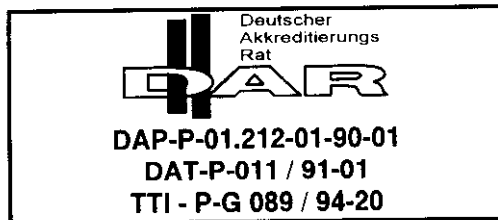


EXHIBIT 3

Report Of Measurement

Includes sample calculations, block diagrams, photographs of test configurations and properly signed and dated report.



FCC ID: NXIE86B

EMISSION -- TESTREPORT

Testreport file no. : T12769-1-04 TW Date : March 28, 1998
of issue

Model : E 86 Basestation Transmitter Part

Type : Remote Command Unit

Applicant : Marposs S.p.A.

Manufacturer : Marposs S.p.A.

Licence holder : Marposs S.p.A.

Address : Via Saliceto 13
40010 Bentivoglio BO - Italia

Test result accrdg. to the regulation(s) at page 3 : ☒ **Positive** ☐ **Negative**

This testreport with appendix consists of **50** pages.
The testresult only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the testlaboratory.

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TEST REGULATIONS

The tests were performed according to following regulations :

- o - EN 50081-1 / 2.1991
- o - EN 50081-2 / 7.1993

-
- o - EN 55011 / 3.1991

- o - Group 1
- o - class A
- o - Group 2
- o - class B

- o - EN 55014 / 4.1993

- o - Household appliances and similar
- o - tools
- o - Semiconductor devices

- o - EN 55014 / A2:1990
- o - EN 55104 / 5.1995

Category:

- o - EN 55015 / A1:1990
- o - EN 55015 / 12.1993

- o - EN 55022 / 5.1995

- o - class A
- o - class B

- o - prEN 55103-1 / 3.1995
- o - prEN 50121-3-2 / 3.1995
- o - EN 60601-1-2 / 4.1994

- o - VCCI

- o - class 1
- o - class 2

- - 47 CFR Part 15 Subpart C (15.249)

FCC ID: NXIF86B

ENVIRONMENTAL CONDITIONS

Temperature: 15-35 ° C
Humidity 45-60 %
Atmospheric pressure 860-1060 mbar

POWER SUPPLY SYSTEM UTILIZED

Power supply system : DC Input: 9-24 V / 1 ϕ

STATEMENT OF MEASUREMENT UNCERTAINTY

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities that can account for a nominal measurement error of $\pm 4\text{dB}$. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

SHORT DESCRIPTION OF THE EQUIPMENT UNDER TEST (EUT)

The E86 Unit consists of 2 transceivers, Base- and Probestation. The Basestation activates the Probestation with a certain code. After this activation, the Probestation is able to transmit datas

Number of received/tested samples: 2 / 1

DEFINITIONS FOR SYMBOLS USED IN THIS TEST REPORT

- - Black box indicates that the listed condition, standard or equipment is applicable for this Report.
- - Blank box indicates that the listed condition, standard or equipment was not applicable for this Report.

TEST CONDITIONS

The measurement of the conducted emissions (interference voltage) were performed in a shielded room.

o - Test not applicable

Testlocation :

- o - Shielded room no. 1
- - Shielded room no. 2
- o - Shielded room no. 3
- o - Shielded room no. 4
- o - Shielded room no. 5
- o - Shielded room no. 6
- o - Shielded room no. 7
- o - Anechoic chamber
- o - Full compact chamber

Used testinstruments :

● - ESH 3	Rohde & Schwarz	O.-No.: 04-7/63-89-009
o - ESHS 20	Rohde & Schwarz	O.-No.: 42-7/63-94-001
o - ESHS 30	Rohde & Schwarz	O.-No.: 04-7/63-92-045
o - SMV - 11	RFT	O.-No.: 42-7/63-86-007
o - FMLK 1518	Schwarzbeck	O.-No.: 04-7/63-90-017

Test - accessories :

o - ESH 2-Z5	Rohde & Schwarz	O.-No.: 04-7/60-87-032
● - ESH 2-Z5	Rohde & Schwarz	O.-No.: 04-7/60-90-033
o - NNB 111	RFT	O.-No.: 04-7/60-92-225
o - NSLK 8127	Schwarzbeck	O.-No.: 04-7/60-90-036
o - NNLK 8121	Schwarzbeck	O.-No.: 04-7/60-89-037
o - NTFM 8132	Schwarzbeck	O.-No.: 04-7/60-87-058
o - NNLA 8120	Schwarzbeck	O.-No.: 04-7/60-93-250
o - NNBM 8114	Schwarzbeck	O.-No.: 04-7/60-95-341
o - NNBM 8116	Schwarzbeck	O.-No.: 04-7/60-95-342
o - NNLK 8129	Schwarzbeck	O.-No.: 04-7/60-96-349
o - T1 - NNB	BOSSE	O.-No.: 04-7/60-87-059
o - T2 - NNB	BOSSE	O.-No.: 04-7/60-87-060
o - TK11	RFT	O.-No.: 04-7/60-83-062
o - TK12	RFT	O.-No.: 04-7/60-83-063
o - ESH 3-Z6	Rohde & Schwarz	O.-No.: 04-7/60-94-263
o - EZ - 10	Rohde & Schwarz	O.-No.: 04-7/60-92-209
o - Lampshade	MIKES	O.-No.: 04-7/60-91-143
o - ESH 2-Z5	Rohde & Schwarz	O.-No.: 42-7/60-94-002
o - ESH 3-Z5	Rohde & Schwarz	O.-No.: 42-7/60-94-003
o - Vehicle - LISN	MIKES	O.-No.: 42-7/60-89-004
o - ESH 2-Z3	Rohde & Schwarz	O.-No.: 42-7/60-94-005
o - Vehicle - LISN	MIKES	O.-No.: 42-7/60-89-038

All used test-instruments as well as the Test-accessories are calibrated regularly.

FCC ID: NXIE86B

The measurement of the spurious emissions (magnetic field) were performed

● - Test not applicable

- - in a shielded room
- - at a non - reflecting open-site and
- - in a testdistance of 3 meters.
- - in a testdistance of 30 meters.

Used testinstruments :

○ - ESH 3	Rohde & Schwarz	O.-No.: 04-7/63-89-009
○ - ESHS 20	Rohde & Schwarz	O.-No.: 42-7/63-94-001
○ - ESHS 30	Rohde & Schwarz	O.-No.: 04-7/63-92-045
○ - SMV - 11	RFT	O.-No.: 42-7/63-86-007
○ - FMLK 1518	Schwarzbeck	O.-No.: 04-7/63-90-017

Test - accessories :

○ - HFH 2 Z 2	Rohde & Schwarz	O.-No.: 04-7/62-87-016
○ - FMA 11	RFT	O.-No.: 42-7/62-86-006
○ - FMZB 1516	Schwarzbeck	O.-No.: 04-7/62-90-018
○ - Loop Antenna 2m	MIKES	O.-No.: 04-7/62-96-328

The measurement of the radiated spurious emissions (electric field) in the frequency range of 30 MHz-1000 MHz were performed in horizontal and vertical antenna polarisation at a non-reflecting open-site and a testdistance of:

○ - Test not applicable

- - Open-site 1
- - Open-site 2
- - 3 meters
- - 10 meters
- - 30 meters

Used testinstruments :

● - ESVP	Rohde & Schwarz	O.-No.: 04-7/63-89-008
○ - ESVS 30	Rohde & Schwarz	O.-No.: 04-7/63-95-056
○ - ESU 2	Rohde & Schwarz	O.-No.: 42-7/63-93-008
○ - SMV 21	RFT	O.-No.: 04-7/63-90-007

Test - accessories :

● - BBA 9106	Schwarzbeck	O.-No.: 04-7/62-86-072
○ - BBA 9106	Schwarzbeck	O.-No.: 04-7/62-91-044
○ - BBA 9106	Schwarzbeck	O.-No.: 04-7/62-92-048
○ - UHALP 9107	Schwarzbeck	O.-No.: 04-7/62-83-010
● - UHALP 9107	Schwarzbeck	O.-No.: 04-7/62-91-071
○ - UHALP 9107	Schwarzbeck	O.-No.: 04-7/62-92-047
○ - UHALP 9107	Schwarzbeck	O.-No.: 42-7/62-94-002
○ - UHA 9105	Schwarzbeck	O.-No.: 42-7/62-94-003
○ - VHA 9103	Schwarzbeck	O.-No.: 42-7/62-94-004
○ - BBA 9106	Schwarzbeck	O.-No.: 42-7/62-94-005

All used test-instruments as well as the Test-accessories are calibrated regularly.

The measurement of the radiated spurious emissions (electric field) in the frequency range 1 GHz - 18 GHz was performed in horizontal and vertical antenna polarisation at a non-reflecting test-site and a test distance of:

○ - Test not applicable

Test location :

- - Open-site 1
- - Open-site 2
- - Anechoic chamber
- - Full compact chamber

- - 1 meters
- - 3 meters
- - 10 meters

Used test instruments :

- | | | |
|--------------|-----------------|------------------------|
| ○ - 492P | Tektronix | O.-No.: 04-7/74-87-001 |
| ○ - R 4131 B | ADVANTEST | O.-No.: 04-7/63-92-045 |
| ● - FSEM-30 | Rhode & Schwarz | O.-No.: 04-7/74-97-001 |

Test - accessories :

- | | | |
|-------------------|-------------|------------------------|
| ○ - BBHA 9120 | Schwarzbeck | O.-No.: 04-7/62-88-212 |
| ● - 3115 | EMCO | O.-No.: 04-7/62- |
| ● - Model 613A | NARDA | O.-No.: 04-7/62-88-213 |
| ● - Model 612 | NARDA | O.-No.: 04-7/62-88-214 |
| ● - Model 640 | NARDA | O.-No.: 04-7/62-88-215 |
| ○ - Model 639 | NARDA | O.-No.: 04-7/62-88-216 |
| ● - AWT 4534 | AVANTEK | O.-No.: 04-7/66-89-217 |
| ● - AMT 8035 | AVANTEK | O.-No.: 04-7/66-89-218 |
| ● - AMT 12435 | AVANTEK | O.-No.: 04-7/66-89-219 |
| ○ - AMF-5D-120180 | AVANTEK | O.-No.: 04-7/66-94-270 |
| ● - Sucoflex 104 | Suhner | O.-No.: 04-7/60-90-231 |

All used test-instruments as well as the Test-accessories are calibrated regularly.

