.5 dB.

*Note. Calculations may not agree exactly with data due to rounding of numbers.

Microwave Radiated Emissions

Test #: MW-1	Frequency:	1.000 GHz	Polarization:	Vertical
Meter Reading (dBμV)	Antenna Factor (dBμV to dBμV/m)	Path Loss (dB)	Amplifier Gain (dB)	Field Strength* (dBμV/m)
30.0	23.2	2.6	23.7	32.1

The calculations proceed as for RF Radiated Emissions.

*Note. Calculations may not agree exactly with data due to rounding of numbers.

TABLE D-I. WORST-CASE ELECTRIC FIELD STRENGTH DATA

Test # RE-1 (Configuration: Receive Mode), 3Vdc

Frequency (MHz)	Amplitude Peak (dBµV/m)	FCC 8 Q.P. Limit (dBµV/m)	Margin* (dB) (Limit-Amplitude)	Polarization Vertical/ Horizontal	Comments
200.000	25.6	43.5	17.9	Vertical	1,2
600.000	34.7	46.0	11.3	Vertical	1,2
900.000	39.2	46.0	6.8	Vertical	1,2
200.000	30.1	43.5	13.4	Horizontal	1,2
600.000	34.9	46.0	11.1	Horizontal	1,2
900.000	39.2	46.0	6.8	Horizontal	1,2

Test # RE-3 (Configuration: Transmit Mode), 3Vdc

Frequency (MHz)	Amplitude Peak (dBµV/m)	FCC 15.249 (a) Limit (dBµV/m)	Margin* (dB) (Limit-Amplitude)	Polarization Vertical/ Horizontal	Comments
916.500	85.8	94.0	8.2	Vertical	1,3
916.500	80.9	94.0	13.1	Vertical	1,3

Test # RE-2 (Configuration: Transmit Mode), 3 Vdc

Frequency (MHz)	Amplitude Peak (dBµV/m)	FCC 15.249 (a) Limit (dBµV/m)	Margin* (dB) (Limit-Amplitude)	Polarization Vertical/ Horizontal	Comments
200.000	26.1	43.5	17.4	Vertical	1,2
600.000	34.5	46.0	11.5	Vertical	1,2
1000.000	42.7	54.0	11.3	Vertical	1,2
200.000	27.2	43.5	16.3	Horizontal	1,2
600.000	34.7	46.0	11.3	Horizontal	1,2
1000.000	42.6	54.0	11.4	Horizontal	1,2

D. TEST RESULTS (Continued)

Comments:

1) Data contained in Appendix B - Tests # RE-1 (July 30, 1998), and # RE-2 and # RE-3 (July 31, 1998).

2) Noise floor reading.

3) Fundamental transmit frequency.

Notes:

Calculations may not agree exactly with data due to rounding of numbers.

All other radiated emissions amplitudes for the receive mode configuration and the transmit mode configuration were at least 10 dB within the FCC Part 15 Subpart B Class B Limits and the FCC Part 15 Subpart C Limits. Emissions were scanned from 30 MHz to 1 GHz with antennas in both the vertical and horizontal orientation. The specified radiated emissions antenna reference distance was ten meters; the limit was extrapolated to three meters using 20 dB per decade of distance (1/r interpolation). Testing of the EUT was conducted at three meters. No additional signal was detected.

Amplitudes were measured using the peak detector. Reference detector specified in the limit is the CISPR quasi-peak detector.

TABLE D-II. WORST-CASE MICROWAVE FIELD STRENGTH DATA

Test # MW 1 Microwave Radiated Emissions (Configuration: Receive Mode), 1 GHz to 5 GHz

Frequency (GHz)	Amplitude Average (dBµV/m)	FCC B Limit (dBµV/m)	Margin* (dB) (Limit-Amplitude)	Polarization Vertical/ Horizontal	Comments
1.000	32.1	54.0	21.9	Vertical	1,2
2.500	44.0	54.0	10.0	Vertical	1,2
5.000	46.2	54.0	7.8	Vertical	1,2
1.000	32.1	54.0	21.9	Horizontal	1,2
2.500	41.5	54.0	12.5	Horizontal	1,2
5.000	46.4	54.0	7.6	Horizontal	1,2

Test # MW-2 Microwave Radiated Emissions (Configuration: Transmit Mode), 1 GHz to 10 GHz

