

EMISSION -- TESTREPORT

Testreport file no. : T 20558-1-01 KJ Date : November 27, 2001
of issue

Model / Type No. : MICROSCAN

Kind of product : Radio Frequency Identification

Applicant : DTE Automation GmbH

Manufacturer : DTE Automation GmbH

Licence holder : DTE Automation GmbH

Address : Heidestrasse 38
32051 Herford, Germany

Test result accrdg.
to the regulation(s)
at page 3

POSITIVE

This testreport with appendix consists of 32 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 - Group 2

- o - class A

- 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

- - Part 15 Subpart C (15.209)

- o - Part 15 Subpart C (15.231)

ADDRESS OF THE TEST LABORATORY

- - MIKES BABT PRODUCT SERVICE GmbH
Ohmstrasse 2-4
D - 94342 Strasskirchen

- - _____

ENVIRONMENTAL CONDITIONS

Temperature: 15-35 ° C

Humidity 45-60 %

Atmospheric pressure 860-1060 mbar

POWER SUPPLY SYSTEM UTILIZED

Power supply system : Unom = 5 V DC

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 ± 4 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 EuT is a transponder read/write device.

Number of received/tested samples: 1 / 1

Serial Number: 01516

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.

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

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 FCC limits or 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.

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."

For detailed description of each measurement please refer to section testresults.

DISCOVERY OF WORST CASE MEASUREMENT CONDITION:

The MICROSCAN is designed for the operation on the fixed transmitter frequency range of approx. 133.7 kHz to 134.7 kHz.

To find out the worst case conditions for the complete measurement the following tests have been performed:

- Measurement of the radiated fieldstrength of the operating frequency measured in permanent operation mode in the specified channel. This measurement have been performed in order to find out the maximum transmitted fieldstrength of the MICROSCAN.
- Measurement of the radiated spurious emissions measured in permanent operation mode in the specified channel. This measurement have been performed in order to find out the maximum spurious emissions of the MICROSCAN.

Based on this testresults, the measurements have been performed completely on the specified channel. This testresults are documented in the following sections of the testreport.

TEST RESULT**CONDUCTED EMISSIONS - 10/150 kHz - 30 MHz**

■ - Test not applicable

Testlocation :

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

For TEST EQUIPMENT USED please refer to ATTACHMENT B: -----

Description of Measurement

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

To convert between dBμV and μV, the following conversions apply:

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

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

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 50Ω /50 μH (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.

Testresult

The requirements are

O - MET

O - NOT MET

Min. limit margin

_____ dB at _____ MHz

Max. limit exceeding

_____ dB at _____ MHz

Remarks: NOT APPLICABLE

SPURIOUS EMISSION

Spurious emissions from the EUT are measured in the frequency range of 9 kHz to 30 MHz using a tuned receiver and a shielded loop antenna. The antenna was positioned 3, 10 or 30 meters horizontally from the EUT. Measurements have been made in all three orthogonal axes and the shielded loop antenna was rotated to locate the maximum of the emissions.

Spurious emissions from the EUT are measured in the frequency range of 30 MHz 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, remeasurement of results which may be critical will be repeated in average mode. 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.

SPURIOUS EMISSION (MAGNETIC FIELD) 9 kHz - 30 MHz

o - Test not applicable

- o - in a shielded room
- - in a Open-site 1
and
- - in a testdistance of 3 meters.
- - in a testdistance of 10 meters.
- - in a testdistance of 30 meters.

For TEST EQUIPMENT USED please refer to ATTACHMENT B: SER1

Description of Measurement

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 result then has to be compared with the relevant FCC limit.