The measurement of the conducted spurious emissions in the frequency range 30 MHz - 18 GHz was performed in a shielded room:

● - Test not applicable

Testlocation :

- - Shielded room No. 2
- - Shielded room No. 3
- - Shielded room No. 4
- - Full compact chamber

Used testinstruments :

○ - 492P	Tektronix	O.-No.: 04-7/74-87-001
○ - R 4131 B	ADVANTEST	O.-No.: 04-7/63-92-045
○ - FSEM-30	Rhode & Schwarz	O.-No.: 04-7/74-97-001

Test - accessories :

○ - HP-55.25/50/N	Rohrbacher	O.-No.: 04-7/60-95-280
○ - BS-26M/D60/Z50/N	Rohrbacher	O.-No.: 04-7/60-95-288
○ - BS-26M/D60/Z50/N	Rohrbacher	O.-No.: 04-7/60-96-431
○ - BS-430M/D60/Z50/N	Rohrbacher	O.-No.: 04-7/60-95-290
○ - Sucoflex 104	Suhner	O.-No.: 04-7/60-90-231

All used test-instruments as well as the Test-accessories are calibrated regularly.

The measurement of the Radiated power of the fundamental wave were performed in an open site.

○ - Test not applicable

- - Open-site 1
- - Open-site 2
- - 3 meters
- - 30 meters

Used testinstruments :

● - ESVP	Rohde & Schwarz	O.-No.: 04-7/63-89-008
○ - ESVS 30	Rohde & Schwarz	O.-No.: 04-7/63-95-056

Test - accessories :

○ - BBA 9106	Schwarzbeck	O.-No.: 04-7/62-86-072
○ - BBA 9106	Schwarzbeck	O.-No.: 04-7/62-91-044
○ - BBA 9106	Schwarzbeck	O.-No.: 04-7/62-92-048
○ - UHALP 9107	Schwarzbeck	O.-No.: 04-7/62-83-010
● - UHALP 9107	Schwarzbeck	O.-No.: 04-7/62-91-071
○ - UHALP 9107	Schwarzbeck	O.-No.: 04-7/62-92-047
○ - UHALP 9107	Schwarzbeck	O.-No.: 42-7/62-94-002
○ - UHA 9105	Schwarzbeck	O.-No.: 42-7/62-94-003
○ - VHA 9103	Schwarzbeck	O.-No.: 42-7/62-94-004
○ - BBA 9106	Schwarzbeck	O.-No.: 42-7/62-94-005

All used test-instruments as well as the Test-accessories are calibrated regularly.

The **measurement of the frequency error** was performed in a climatic chamber under variation of temperature and supply voltage:

● - Test not applicable

o - Climatic test chamber VLK Heraeus Vötsch O.-Nr.: 04-1/90-89-001

Used testinstruments :

o - FSEM-30	Rhode & Schwarz	O.-No.: 04-7/74-97-001
o - CMS 54	Rohde & Schwarz	O.-No.: 04-7/63-94-052
o - CMS 54	Rohde & Schwarz	O.-No.: 04-7/63-94-062

Test - accessories :

o - Power Supply	Statron	O.-No.: 04-7/49-95-279
o - Power Supply	EA3016	O.-No.: 04-7/49-86-118

All used test-instruments as well as the Test-accessories are calibrated regularly.

The **measurement for keeping the requirements of the emission mask** between 50 % and 250 % away of the authorized bandwidth were performed in a climatic chamber under variation of temperature and supply voltage:

● - Test not applicable

o - Climatic test chamber VLK Heraeus Vötsch O.-Nr.: 04-1/90-89-001

Used testinstruments :

o - FSEM	Rhode & Schwarz	O.-No.: 04-7/74-97-001
----------	-----------------	------------------------

Test - accessories :

o - Power Supply	Statron	O.-No.: 04-7/49-95-279
o - Attenuator 20 dB	Spinner	O.-No.: 04-7/60-91-065

All used test-instruments as well as the Test-accessories are calibrated regularly.

The **measurement of the frequency deviation** was performed in a climatic chamber under normal conditions:

● - Test not applicable

o - Climatic test chamber VLK Heraeus Vötsch O.-Nr.: 04-1/90-89-001

Used testinstruments :

o - CMS 54	Rohde & Schwarz	O.-No.: 04-7/63-94-052
o - CMS 54	Rohde & Schwarz	O.-No.: 04-7/63-94-062

Test - accessories :

o - Power Supply	Statron	O.-No.: 04-7/49-95-279
------------------	---------	------------------------

FCC ID: NXIE86B

EQUIPMENT UNDER TEST

Operation - mode of the EUT.:

The equipment under test was operated during the measurement under following conditions:

- - Standby
- - Testprogram (H - Pattern)
- - Testprogram (color bar)
- - Testprogram (customer specific)
- - permanent Transmit (modulated with activation code for Probestation)
- - _____
- - _____
- - _____

Configuration of the equipment under test: see appendix
 Following periphery devices and interface cables were connected during the measurement:

- | | |
|--|-----------------------------|
| ● - <u>DC Power Supply</u> | Type : <u>Statron</u> |
| ● - <u>Interface</u> | Type : <u>Marposs S.p.A</u> |
| ○ - _____ | Type : _____ |
| ○ - _____ | Type : _____ |
| ○ - _____ | Type : _____ |
| ○ - _____ | Type : _____ |
| ○ - _____ | Type : _____ |
| ○ - unshielded power cable | |
| ● - unshielded cables | |
| ○ - shielded microphone cable (length about 2 m) | |
| ○ - customer specific cables | |
| ○ - _____ | |
| ○ - _____ | |

FCC ID: NXIE86B

TEST RESULT

Conducted emissions 10/150 kHz - 30 MHz

☐ - Test not applicable

The requirements are

● - MET

○ - NOT MET

Min. limit margin

>5 dB at 0.45-30 MHz

Max. limit exceeding

 dB at MHz

Remarks: The limits are met. The measurement was performed direct on the
DC-port. For Plot see page B1-B2

Spurious emissions (magnetic field) 10 kHz - 30 MHz

☒ - Test not applicable

The requirements are

○ - MET

○ - NOT MET

Min. limit margin

 dB at MHz

Max. limit exceeding

 dB at MHz

Remarks: Not applicable.

Spurious emissions radiated (electric field) 30 MHz - 1000 MHz

☐ - Test not applicable

The requirements are

● - MET

○ - NOT MET

Min. limit margin

>5 dB at 30-1000 MHz

Max. limit exceeding

 dB at MHz

Remarks: The limits are met.

For plot see page B3-B4

TEST RESULT

Spurious emissions radiated 1 GHz - 18 GHz

○ - Test not applicable

The requirements are

● - MET

O - NOT MET

Min. limit margin

7

dB

at 1.827 GHz

Max. limit exceeding

dB

at GHz

Remarks: The limits are met. The measurement has been performed in Peak-
mode, critical results have been remeasured in average mode.

For plot see page B5 -B 9

Spurious emissions conducted 30 MHz - 18 GHz

● - Test not applicable

The requirements are

O - MET

O - NOT MET

Min. limit margin

dB

at GHz

Max. limit exceeding

dB

at GHz

Remarks:

Radiated power of the fundamental wave measured in the open site (3 m)

○ - Test not applicable

The requirements are

● - MET

O - NOT MET

Max. ERP of fundamental wave

93.5

dB μ V

at 913.64 MHz

Max. limit margin

dB

Remarks: The limits are met. For plot see Page B3 - B4 .

FCC ID: NXIE86B

TEST RESULT

Frequency deviation

☒ - Test not applicable

The requirements are

☐ - MET

☐ - NOT MET

Max. frequency deviation

_____ kHz

Max. limit exceeding

_____ kHz

Remarks: _____

Frequency error

☒ - Test not applicable

The requirements are

☐ - MET

☐ - NOT MET

Frequency range of equipment								
Temperature/°C	DC supply voltage/V	Frequency error/kHz	Frequency error/kHz	Frequency error/kHz	Frequency error/kHz	Frequency error/kHz	Frequency error/kHz	Frequency error/kHz
-30								
-20								
-10								
0								
+10								
+20								
+30								
+40								
+50								

Remarks: _____

TEST RESULT

Keeping the requirements of the emission mask

● - Test not applicable

The requirements are

O - MET

O - NOT MET

The requirements are as following:

Attenuation on any frequencies removed from the transmit frequency

between 50 and 100 % of the authorized bandwidth: at least 25 dB

between 100 and 250 % of the authorized bandwidth: at least 35 dB

more than 250 % of the authorized bandwidth: see spurious emissions

The following table is showing the minimal margin to the required attenuations:

Frequency range of equipment							
Temperature/°C	DC supply voltage/V	±50-100% [dB]	±100-250% [dB]	±50-100% [dB]	±100-250% [dB]	±50-100% [dB]	±100-250% [dB]
-30							
-20							
-10							
0							
+10							
+20							
+30							
+40							
+50							

Remarks: _____

M E A S U R E M E N T P R O T O C O L F O R F C C , V C C I
A N D A U S T E L

GENERAL INFORMATION

Test Methodology

Conducted and radiated emission testing is performed according to the procedures in International Special Committee on Radio Interference (CISPR) Publication 22 (1993), European Standard EN 55022 and Australian Standard AS 3548 (which are based on CISPR 22).

The Japanese standard, "Voluntary Control Council for Interference (VCCI) by Data Processing Equipment and Electronic Office Machines, Technical Requirements" is technically equivalent to CISPR 22 (1993). For official compliance, a conformance report must be sent to and accepted by the VCCI.

In compliance with FCC Docket 92-152, "Harmonization of Rules for Digital Devices Incorporate International Standards", testing for FCC compliance may be done following the ANSI C63.4-1992 procedures and using the CISPR 22 Limits.