Frequency (GHz)	Amplitude Average (dBµV/m)	FCC 15.249 (a) and (e) Limit (dBµV/m)	Margin* (dB) (Limit-Amplitude)	Polarization Vertical/ Horizontal	Comments
1.000	29.8	54.0	24.2	Vertical	1,2
5.000	46.6	54.0	7.4	Vertical	1,2
10.000	41.5	54.0	12.5	Vertical	1,2
1.000	30.2	54.0	23.8	Horizontal	1,2
5.000	46.4	54.0	7.6	Horizontal	1,2
10.000	41.8	54.0	12.2	Horizontal	1,2

Comments:

1. Data contained in Appendix B - Test # MW-1 (July 30, 1998) and Test # MW-2 (July 31, 1998).

2. Noise floor reading.

Notes:

Calculations may not agree exactly with data due to rounding of numbers.

All other radiated emissions amplitudes were at least 10 dB within the FCC Part 15 Subpart B Class B Limits. Emissions were scanned from 1 GHz to 5 GHz for the receive mode configuration and 1 GHz to 10 GHz for the transmit mode configuration with antennas in both the vertical and horizontal orientation. The specified radiated emissions antenna reference distance was 3 meters. Testing of the EUT was conducted at 3 meters. No additional signal was detected.

Amplitudes were measured using the average detector. Reference detector specified in the limit is the average detector.

E. MEASUREMENT FACILITY AND INSTRUMENTATION

A report describing the KTL Dallas, Inc. measurement facility is on file with the Federal Communications Commission in Columbia, Maryland. The laboratory has been audited by two Competent Bodies in the European Union, TÜV Rheinland and Interference Technology International, Ltd. The laboratory has also been audited by NEMKO, a Certification Body in Norway, and the U.S. National Institute of Standards and Technology (NIST); the National Voluntary Laboratory Accreditation Program (NVLAP) has also audited the laboratory for selected test methods or services. These audits and certifications were performed in accordance with EN 45001, ISO/IEC Guide 25: 1990, ISO/IEC Guide 58: 1993 and ISO 9002: 1994.

The instrumentation used conforms to ANSI C63.4 (1992), ANSI C63.2 (1987), CISPR, and FCC requirements for detector function and bandwidth. The antennas used are linearly polarized. Table E-I identifies the instrumentation utilized for the test. Calibration of measurement instrumentation is performed annually. Calibrations are traceable to NIST (formerly called NBS) to ensure the instrumentation accuracy.

Multiple ***open area test sites*** are capable of being used for 3-, 10-, and 30-meter measurement distances. The ground plane is composed of overlapping sheets of galvanized hardware cloth. The overlap distance is at least 10 cm. The overall ground plane size varies by field site. The ac power for the EUT is buried.

Multiple ***turntables*** allow for the equipment-under-test (EUT) to be rotated 360 azimuthally. For floor-standing EUT, the EUT to be tested is placed directly on a metal top turntable. Table-top EUT is placed on a test table located 80 cm above the ground plane. The unsunken turntables are composed primarily of wood and PVC. The only metal parts are the pivot mechanism/pedestal which is 15 cm above the ground plane and required bolts and nuts that are no longer than 4 cm.

The ***antenna mast*** allows for the antennas to be raised and lowered continuously from 1 to 4 meters in height above the ground plane. The mast is composed primarily of wood and plastic. All metal hardware is less than 10 cm in length and positioned to be as far from the antenna as possible.

The ***tripod*** is of wooden construction and is used to support the antennas during preliminary radiated-emissions measurements.

The ***instrumentation support stand*** is of wood construction and is located outside of the minimum reflection-free area of the open-field measurement site.

The ***Semi-Anechoic Chamber #1*** is a Rayproof Shielded Enclosure assembled professionally by Shielding Resources Group. The dimensions of the enclosure are 8.5m X 5.5m X 6.1m. The three-phase ac power and neutral, 60 Hz, are filtered using Keene Corporation 225 ampere ac power line filters. The power line filters have 100 dB attenuation over most of the spectrum. The three-phase ac power and neutral, 50 Hz, are filtered using Universal Shielding Corporation 100 ampere ac power line filters with similar attenuation. Access to the room is through a double-wide door (6' wide by 7' tall). The room is lined on all sides and the ceiling with 3' anechoic cones and ferrite tile (in selected locations). The floor may be made anechoic by the use of removable ferrite tile squares that cover a 10' by 10' area between the transmit antenna and the EUT. The height of the enclosure permits a full 4-meter antenna scan height. Site-attenuation measurements and uniform-field measurements have been performed inside the room.