The resolution bandwidth during the measurement is as follows:

9 kHz - 150 kHz: ResBW: 200 Hz

150 kHz - 30 MHz: ResBW: 10 kHz

Example:

Frequency (MHz)	Level (dB μ V)	+	Factor (dB)	=	Level (dB μ V/m)	Limit (dB μ V/m)	=	Delta (dB)
1.705	5	+	20	=	25	30	=	5

Testresult in detail:

Testdistance 3 m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]
402.7	27.2	19.8	26.2	20	47.2	39.8	46.2	95.5
671.1	19.0	11.3	18.4	20	39.0	31.3	38.4	71.1
935.6	13.8	5.7	14.0	20	33.8	25.7	34.0	68.2
1207.9	9.5	1.2	10.9	20	29.5	21.2	30.9	66.0
1476.4	7.2	-1.3	8.8	20	27.2	18.7	28.8	64.2

Testdistance 10 m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]
402.7	<0	<0	<0	20	<20	<20	<20
671.1	<0	<0	<0	20	<20	<20	<20
935.6	<0	<0	<0	20	<20	<20	<20
1207.9	<0	<0	<0	20	<20	<20	<20
1476.4	<0	<0	<0	20	<20	<20	<20

Testdistance 30 m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]
402.7	<0	<0	<0	20	<20	<20	<20	55.5
671.1	<0	<0	<0	20	<20	<20	<20	31.5
935.6	<0	<0	<0	20	<20	<20	<20	28.2
1207.9	<0	<0	<0	20	<20	<20	<20	26.0
1476.4	<0	<0	<0	20	<20	<20	<20	24.2

The requirements are

■ - MET

○ - NOT MET

Min. limit margin

32.7 dB

671.1 kHz

Min. limit margin

_____ dB

_____ kHz

Remarks: The limits are kept.

The measurement was performed up to the 10th harmonic.

SPURIOUS EMISSIONS (electric field) 30 MHz - 1000 MHz**■ - Test not applicable**

- o - Open-site 1
- o - Open-site 2

- o - 3 meters
- o - 10 meters
- o - 30 meters

For TEST EQUIPMENT USED please refer to ATTACHMENT B: -----

Description of Measurement

The final level, expressed in dB μ V/m, is arrived by taking the reading from the EMI receiver (Level dB μ V) and adding the correction factors and cable loss factor (Factor dB) to it. This is done automatically in the EMI receiver, where the correction factors are stored. This result then has the FCC or 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	Level	+	Factor	=	Level	Limit	=	Delta
(MHz)	(dB μ V)		(dB)		(dB μ V/m)	(dB μ V/m)		(dB)
719	75	+	32.6	=	107.6	110	=	-2.4

Frequency [MHz]	L: PK [dB μ V]	L: AV [dB μ V]	L: QP [dB μ V]	Correct. [dB]	L: PK [dB μ V/m]	L: AV [dB μ V/m]	L: QP [dB μ V/m]	Limit [dB μ V/m]

Testresult

The requirements are

O - MET

O - NOT MET

Min. limit margin

_____ dB

_____ MHz

Min. limit margin

_____ dB

_____ MHz

Remarks: NOT APPLICABLE.

Transmission frequency 134.24 kHz.

SPURIOUS EMISSION 1 GHz - 18 GHz

■ - Test not applicable

Testlocation :

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

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

For TEST EQUIPMENT USED please refer to ATTACHMENT B: -----

Description of Measurement

The final level, expressed in dBµV/m, is arrived by taking the reading from the Spectrumalyzer in dBµV and adding the correction factors of the test setup incl. cables.

Example of the correction value at 1.8 GHz

Level reading at 1.8 GHz	Correction EMCO 3115	correction Amplifier AWT 4534 + cable	Correction factor (summarized)	corrected level
56 dBµV	+27.3 dB	-41.2 dB	-15.8 dB	42.1 dBµV/m

Testresult in detail:

Frequency [MHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]

Testresult

The requirements are

O - MET

O - NOT MET

Min. limit margin

_____ dB

_____ MHz

Min. limit margin

_____ dB

_____ MHz

Remarks: NOT APPLICABLE

Transmission frequency 134.24 kHz.