Measurement Error

The test system for conducted emissions is defined as the LISN, tuned receiver and coaxial cable. The test system for spurious emissions is defined as the antenna, the pre-amplifier, the tuned receiver and the coaxial cable. These test systems have an expected error of ± 3 dB. The equipment comprising the test systems are calibrated on an annual basis.

Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into its characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

CONDUCTED EMISSIONS

The final level, expressed in dB μ V, is arrived at by taking the reading directly from the EMI receiver. This level is compared directly to the CISPR limit, which is equivalent to the Australian AS 3548 limit.

To convert between dB μ V and μ V, the following conversions apply:

$$\text{dB}\mu\text{V} = 20(\log \mu\text{V})$$

$$\mu\text{V} = \text{Inverse log}(\text{dB}\mu\text{V}/20)$$

SPURIOUS EMISSIONS

The final level, expressed in dB μ V/m, is arrived at by taking the reading from the EMI receiver (Level dB μ V) and adding the antenna correction factor and cable loss factor (Factor dB) to it. This is done automatically in the EMI receiver, where the correction factor are stored. This result then has the CISPR limit subtracted from it to provide the Delta which gives the tabular data as shown in the data sheets at page 24 - 25. The CISPR 22 limit is equivalent to the Australian AS 3548 limit.

Example:

Frequency (MHz)	Level (dB μ V)	+	Factor (dB)	=	Final (dB μ V/m)	-	CISPR B Limit (dB μ V/m)	=	Delta CISPR B (dB)
37.19	10.2	+	12.0	=	22.2	-	30.0	=	-7.8

DETAILS OF TEST PROCEDURES

General Standard Information

The test methods used comply with CISPR Publication 22 (1993), EN 55022 (1987) and AS 3548 (1992) - "Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment" and with 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."

Conducted Emissions

Conducted emissions on the 50 Hz and/or 60 Hz power interface of the EUT are measured in the frequency range of 150 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasipeak detection, and a Line Impedance Stabilization Network (LISN), with 50 Ω / 50 μ H (CISPR 16) characteristics. Table top equipment is placed on a non-conducting table 80 centimeters above the floor and is positioned 40 centimeters from the vertical ground plane (wall) of the screen room. If the minimum passing margin appears to be less than 20 dB with a peak mode measurement, the emissions are remeasured using a tuned receiver with quasipeak and average detection and recorded on the data sheets.

Spurious emissions

Spurious emissions from the EUT are measured in the frequency range of 30 to 10 times the highest used frequency using a tuned receiver and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with 120 kHz/6 dB bandwidth and quasipeak 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 was positioned 3, 10 or 30 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.

Conducted power of the fundamental wave measured on the antenna terminals

The conducted power of the fundamental wave measured on the antenna terminals in a climatic test chamber. The integrated antenna was removed and an antenna jack was established thereof. The antenna jack was connected to the input of a communication test receiver. The internal batteries have been removed also and a variable DC power supply was used instead. The measurements have been made with the EUT unmodulated. During the test the supply voltage and the temperature were varied and applied simultaneously. The lower supply voltage was given by the manufacturer. In case the equipment was switching off before, the switch off voltage was used instead.

Frequency deviation

The frequency deviation was measured on the antenna terminals in a climatic test chamber. The integrated antenna was removed and an antenna jack was established thereof. The antenna jack was connected to the input of a communication test receiver. The internal batteries have been removed also and a variable DC power supply was used instead. The measurements have been made with a modulation frequency and voltage accdg. to the specification of the manufacturer. The audio frequency was provided by the communication test receiver. During the test the supply voltage and the temperature were varied and applied simultaneously. The lower supply voltage was given by the manufacturer. In case the equipment was switching off before, the switch off voltage was used instead. The test was performed on three different frequencies within the audio frequency range. The test datas are showing the worst case.

Frequency error

The frequency error was measured on the antenna terminals in a climatic test chamber. The integrated antenna was removed and an antenna jack was established thereof. The antenna jack was connected to the input of a communication test

receiver. The internal batteries have been removed also and a variable DC power supply was used instead. The measurements have been made with the EUT unmodulated. During the test the supply voltage and the temperature were varied and applied simultaneously. The lower supply voltage was given by the manufacturer. In case the equipment was switching off before, the switch off voltage was used instead. The frequency error is defined as the deviation of the transmitting frequency from the nominal frequency.

Keeping the requirements of the emission mask

The keeping of the requirements of the emission mask was measured on the antenna terminals in a climatic test chamber. The integrated antenna was removed and a antenna jack was established thereof. The antenna jack was connected to the input of a spectrum analyzer. The spectrum analyzer was set up as following:

- video and resolution bandwidth: 10 kHz
- attenuation: automatic, low noise
- center frequency: nominal transmit frequency
- frequency span: 1 MHz ($\pm 250\%$ of the channel bandwidth).

The reference level was set to the maximum value of the unmodulated carrier. The internal batteries have been removed also and a variable DC power supply was used instead. The measurements have been made with a modulation frequency and voltage accdg. to the specification of the manufacturer. The audio frequency was provided by a communication test receiver. During the test the supply voltage and the temperature were varied and applied simultaneously. The lower supply voltage was given by the manufacturer. In case the equipment was switching off before, the switch off voltage was used instead.

Requirements for the modulation characteristic

The modulation characteristic was measured on the antenna jacket. The input modulation have been varied between the specification of the manufacturer. All other measurements have been performed with the worst case modulation (full modulated) or unmodulated where it is necessary.

The modulation characteristic was measured with different Resolution Bandwidth of the Analyzer also.

SUMMARY**GENERAL REMARKS:**

The model E86 consists of two transceiver (Base- and Probestation). This testreport covers the transmitter part of the Basestation.

For further results on the E86 unit see the following test reports:

T12769-1-05TW	Receiver part of Basestation
T12769-1-06TW	Transmitter part of Probestation
T12769-1-07TW	Receiver part of Probestation

The test was performed on the following channel:
Channel 913.650 MHz

FINAL JUDGEMENT:

The requirements according to the technical regulations and tested operation modes are

- - met.
- - **not** met.

The equipment under test

- - **Fulfills** the general approval requirements cited on page 3.
- - **Does not** fulfill the general approval requirements cited on page 3.

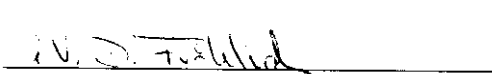
Date of receipt of test sample : accdg. to storage record

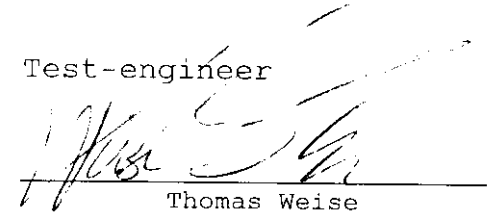
Testing Start Date : March 09, 1998

Testing End Date : March 11, 1998

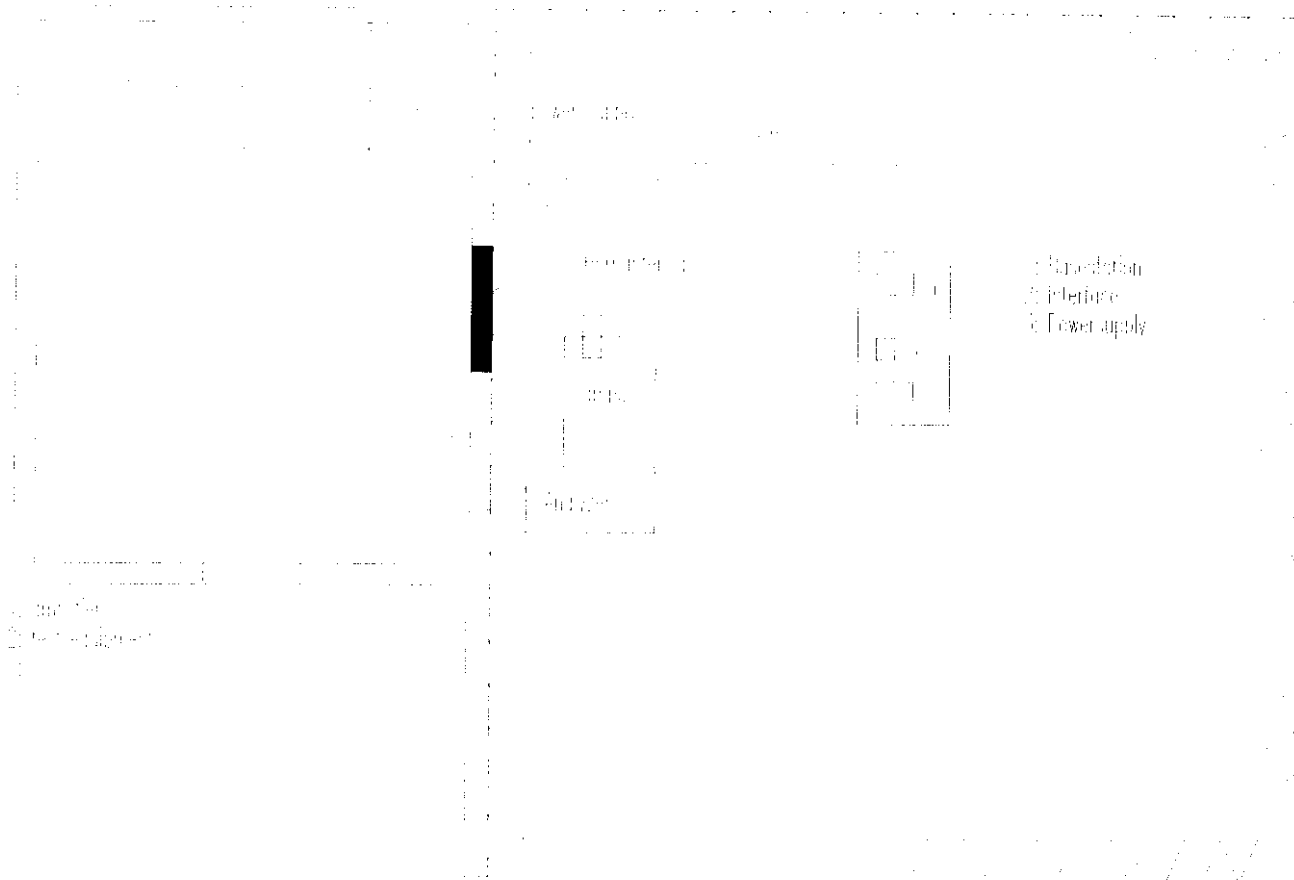
- MIKES PRODUCT SERVICE GmbH -

Test-engineer


Günter Mikes
Dipl.-Ing. (FH)


Thomas Weise
Dipl.-Ing. (FH)

Test-Setup:

Radiated emission 1000 MHz - 10th harmonic of the fundamental wave

CONSTITUTIONAL PARTIAL TYPE TESTING OF RADIO EQUIPMENT

Licence holder: MARPOSS S.p.A.