E. MEASUREMENT FACILITY AND INSTRUMENTATION (Continued)

The ***Shielded Enclosure #1 and #2*** consist of an ARK Electronics Corp. Plyshield Shielded Enclosure. The enclosure is divided into two rooms: ***#1*** is 2.5 m x 3.0 m x 3.0 m and ***#2*** is 6.1 m x 3.0 m x 3.0 m. The dimensions of the enclosure are (8.6 m x 3.0 m x 3.0 m). The three-phase ac power and neutral for the larger room are filtered using Corcom 100 ampere ac power line filters. The power for the smaller room is filtered using ARK 30 ampere power filters. The power line filters have 100 dB of attenuation between 14 kHz and 10 GHz.

The ***shielded room conducted emissions test setup*** is located inside the 6.1 m x 3.0 m x 3.0 m room of the shielded enclosure. The ac power is filtered using Corcom 100 ampere ac power line filters. The power line filters have 100 dB of attenuation between 14 kHz and 10 GHz. The EUT is supported on a wooden table that is located at the side of the enclosure. The table is 80-cm high. The instrumentation is located inside the enclosure during conducted-emissions measurements.

The ***laboratory conducted emissions test setups*** are located in each of the test laboratories with horizontal and vertical conducting planes each measuring 2.4 by 2.4 meters. The horizontal and vertical planes overlap two inches and are bonded together by screws placed on one foot centers. The EUT is supported on a portable wooden/plastic table that is 80 cm in height with the back edge located 40 cm from the vertical conducting plane.

The ***Semi-Anechoic Chamber #2*** is a Keene Corp. Plyshield Shielded Enclosure. The dimensions of the shielded enclosure are 8.7 meters long by 4.9 meters wide by 3.7 meters high. Access is provided through a double leaf door of 1.8 meters wide by 2.3 meters height and by a single leaf door of 0.9 meters wide by 2.3 meters height. The three-phase 60 Hz ac power for the enclosure is filtered using Universal Shielding 100 ampere ac power line filters. The single-phase 50 Hz power is filtered using Keene 30 ampere ac power line filters. The power line filters have 100 dB of attenuation between 14 kHz and 10 GHz. The side walls and ceiling of the enclosure are covered with anechoic material.

TABLE E-1 TEST EQUIPMENT

The listing below indicates the test equipment utilized for the test (s). Calibration interval on all items is typically 12 months from the calibration date shown.

KTL (ICC). ID	Nomenclature	Manufacturer Model Number	Serial Number	Calibration Date
4C	Cable			6/24/98
CF00	Storm Cable (7.7 meters)			04/28/98
CF03	Flex Cable (0.3 meter N)			04/28/98
202	Log-Periodic Antenna (200-1000 MHz)	EMCO 3146	1349	01/24/98
447	Limiter	Fischer FCC-450-1.25-N	447	10/17/97
494	Horn Antenna	A.H. Systems SAS-200/571	162	04/29/98
665	Antenna, Biconical	EMCO 3104	3243	01/17/98
697	Spectrum Analyzer	Hewlett Packard 8563E	3551A04428	08/01/97
946	27dB Gaing Preamp	ICC 27dB LNA	946	04/09/98
		SITE C O.A.T.S. (OPEN AREA TEST SITE) 30 Meter Site		
	Turntable Flush Mounted, Metal Covered, 12 Foot	A.H. Systems (Automated)		CNR
	Antenna Mast, 5 Foot	ICC (Automated)		CNR

LEGEND:
CNR = CALIBRATION NOT REQUIRED
N/A = NOT APPLICABLE
CBU = CALIBRATED BEFORE USE

APPENDIX A - DATA REPORT

International Compliance Corporation
"Your Certification Solution" sm

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

Data Report

Workorder # 180260 Date 07/31/98

Client must complete box 1 and sign
Please provide information as it should be presented in report

Equipment Under Test (EUT) Box 1

Model Number/Name (This form will appear in formal test report)
Please print upper/lower case, space, dashes, slashes, hyphens, etc., in the spaces provided

0	1	-	S	T	R	9	1	6	-	0	0	2														

Serial Number 202 Part Number 01-STR916-002

Clock, Oscillator, Highest Frequencies Utilized: (If >108 MHz additional test may be required)
~~3.56 MHz~~ 4 MHz

EUT Test Configurations: Fully Operational

Video Mode(s): NA

EUT mode of Operation: Receive Mode, Transmit Mode

I (Client Representative) David Bolt understand all information including the Model number/name above will appear on the formal test report as indicated and may effect test duration.