FIELD STRENGTH OF THE FUNDAMENTAL WAVE

○ - Test not applicable

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

For TEST EQUIPMENT USED please refer to ATTACHMENT B: CPR1

Description of Measurement

The final level, expressed in dB μ V/m, is arrived by taking the reading from the EMI receiver (Level dB μ V) and adding the correction factors and cable loss factor (Factor dB) to it. This is done automatically in the EMI receiver, where the correction factors are stored. This result then has the FCC or 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	Level	+	Factor	=	Level	-	Limit	=	Delta
(MHz)	(dB μ V)		(dB)		(dB μ V/m)		(dB μ V/m)		(dB)
315	45	+	22.5	=	67.5	-	74.3	=	-6.8

Testresult in detail:

Testdistance 3 m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]
134.24	61.5	53.5	59.7	20	81.5	73.5	79.7	105.1

Testdistance 10 m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]
134.24	37.4	28.8	33.5	20	57.4	48.8	53.5

Testdistance 30 m

Frequency [kHz]	L: PK [dBµV]	L: AV [dBµV]	L: QP [dBµV]	Correct. [dB]	L: PK [dBµV/m]	L: AV [dBµV/m]	L: QP [dBµV/m]	Limit [dBµV/m]
134.24	<20	<20	<20	20	<40	<40	<40	65.1

Testresult

The requirements are

■ - MET

○ - NOT MET

Min. limit margin

31.6 dB134.24 kHz

Min. limit margin

_____ dB

_____ kHz

Remarks: The limits are kept.

**CONDUCTED POWER OF THE FUNDAMENTAL WAVE MEASURED
ON THE ANTENNA TERMINALS**

■ - Test not applicable

Testlocation :

- o - Shielded room no. 1
- o - 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
- o - Climatic test chamber VLK

For TEST EQUIPMENT USED please refer to ATTACHMENT B: _____

Description of Measurement

The conducted power of the fundamental wave measured on the antenna terminals in a climatic test chamber. 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.

Testresult

The requirements are

O - MET

O - NOT MET

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

Remarks: NOT APPLICABLE

EQUIPMENT UNDER TEST

Operation - mode of the EUT.:

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

- o - Standby
- o - Testprogram (H - Pattern)
- o - Testprogram (color bar)
- o - Testprogram (customer specific)
- - Transmit in the frequency range from 133.7 kHz to 134.7 kHz.
- o - _____
- o - _____

Configuration of the equipment under test:

Following periphery devices and interface cables were connected during the measurement:

- o - _____ Type : _____
- o - _____ Type : _____
- o - _____ Type : _____
- o - _____ Type : _____
- o - _____ Type : _____
- o - _____ Type : _____
- - unshielded power cable
- o - unshielded cables
- o - shielded cables MPS.No.:
- o - customer specific cables
- o - _____
- o - _____

SUMMARY

GENERAL REMARKS:

The product MICROSCAN has been tested on the following frequency:
TX-Mode: 134.2 kHz

The unit measurements mets also the bandwidth requirements.