Address: Via Saliceto 13 - 40010 Bentivoglio (BO) - ITALY

Manufacturer: MARPOSS S.p.A.

Address: Via Saliceto 13 - 40010 Bentivoglio (BO) - ITALY

Type: E86

Model: _____

Serial-No.: _____ Protection class: _____

Application for getting

☒ national approval in the following countries: USA and CANADA

☐ EC-type examination

Additional informations to the above named model:

Antenna:

base station transceiver: Type: 1/4 shortened with a central helix
Length/size: 67mm

probe station transceiver: Type: 1/4 microstrip on teflon
Length/size: 59mm

Power supply of the base station:

Type: DC supplied by the ancillary device

nominal voltage:	<u>16 V</u>
lowest voltage:	<u>12 V</u>
highest voltage:	<u>18 V</u>

Power supply of the receiver:

Type: DC supplied by a battery size ANSI 1604

nominal voltage:	<u>9 V</u>
lowest voltage:	<u>5 V</u>
highest voltage:	<u>10 V</u>

Ancillary equipment:

Description: <u>Interface whit the CNC</u>	Type: <u>E86 INTERFACE</u>	Serial-no.: _____
Description: _____	Type: _____	Serial-no.: _____
Description: _____	Type: _____	Serial-no.: _____

Extreme temperature range in which the approval test should be performed:

☐ Category I: General (-20°C to +55°C) ☐ Category II: Portable (-10°C to +55°C)

☒ Category III: Equipment for normal indoor use (0°C to +55°C)

Connectable cables:

Name of the cable	Digital	Length/m	shielded
Data/power cable	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	max. 30m	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> yes <input type="checkbox"/> no

FCC ID: NX1E86B

Type designation: E86

Name and type designation of individual units comprising the radio equipment:

- 1) E86 - base station
- 2) E86 - probe station

Type of equipment:

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> Radiotelephone equipment | <input type="checkbox"/> Remote-control equipment | <input type="checkbox"/> Radiomaritime equipment | <input checked="" type="checkbox"/> LPD |
| <input type="checkbox"/> One-way radiotelephone equipment | <input type="checkbox"/> Inductive loop system | <input type="checkbox"/> Inland waterways equipment | <input type="checkbox"/> RLAN |
| <input type="checkbox"/> Personal paging system | <input type="checkbox"/> Radio-relay system | <input type="checkbox"/> Radionavigation equipment | <input type="checkbox"/> |
| <input type="checkbox"/> Satellite earth station | <input type="checkbox"/> CB radiotelephone equipment | <input type="checkbox"/> Antenna | <input type="checkbox"/> |
| <input type="checkbox"/> Data transmission equipment | <input type="checkbox"/> Movement detector | <input type="checkbox"/> Aeronautical equipment | <input type="checkbox"/> |

Technical characteristics:

	Base station transmitter	Probe station transmitter
Frequency range	913.5 Mhz	912.2 - 916.8 MHz
Maximum no. of channels	1 single channel	16 channels
Channel spacing		200 KHZ
Class of emission (type of modulation)	A1D	F7D
Maximum RF output power		
Maximum RF electric field	50 mV/m @ 3m	50 mV/m @ 3m
Output power variable	NO	NO
Channel switching frequency range	0	4.6 MHz

Method of frequency generation (TX)	SAW Resonator	Synthesizer
Frequency generation RX	Synthesizer	No oscillator
IF	1st IF: 110.2 - 110.8 Mhz 2nd IF: 10.7 Mhz	No IF
Power source	24VDC from E86interface	Integral (9V battery)

Integral selective calling	NO
----------------------------	----

Audio-frequency interface level at external data socket	No audio output
---	-----------------

Modes of operation	<input type="checkbox"/> Duplex mode	<input checked="" type="checkbox"/> Semi-duplex mode	<input type="checkbox"/> Simplex mode
--------------------	--------------------------------------	--	---------------------------------------

Antenna socket	<input type="checkbox"/> BNC	<input type="checkbox"/> TNC	<input type="checkbox"/> N
	<input type="checkbox"/> M	<input type="checkbox"/> UHF	<input type="checkbox"/> Adapter
	<input checked="" type="checkbox"/> None	<input type="checkbox"/>	<input type="checkbox"/>

Type approval specifications:

Applicant: MARPOSS S.p.A. Model-name: E56

FCC ID: NXIE86B

Declarations:

☒ We declare that the above information are correct and the named model was supplied with the maximum configuration to the accredited test laboratory.


BENTIVOGLIO, date 27/04/1998
place of issue

Guido Zanni

Seal and signature of applicant

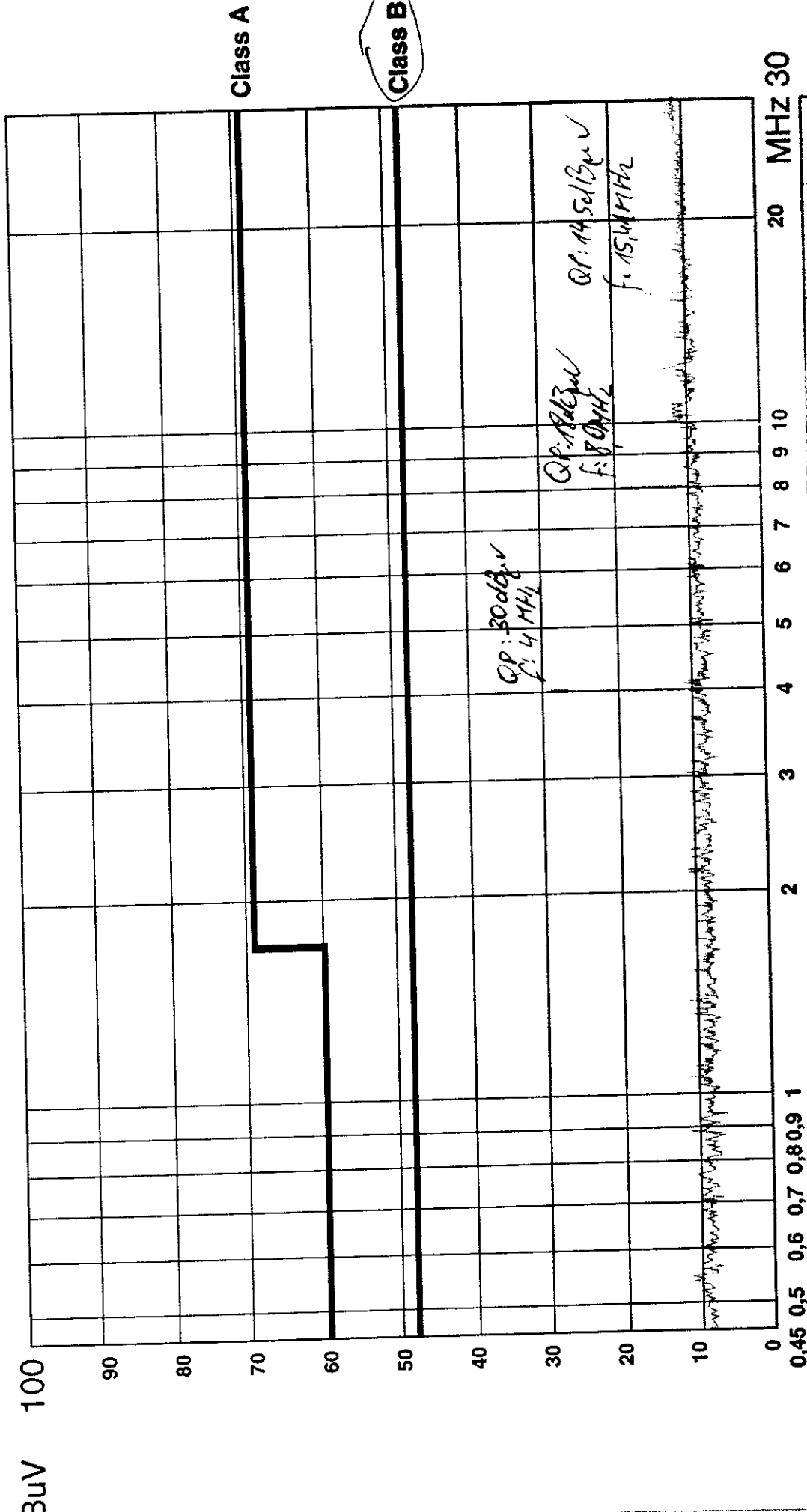
MARPOSS S.p.A.
Via Saliceto, 13
40010 BENTIVOGLIO BO
ITALIA



ID  USA version
ESL
Marpos
TX
+24V DC

Type/Model:
Ser. No.:
Client:
Test mode:
Test point:

INTERFERENCE VOLTAGE – TEST 450 kHz – 30 MHz
C Part 15 Subpart B



Tag	Name	Blatt
date	name	page
Gemessen	70.03.	1/1

Test Result: ☒ o.k.
☐ n.o.k.