Representative: David H. Bolt
Company: The Newid Company
Address: 400 Chisholm Place
Suite 114
Plano, Texas 75075

Telephone: 972-423-3313
Alternate:
Fax: 972-423-5719
After hours:

If you will not witness testing, please indicate after hours or pager number.

To be completed by ICC Box 2

Worst-case Mode/Configuration: Receive Mode, Transmit Mode

International Compliance Corporation
"Your Certification Solution" sm

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

HARDWARE

Client: New ID

W.O#: 180260

EUT: 01-STR916-002

S/N: 202

Date: 7/31/98

Place "*" next to EUT and any item that is part of the EUT.

Please complete every column using N/A or unknown if needed.

Generic Description	Manufacturer	Model #	Serial #	Part #	FCC ID Status **
Transceiver	New ID	01-STR916-002	202	01-STR916-002	None

DataWorkOrders\MasterTestData\Data\Hardware
REV091797

ICC Forms Control # ET-018

**** FCC ID Status**

1. FCC DOC
2. FCC A Verification
3. FCC B Verification
4. NONE (If performing FCC testing, contact lab manager.)
5. Certification (Include FCC ID in parenthesis.)

International Compliance Corporation
"Your Certification Solution" sm

Dallas/Ft. Worth Headquarters:
802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

CABLES

Client: New ID
EUT: 01-STR916-002
Date: 7/31/98

W.O#: 180260
S/N: 202

Place "*" Next to ant item that is part of the EUT.

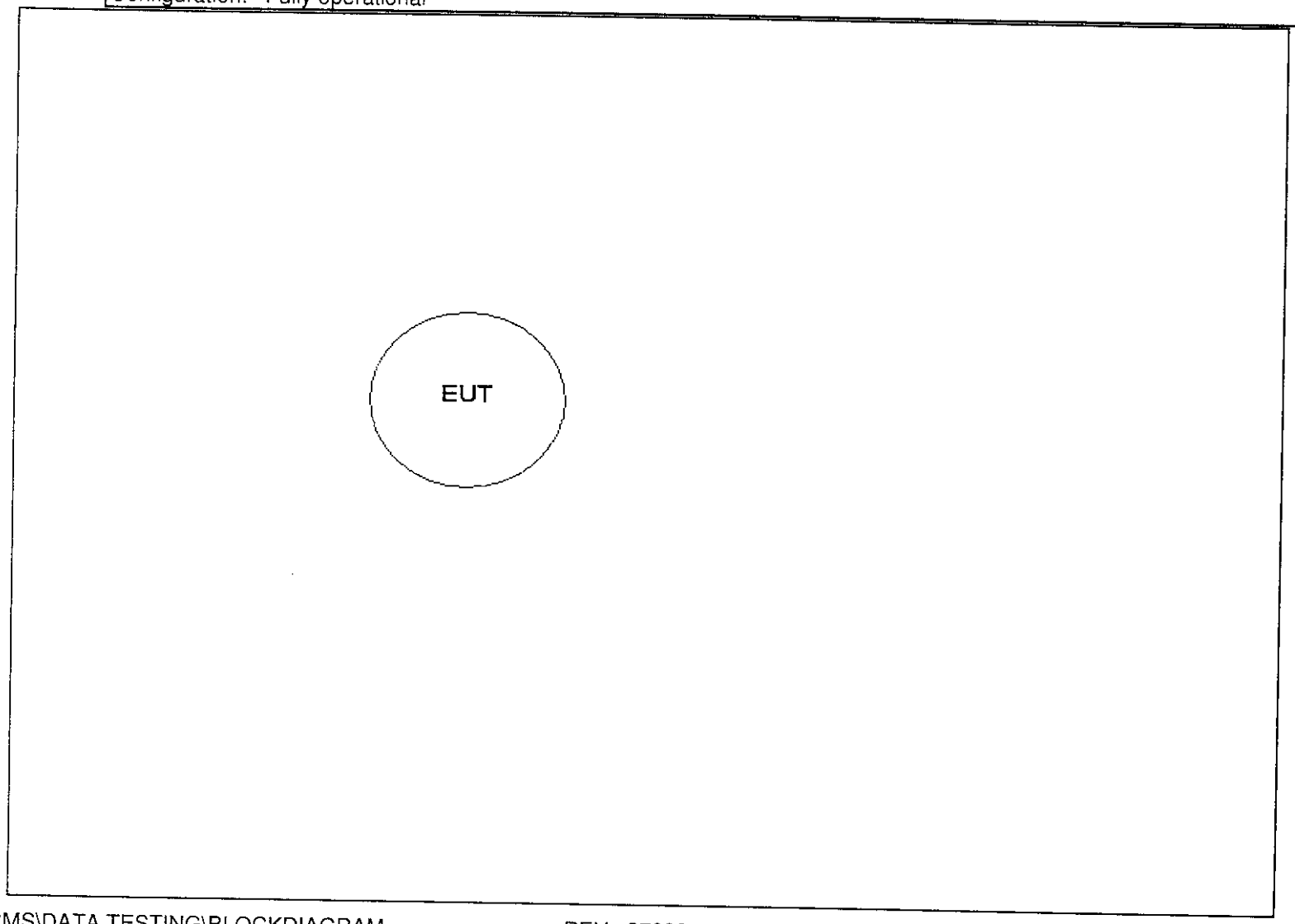
Complete every column, using N/A or unknown if needed.