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 : April 19, 2001

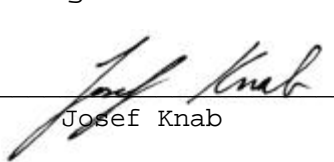
Testing End Date : November 22, 2001

- MIKES BABT PRODUCT SERVICE GmbH -

Test-engineer



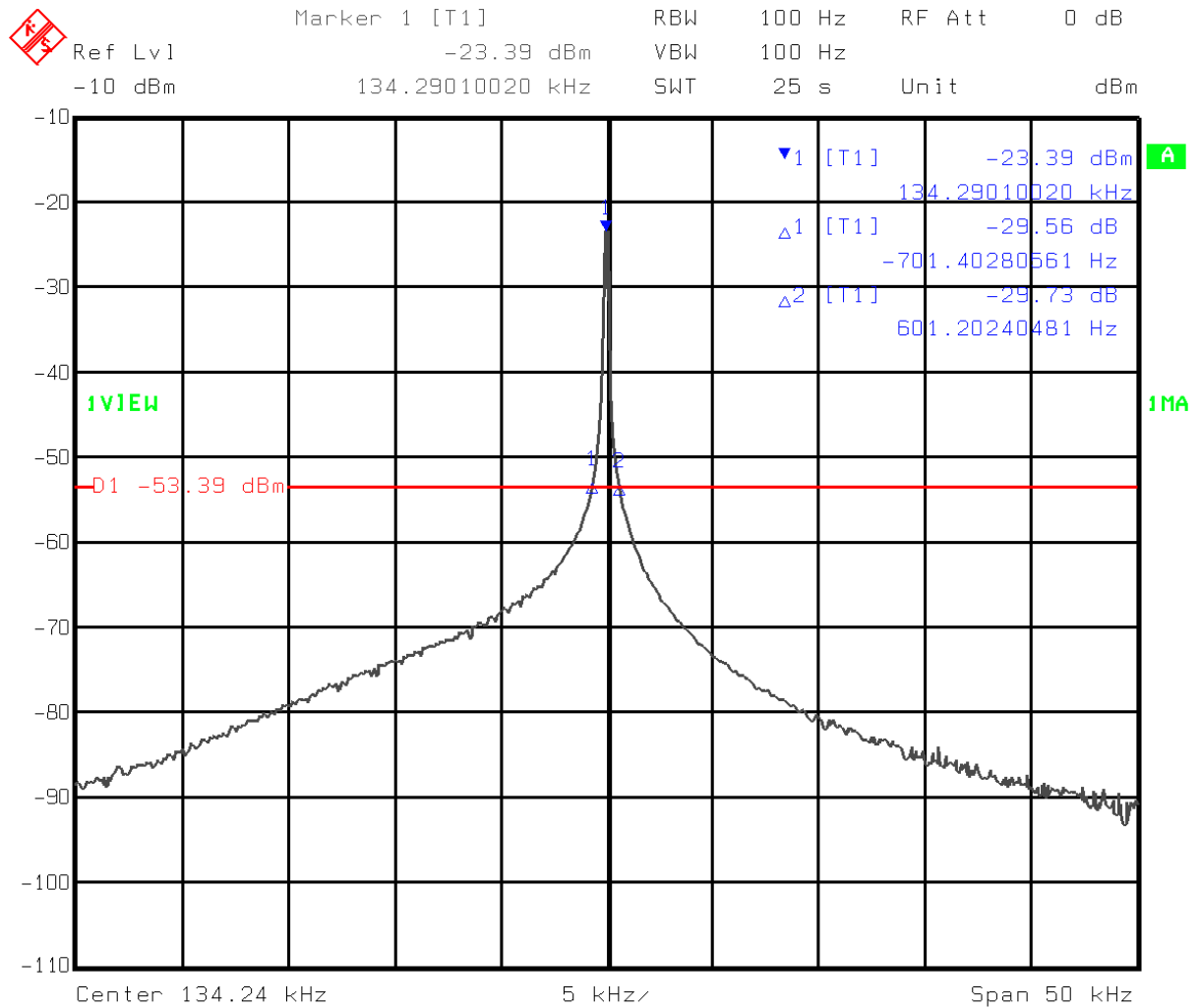
Günter Mikes
Dipl.-Ing.(FH)