Test receiver: ☒ P
☒ QP

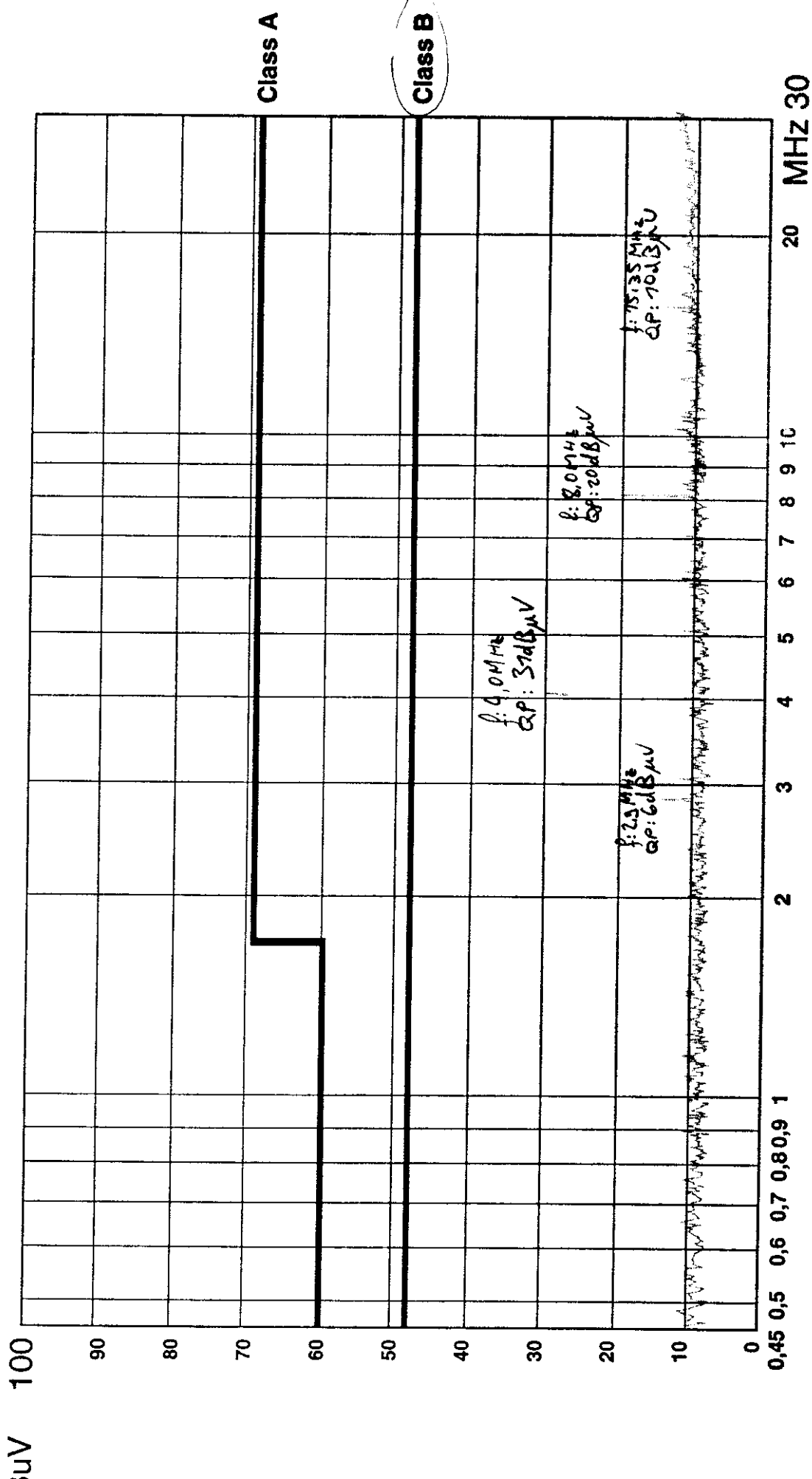
INTERFERENCE VOLTAGE – TEST 450 kHz – 30 MHz
C Part 15 Subpart B

ID:
E86 USA Version
Marposs
TX
- (24V DC)

Type/Model:
 Ser. No.:
 Client:
 Test mode:
 Test point:



FCC ID: NX1E86B



Test receiver: ☒ P ☒ QP

Test Result: ☒ o.k. ☐ n.o.k.

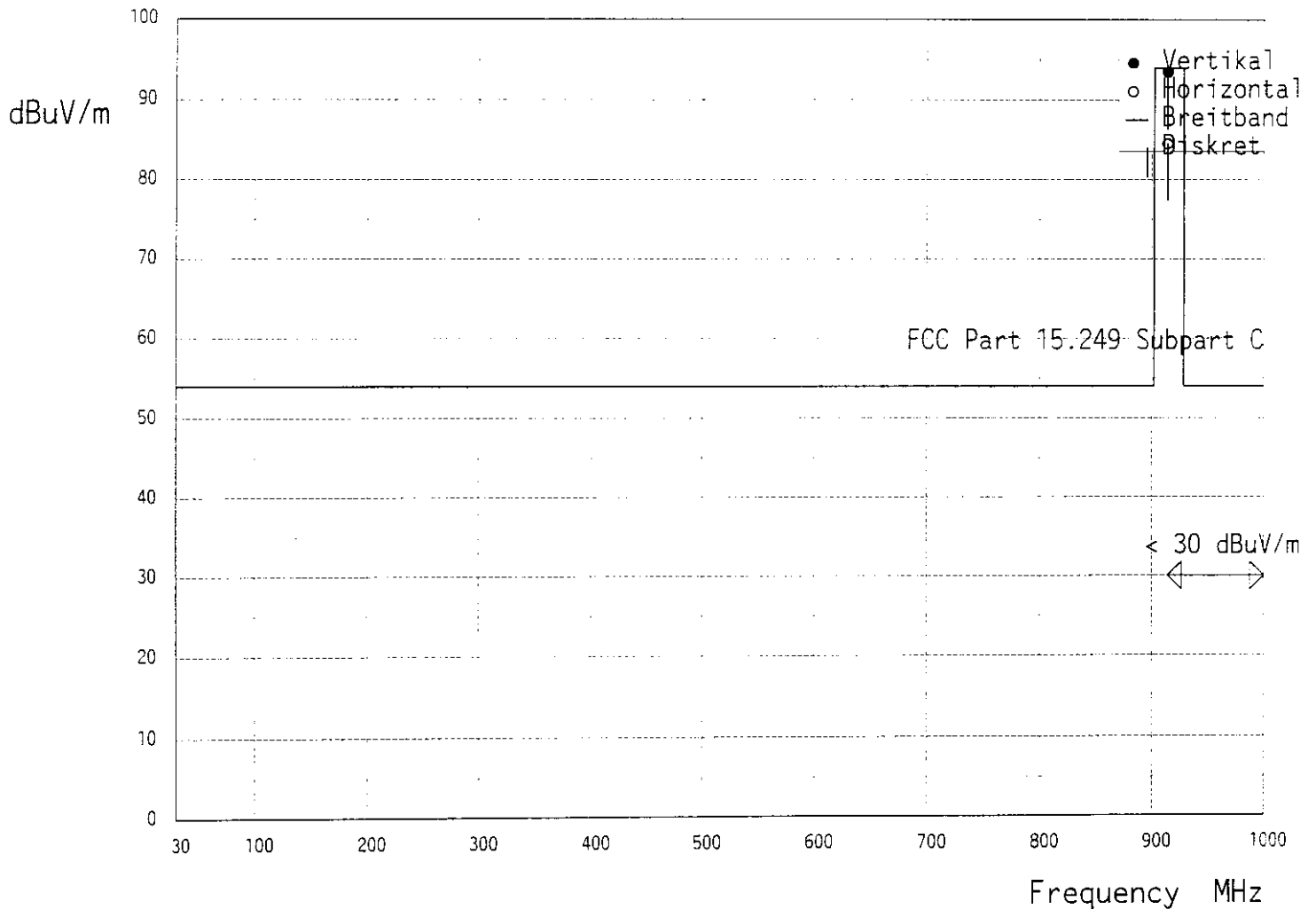
Tag	Name	Blatt
		page
Gemessen	10.05	10.10
testort		B2B3

Radiation-Test

accdg.FCC Part 15

Typ: E86
Manufacturer: Marposs
Client: Marposs
Regulation: FCC 15.249
Order No.: T12769
Operation Mode: permanent TX Basestation
Remarks: The limits are met

Testdistance: 3 m
Testreceiver: ESVP
Antenna: BBA/UHALP
Testengineer: Weise
Date: 30-03-1998



Radiation-Test

accdg.FCC Part 15

Typ: E86
 Manufacturer: Marposs
 Client: Marposs
 Regulation: FCC 15.249
 Order No.: T12769
 eration Mode: permanent TX Basestation
 Remarks: The limits are met

Testdistance: 3 m
 Testreceiver: ESVP
 Antenna: BBA/UHALP
 Testengineer: Weise
 Date: 30-03-1998

Result	Frequency	Reading	Korr	Final	Limit	DLimit	Polarisation	Noise
	[MHz]	[dBuV/m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]		
	913.64	50.0	34.5	84.5	94.0	9.5	Horizontal	Diskret
	913.64	59.0	34.5	93.5	94.0	.5	Vertikal	Diskret