Cable Type	Manufacturer	Model #	Serial #	Termination**	Length	Shield	Quantity	Hood Type
No cables used								

** Termination: 1. Peripheral 2. Resistive
3. Loopback 4. Remote Equipment
5. EUT 6. Other _____

BLOCK DIAGRAM

Client Name: New ID	Work Order #: **180260**
Model Number: 01-STR916-002	Date: **7/31/98**
Configuration: Fully operational	



APPENDIX B - TEST DATA

INTERNATIONAL COMPLIANCE CORPORATION

RADIATED EMISSIONS DATA
ELECTRIC FIELD

CLIENT NAME:	New ID				W.O.#: 180260	DATE:	7/30/98		
EUT MODEL:	01-STR 916-002			SERIAL #:	202	TIME:	8:00		
EUT CONFIG.:	Receive mode					TECH.:	John McCain		
TEST SPECIFICATION:	FCC B RAD (3M)					TEST NUMBER:	RE-1		
ROD ANT. #:		CABLE #:	4C	DETECT. TYPE:	PEAK	LOCATION:	COATS		
BICON ANT. #:	665	PREAMP. #:	946	RES. BW (kHz):	100	DISTANCE (m):	3		
LOG ANT. #:	202	LIMITER#	447	VIDEO BW (kHz):	100	EUT VOLTAGE:	3VDC		
HORN ANT. #:		ATTEN.#:	N/A	TEMP. (deg. C):	23	EUT FREQ. (Hz):	N/A		
DIPOLE ANT #:		DETECTOR#:	697	HUMIDITY (%):	44	PHOTO ID:	180260 RE-1 RAD. EM.		

Emission Frequency (MHz)	Ant. Pol. (H/V)	Det. Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	CR/SL Delta (dB)	Pass Fail Marginal	Notes
30.0	V	0.0	31.3	10.6	2.8	27.8	16.9	40.0	-23.1	Pass	Noise floor
80.0	V	0.0	30.6	7.8	4.3	27.0	15.7	40.0	-24.3	Pass	Noise floor
200.0	V	0.0	30.5	16.6	5.7	27.2	25.6	43.5	-17.9	Pass	Noise floor
30.0	H	0.0	31.8	10.6	2.8	27.8	17.4	40.0	-22.6	Pass	Noise floor
80.0	H	0.0	35.0	7.8	4.3	27.0	20.1	40.0	-19.9	Pass	Noise floor
200.0	H	0.0	35.0	16.6	5.7	27.2	30.1	43.5	-13.4	Pass	Noise floor
300.0	V	0.0	30.0	16.8	5.7	27.3	25.2	46.0	-20.8	Pass	Noise floor
600.0	V	0.0	30.0	20.5	12.1	27.9	34.7	46.0	-11.3	Pass	Noise floor
900.0	V	0.0	30.1	21.7	15.2	27.8	39.2	46.0	-6.8	Pass	Noise floor
300.0	H	0.0	30.3	16.8	5.7	27.3	25.5	46.0	-20.5	Pass	Noise floor
600.0	H	0.0	30.2	20.5	12.1	27.9	34.9	46.0	-11.1	Pass	Noise floor
900.0	H	0.0	30.1	21.7	15.2	27.8	39.2	46.0	-6.8	Pass	Noise floor
											Scanned from 30-1000 MHz