Josef Knab

MICROSCAN

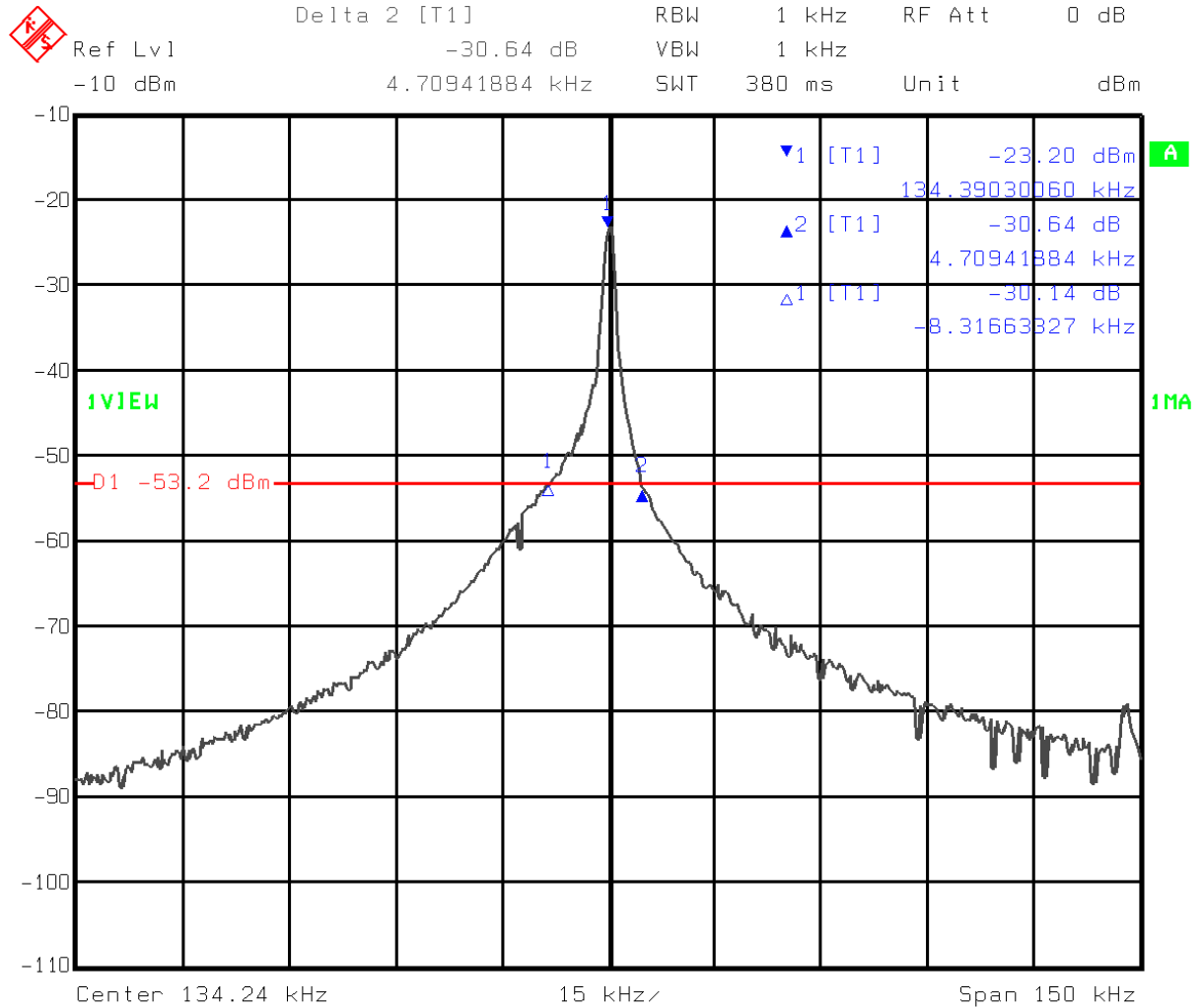
File-No. T 20558-01 KJ



Title: FCC ID: PMF-MI-TR-201
Comment A: MICROSCAN
Bandwidth = 1.3 kHz
Date: 8.MAY.2001 13:54:07