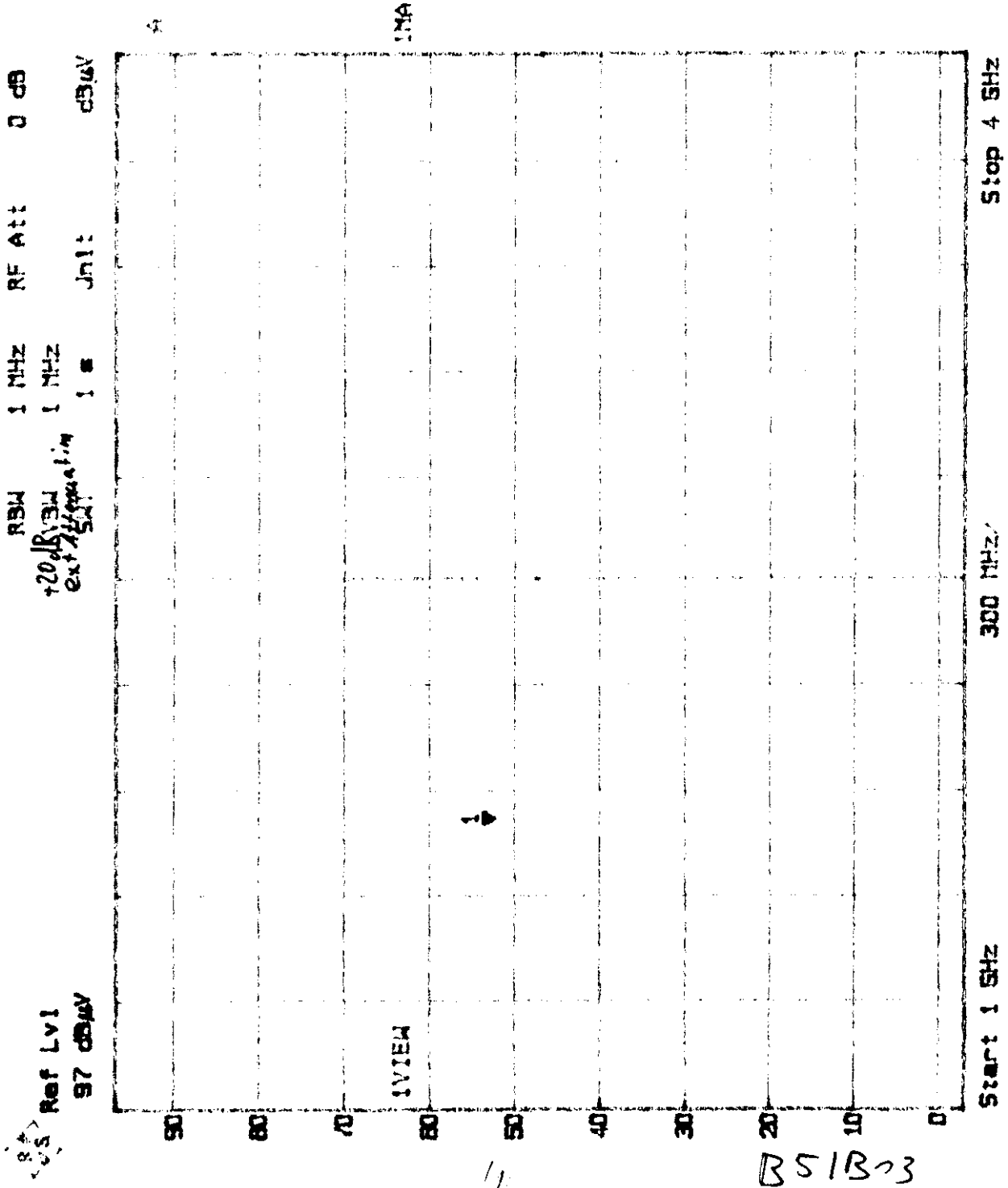
913.64 MHz - 1000 MHz < 30 dBuV/m

Base station

TX

Max Peak - Mode

FCC ID: NXIE86B



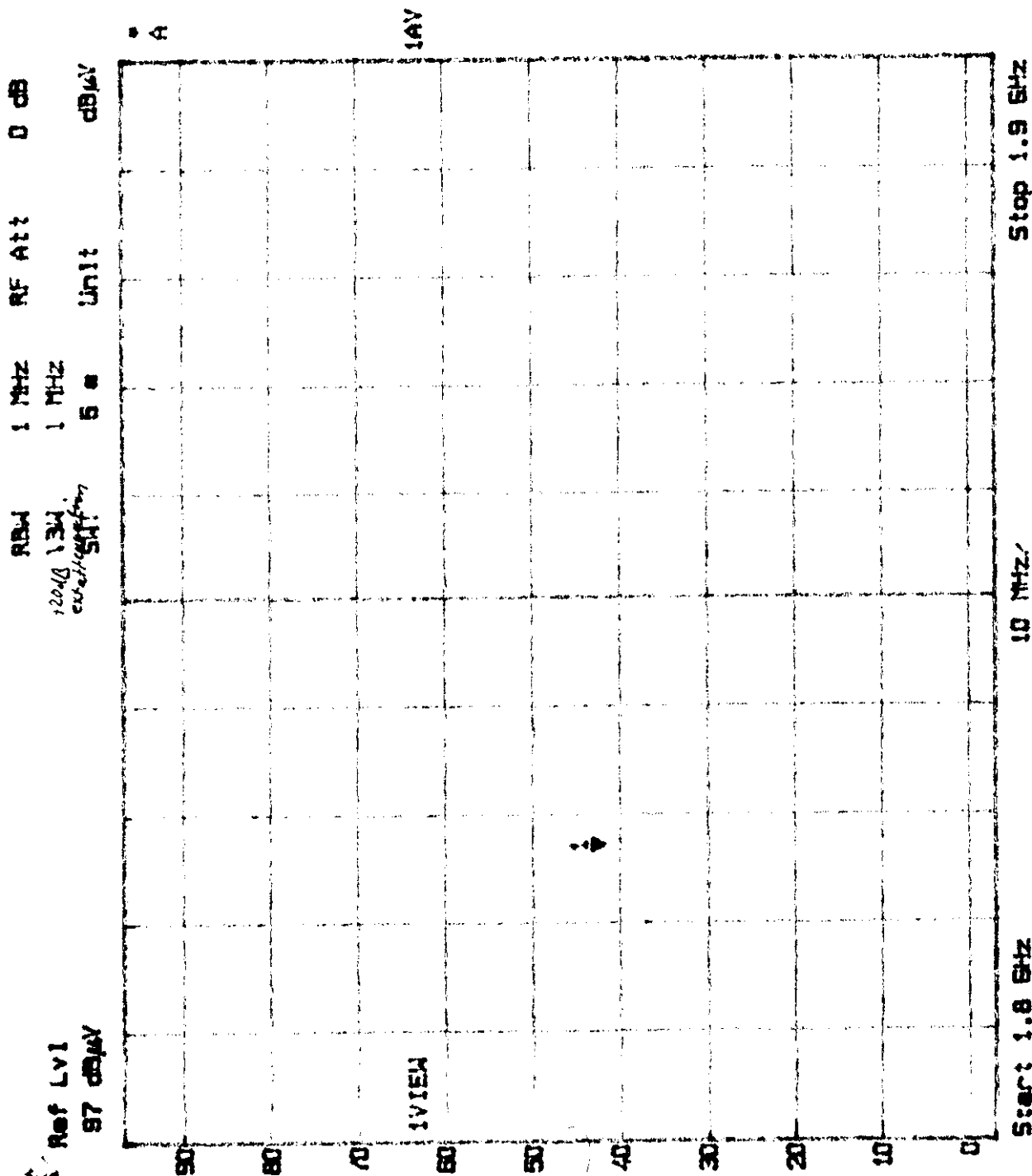
Date: 10.MAR.98 13:25:10

Base station

Transmit

Average Mode

FCC ID: NX1E86B



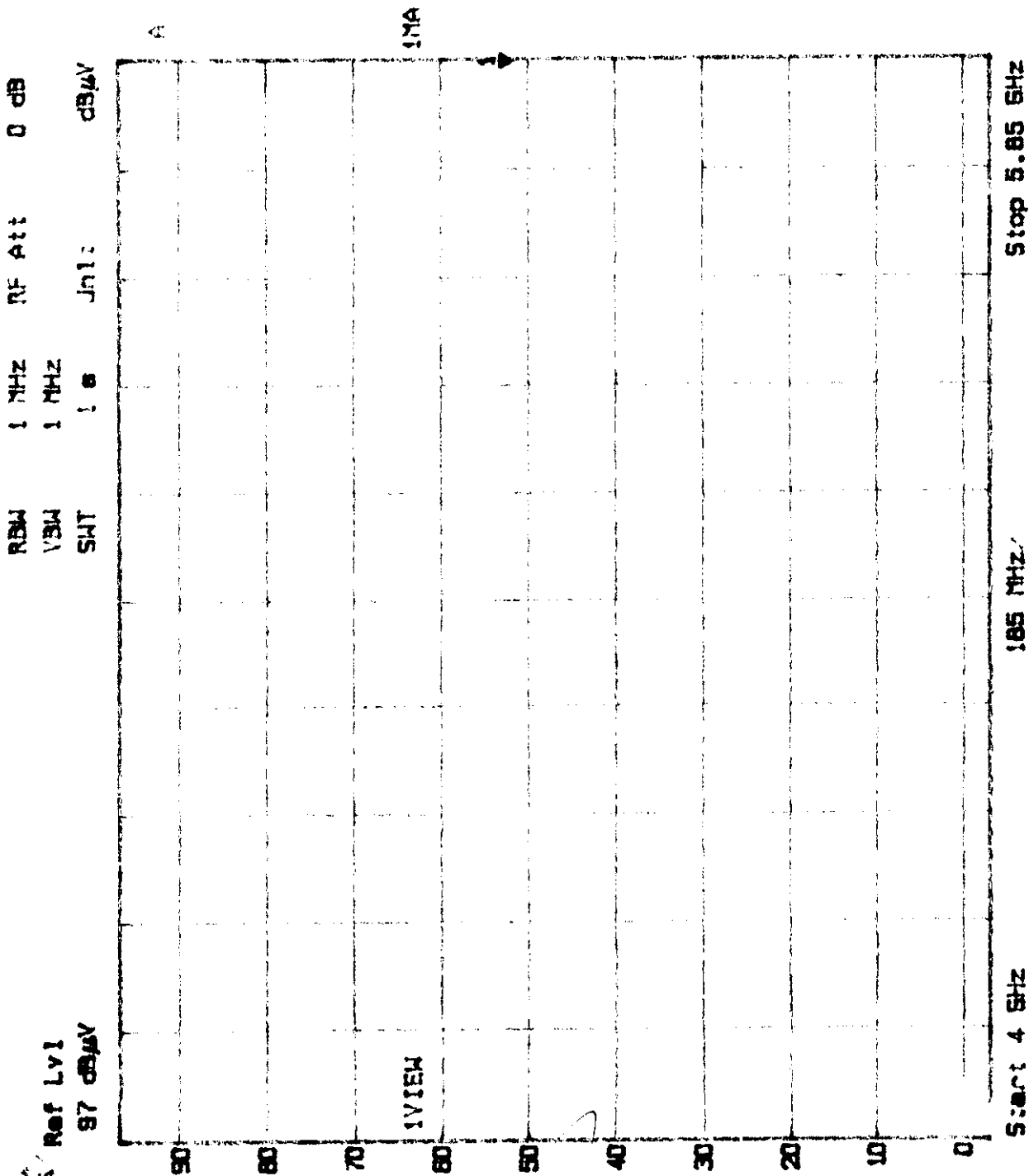
Date: 10.MAR.98 13:29:15