INTERNATIONAL COMPLIANCE CORPORATION

RADIATED EMISSIONS DATA
ELECTRIC FIELD

CLIENT NAME:	New ID				W.O.#: 180260	DATE:	7/31 98		
EUT MODEL:	01-STR 916-002			SERIAL #:	202	TIME:	11:00		
EUT CONFIG.:	Transmit mode					TECH.:	John McCain		
TEST SPECIFICATION:	FCC 15.249 (c)					TEST NUMBER:	RE-2		
ROD ANT. #:		CABLE #:	4C	DETECT. TYPE:	PEAK	LOCATION:	COATS		
BICON ANT. #:	665	PREAMP. #:	946	RES. BW (kHz):	100	DISTANCE (m):	3		
LOG ANT. #:	202	LIMITER#	447	VIDEO BW (kHz):	100	EUT VOLTAGE:	3VDC		
HORN ANT. #:		ATTEN.#:	N/A	TEMP. (deg. C):	23	EUT FREQ. (Hz):	N A		
DIPOLE ANT #:		DETECTOR#:	697	HUMIDITY (%):	44	PHOTO ID:	180260 RE-2 RAD. EM.		

Emission Frequency (MHz)	Ant. Pol. (H/V)	Det. Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	CR/SL Delta (dB)	Pass Fail Marginal	Notes
30.0	V	0.0	30.5	10.6	2.8	27.8	16.1	40.0	-23.9	Pass	Noise floor
80.0	V	0.0	33.0	7.8	4.3	27.0	18.1	40.0	-21.9	Pass	Noise floor
200.0	V	0.0	31.0	16.6	5.7	27.2	26.1	43.5	-17.4	Pass	Noise floor
30.0	H	0.0	30.8	10.6	2.8	27.8	16.4	40.0	-23.6	Pass	Noise floor
80.0	H	0.0	35.5	7.8	4.3	27.0	20.6	40.0	-19.4	Pass	Noise floor
200.0	H	0.0	32.1	16.6	5.7	27.2	27.2	43.5	-16.3	Pass	Noise floor
300.0	V	0.0	30.0	16.8	5.7	27.3	25.2	46.0	-20.8	Pass	Noise floor
600.0	V	0.0	29.8	20.5	12.1	27.9	34.5	46.0	-11.5	Pass	Noise floor
916.5	V	0.0	76.2	22.2	15.2	27.8	85.8	46.0	39.8	Fail	Fund. transmit freq. (See RE-3)
1000.0	V	0.0	30.3	24.5	16.3	28.4	42.7	54.0	-11.3	Pass	Noise floor
300.0	H	0.0	30.2	16.8	5.7	27.3	25.4	46.0	-20.6	Pass	Noise floor
600.0	H	0.0	30.0	20.5	12.1	27.9	34.7	46.0	-11.3	Pass	Noise floor
916.5	H	0.0	71.3	22.2	15.2	27.8	80.9	46.0	34.9	Fail	Fund. transmit freq. (See RE-3)
1000.0	H	0.0	30.2	24.5	16.3	28.4	42.6	54.0	-11.4	Pass	Noise floor
											Scanned from 30-1000MHz

Compliance Data

International Compliance Corporation
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802 N. Kealy
Lewisville, TX 75057
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Fax: (972) 436-2667

Radiated Emissions
FCC

Complete X
Preliminary

Client: New ID W.O.#: 180260 Date: 7/31/98

EUT: 01-STR916-002 S/N: 202 Specification: FCC B 15.249 (a)

Tech: John McCain Test #: RE-3 Lab: coats Photo ID: 180260 RE-3

Equipment Used: 946, 447, 697, 4C, 665, 202 Antenna Distance: 3

Configuration: Transmit mode

IF Bandwidth: 100KHz Video Bandwidth: 100KHz Detector: X Peak ____ Quasi Peak

Ambient Temperature: 26 C
Relative Humidity: 37 %
Atmospheric Pressure: 1001 mbar

EUT Power: ____ 115 V.A.C. ____ 60 Hz ____ 1 Phase
____ 230 V.A.C. ____ 50 Hz ____ 3 Phase
X Other 3vdc

Freq. (MHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV)	Spec.limit (dBuV) FCC	Pol.	Comments:
916.5	76.2	22.2	15.2	27.8	85.8	94	V	Fund. Transmit freq.
916.5	71.3	22.2	15.2	27.8	80.9	94	H	Fund. Transmit freq.

Note:Verify that the IF Bandwidth is in the proper setting.

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802 N. Kealy
Lewisville, TX 75057
Tel: (972) 436-9600
Fax: (972) 436-2667

Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: New ID Test #: MW-1 W.O.#: 180260

EUT: 01-STR916-002 S/N: 202 Photo ID: 180260 MW-1

Technician: John McCain Specification: FCC B RAD Lab: COATS Date: 7/30/98

Equipment Used: 494, cf00, cf03, 697,

Configuration: Receive mode

Bandwidth: 1MHz Video Bandwidth: 1MHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 26 C
Relative Humidity: 38 %
Atmospheric Pressure: 1000 mbar

EUT Power: ___ 115 V.A.C. ___ 208 V.A.C. ___ 230 V.A.C. X Other 3VDC
___ 60 Hz ___ 50 Hz
___ 1 Phase ___ 3 Phase
___ Peak X Average

Freq. (GHz)	Meter Reading (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	Conver. Factor	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	Pol.	Comments:
1	30	23.2	2.6	23.7	0	32.10	54	V	Noise floor
2.5	33.5	29.1	5.6	24.2	0	44	54	V	Noise floor
5	27.8	33.9	8.6	24.1	0	46.2	54	V	Noise floor
1	30	23.2	2.6	23.7	0	32.1	54	H	Noise floor
2.5	31	29.1	5.6	24.2	0	41.5	54	H	Noise floor
5	28	33.9	8.6	24.1	0	46.4	54	H	Noise floor
									Scanned from 1-5 GHz

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Lewisville, TX 75057
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Fax: (972) 436-2667

Microwave Radiated Emissions Data

Complete X Preliminary ___ Page 1 of 1

Client: New ID Test #: MW-2 W.O.#: 180260

EUT: 01-STR916-002 S/N: 202 Photo ID: 180260 MW-2

Technician: John McCain Specification: FCC 15.249 (a) and (c) Lab: COATS Date: 7/31/98

Equipment Used: 494, cf00, cf03, 697,

Configuration: Transmit mode

Bandwidth: 1MHz Video Bandwidth: 1MHz Antenna Distance 3 m Detector:

Climatic Conditions:
Temperature: 25 C
Relative Humidity: 37 %
Atmospheric Pressure: 1001 mbar

EUT Power: ___ 115 V.A.C. ___ 60 Hz ___ Peak
___ 208 V.A.C. ___ 50 Hz X Average
___ 230 V.A.C.
X Other 3VDC ___ 1 Phase ___ 3 Phase