B61B-3

Base station

TX

FCC ID: NX1E86B



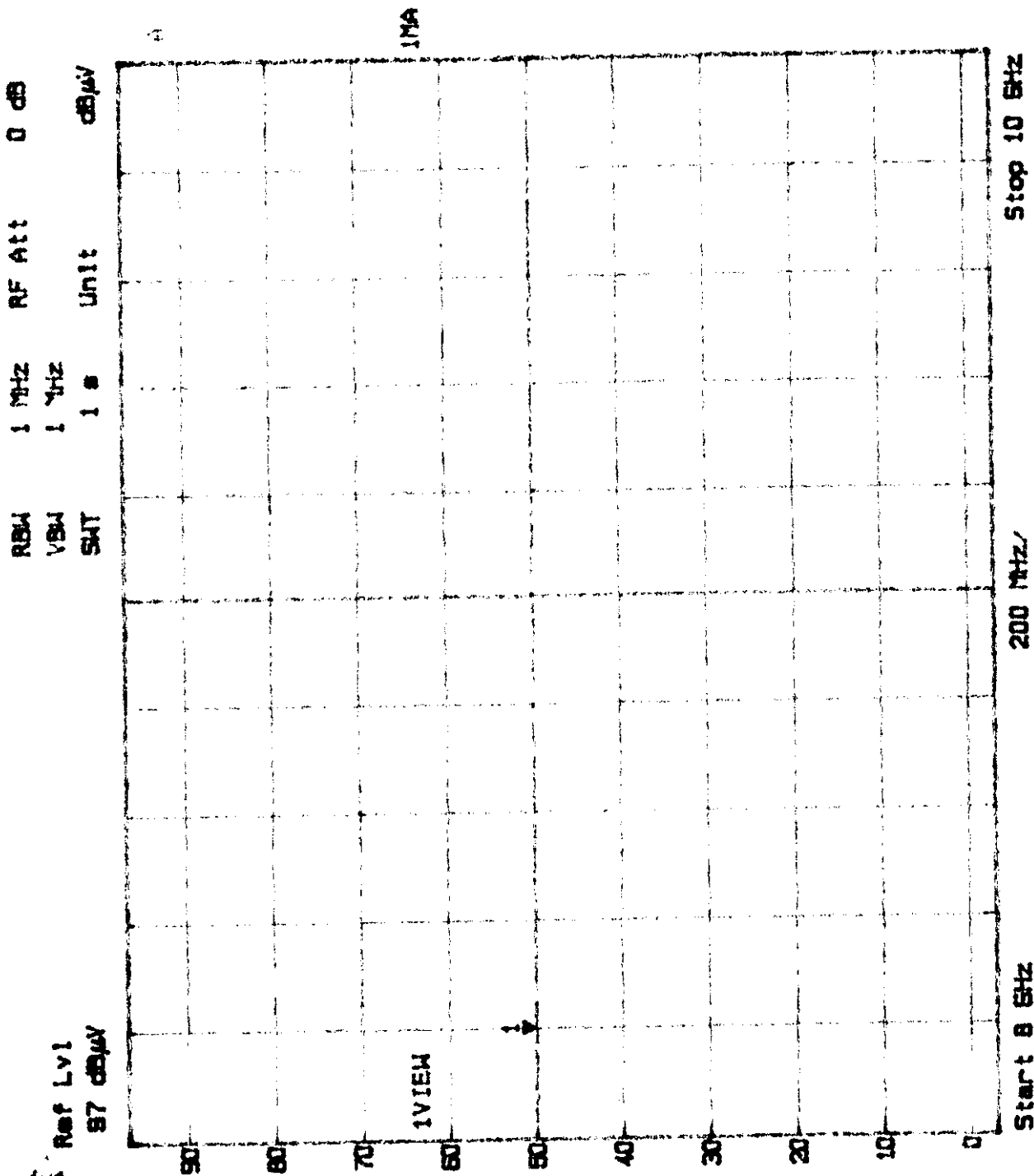
Date: 10.MAR.98 12:18:15

1/12

B7/B3

Base station TX

FCC ID: NXIE86B

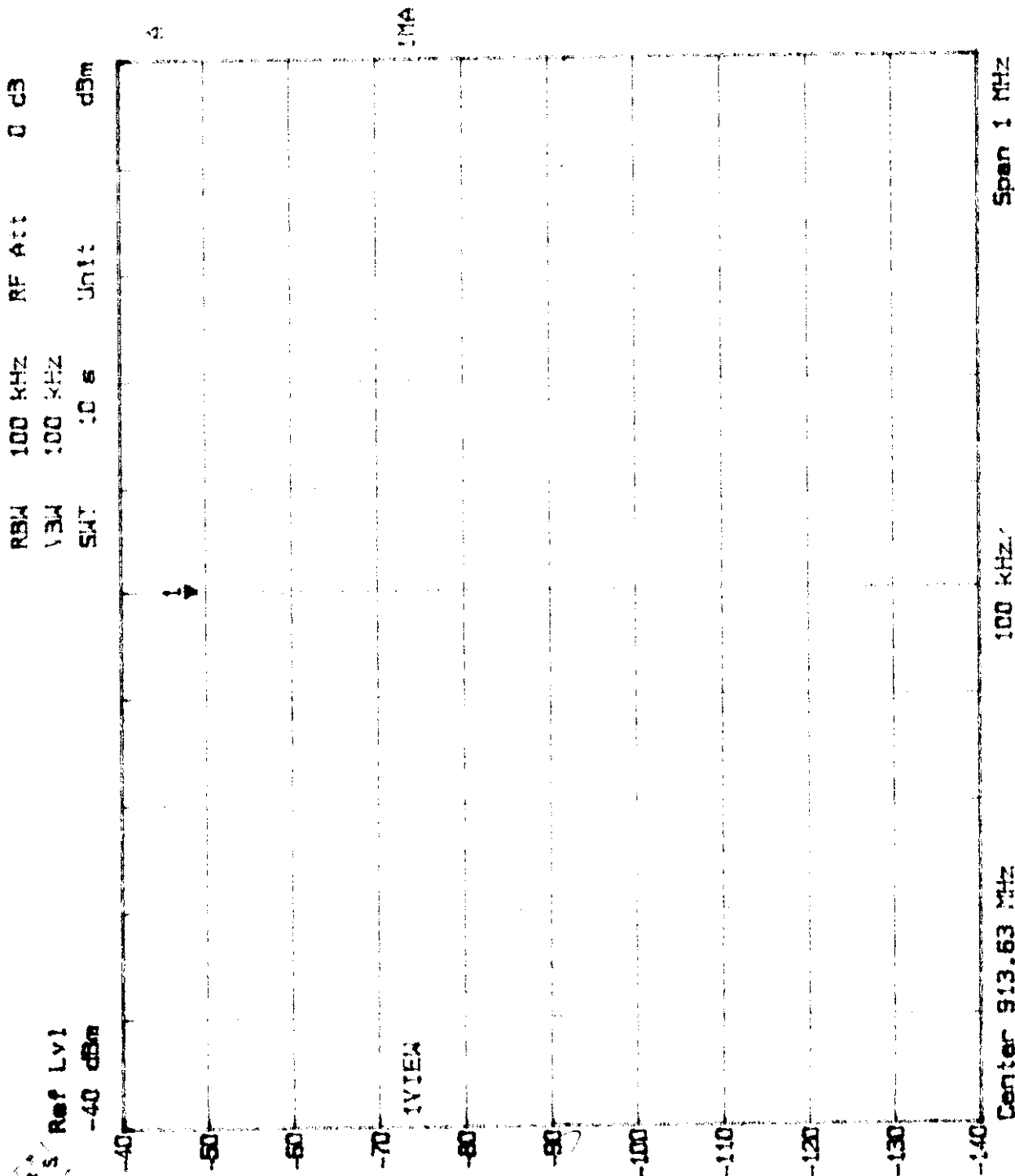


Date: 10.MAR.98 11:38:58

B31B13

Base station TX

FCC ID: NX1E86B



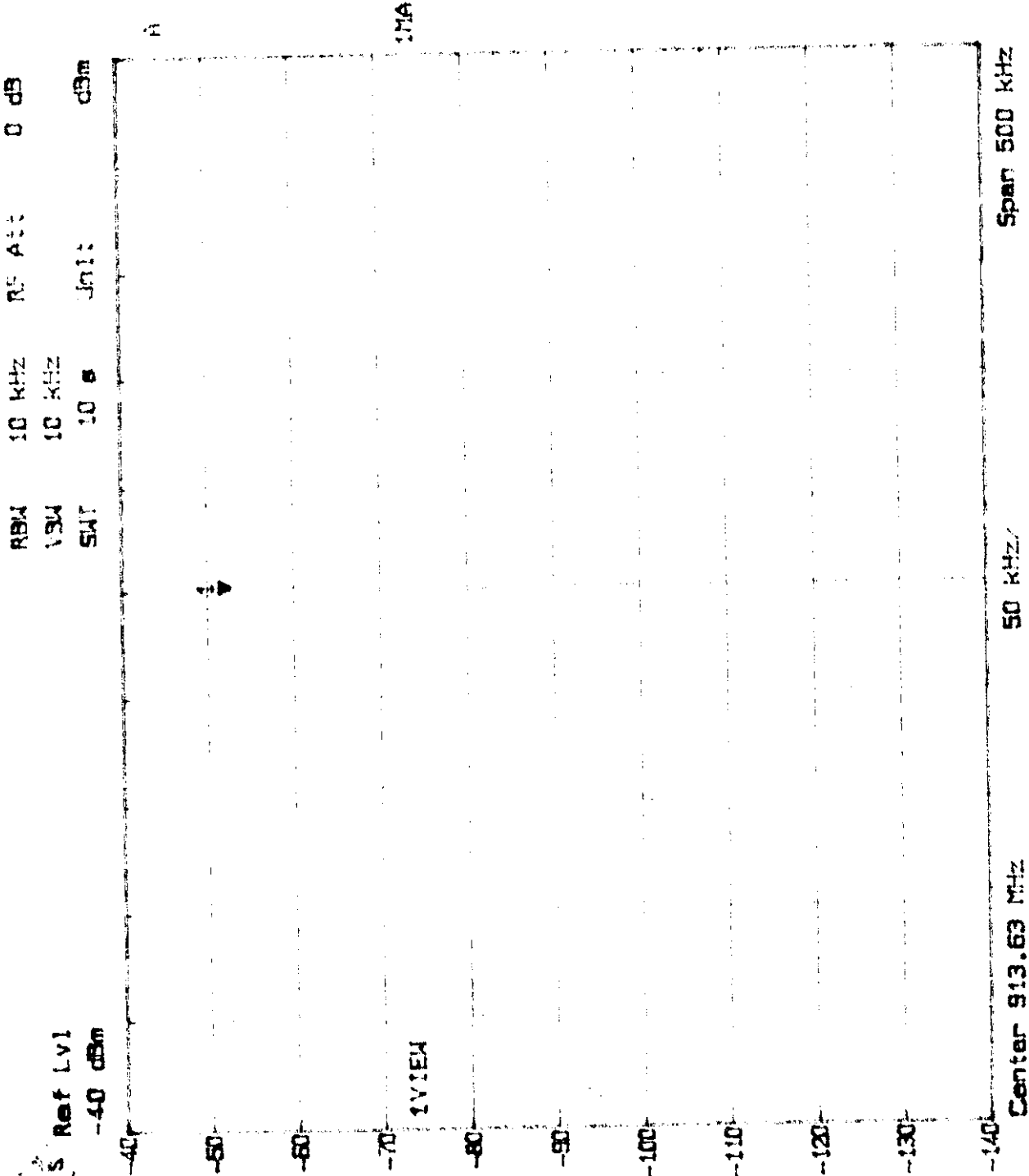