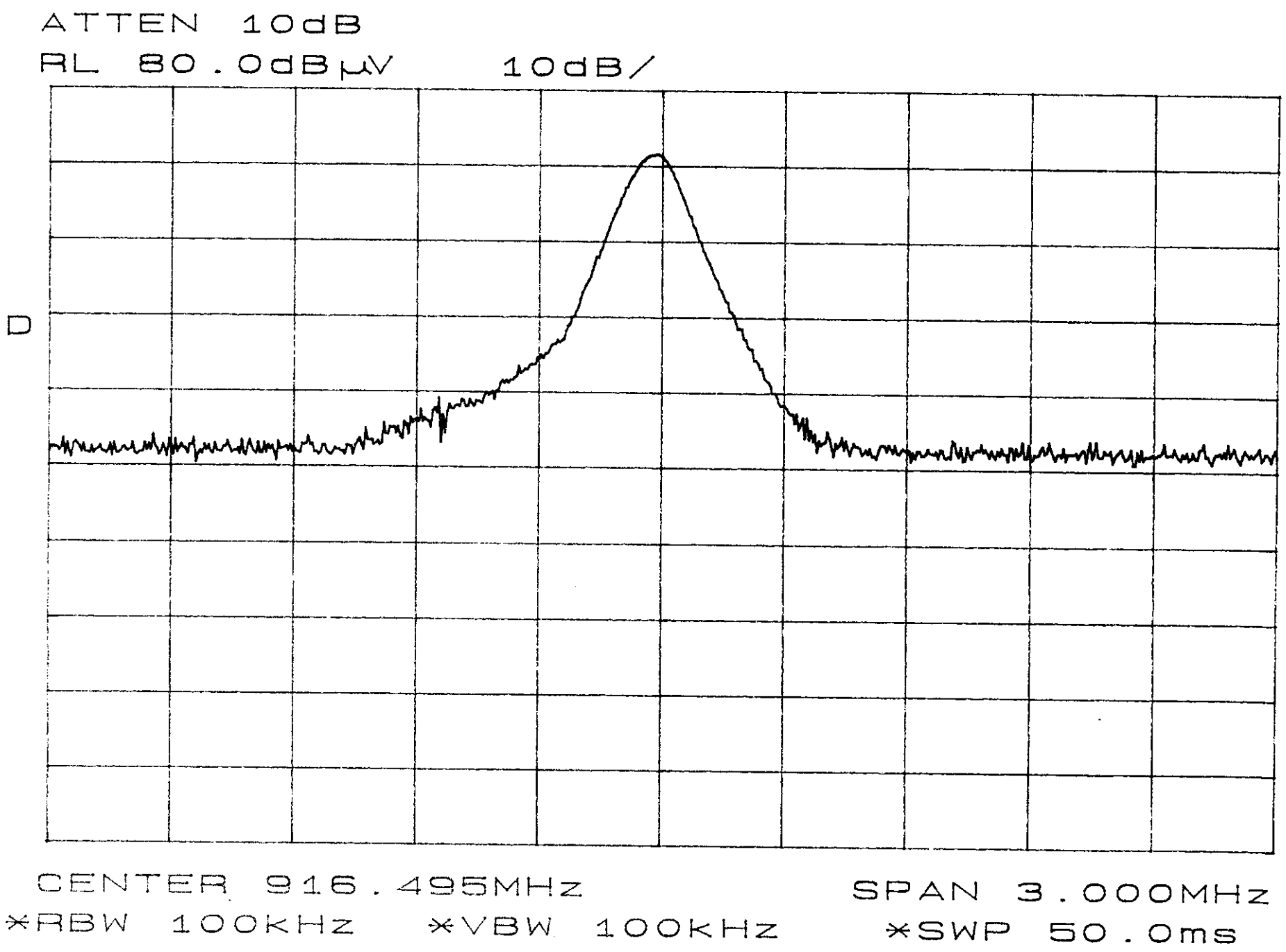
Freq. (GHz)	Meter Reading (dBuV/m)	Antenna Factor (dB)	Cable Loss (dB)	RF Gain (dB)	Conver. Factor	Corrected Reading (dBuV/m)	Spec. Limit (dBuV/m)	Pol.	Comments:
1	27.7	23.2	2.6	23.7	0	29.80	54	V	Noise floor
5	28.2	33.9	8.6	24.1	0	46.6	54	V	Noise floor
10	37.7	38	10.46	44.7	0	41.46	54	V	Noise floor
1	28.1	23.2	2.6	23.7	0	30.2	54	H	Noise floor
5	28	33.9	8.6	24.1	0	46.4	54	H	Noise floor
10	38	38	10.46	44.7	0	41.76	54	H	Noise floor
									Scanned from
									1-10 GHz

APPENDIX C - PRELIMINARY TEST DATA

DO NOT USE PRELIMINARY DATA FOR COMPARISONS WITH THE REGULATORY AGENCY LIMIT.

Client Name: NEW TD	Work Order #: 180260
Model Number: 01-STR 916-002	Plot Number: 1
Test Date: 7/31/98	Polarization: FUND. TRANSMIT FREQ.

___ Completed X Preliminary



APPENDIX D - CERTIFICATIONS AND RECOGNITIONS

CERTIFICATIONS AND RECOGNITIONS

NORTH AMERICA:

- **FEDERAL COMMUNICATIONS COMMISSION (United States of America)**
- **NVLAP (United States of America)**
- **UNDERWRITERS LABORATORIES (United States of America)**

EUROPE:

- **ACEMARK EUROPE LTD (United Kingdom)**

  European EMC Competent Bodies:
  BSI Testing
  Chase EMC, Ltd.
  Dedicated Micros, Ltd.
  EURO EMC SERVICE (EES)
  Gastec NV
  GEC Marconi Avionics
  Hursley EMC Services
  KTL
  LUCAS VARITY
  Motor Industry Research Association (MIRA)
  SGS EMC, Ltd.
  TRL EMC, Ltd.
  TRIPLE C
  KCS CERTIFICATION
  YORK EMC SERVICES

- **INTERFERENCE TECHNOLOGY INTERNATIONAL, LTD. (United Kingdom)**
- **NEMKO (Norway)**

ASIA:

- **VCCI (Japan)**
- **BCIQ (Taiwan)**

SOUTH PACIFIC:

- **MINISTRY OF COMMERCE (New Zealand)**