Date: 10.MAR.98 17:40:12

B701B13

Base station

TX

FCC ID: NXIE86B

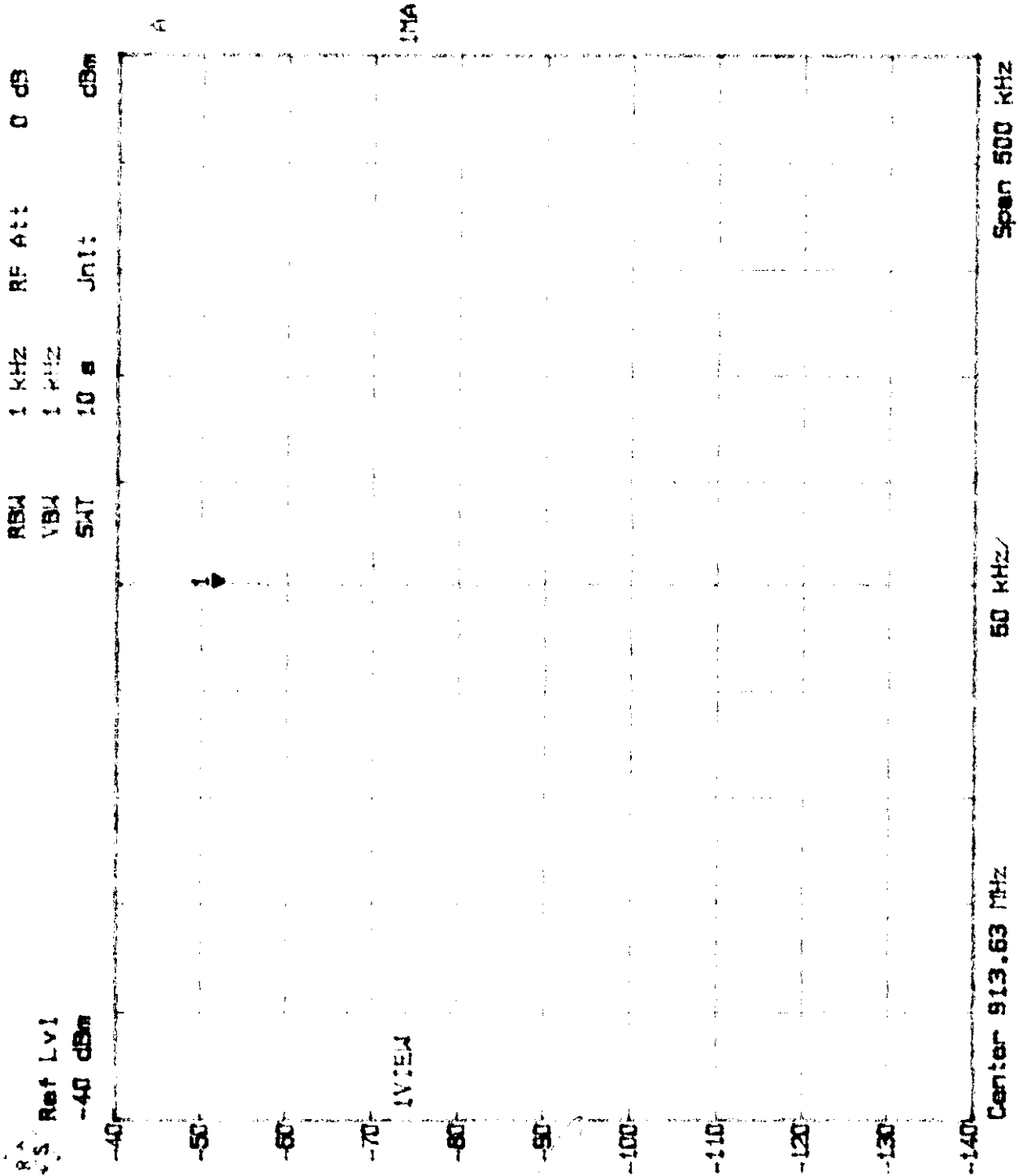


Date: 10.MAR.98 17:35:46

BMIBS

Base station TX

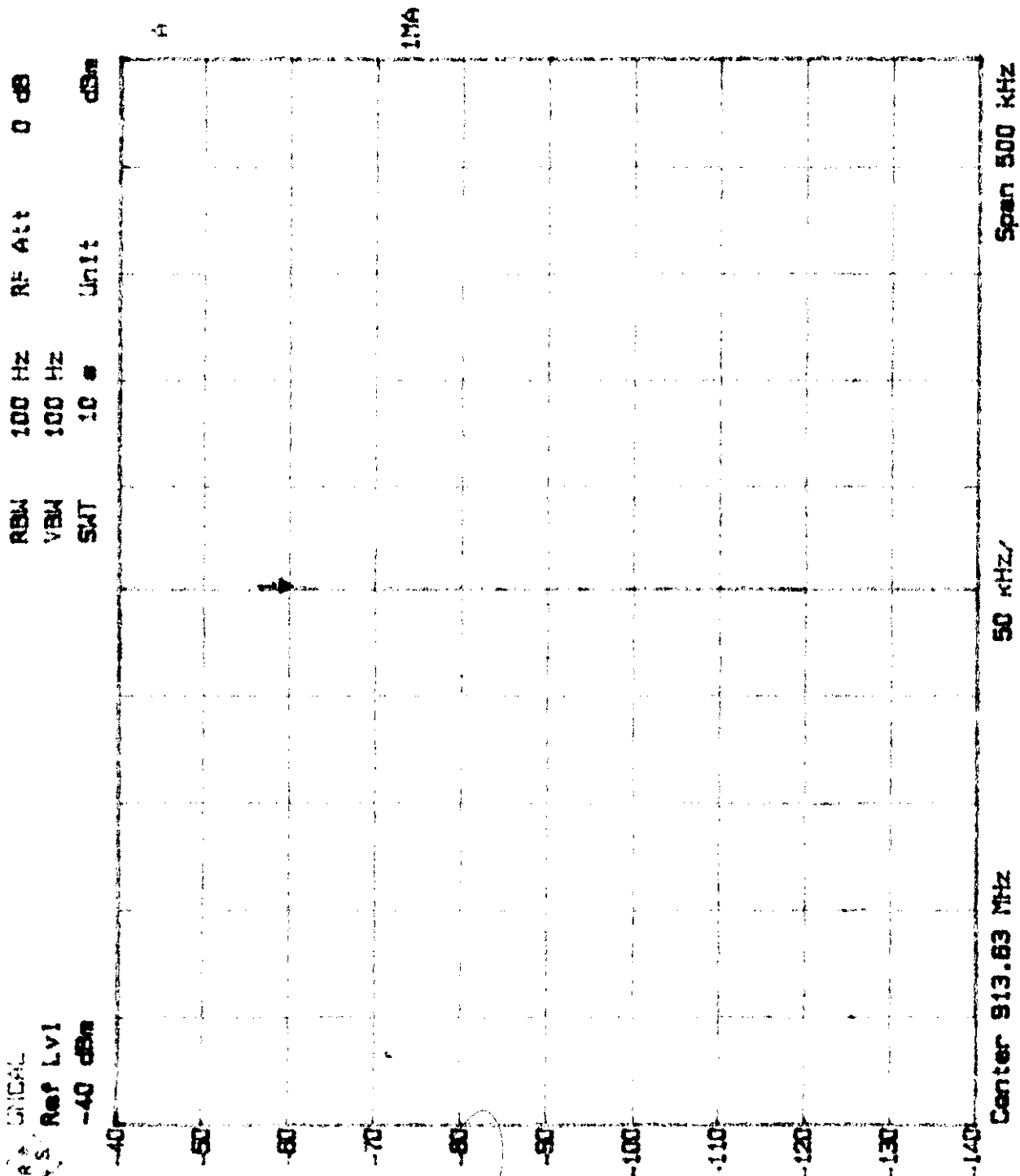
FCC ID: NX1E86B



B721B73

Base station TX

FCC ID: NX1E86B



Date: 10.MAR.98 17:25:30

B 13 B 13