MICROSCAN

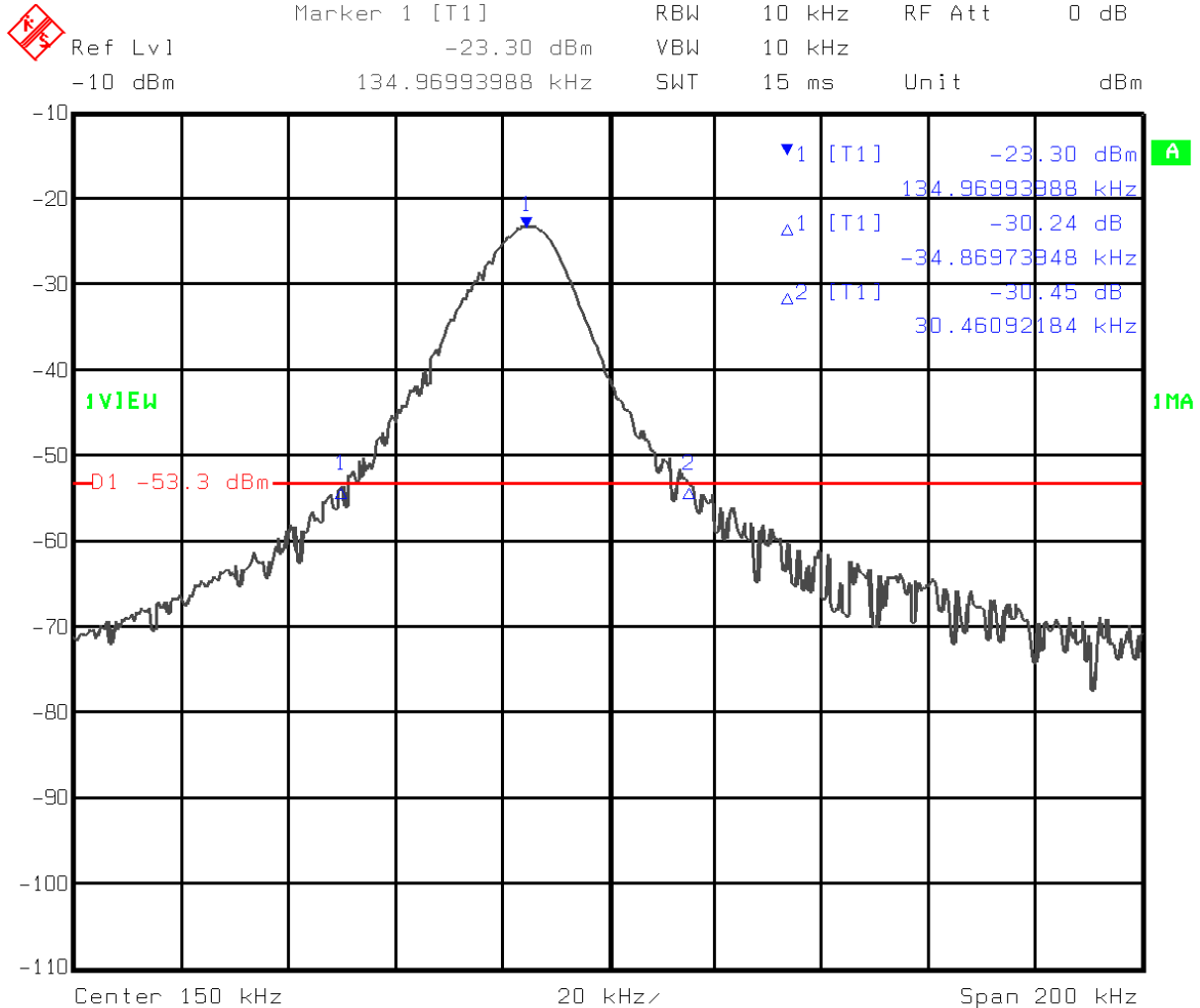
File-No. T 20558-01 KJ



Title: FCC ID: PMF-MI-TR-201
 Comment A: MICROSCAN
 Bandwidth = 13.2 kHz
 Date: 8.MAY.2001 13:59:06

MICROSCAN

File-No. T 20558-01 KJ



Title: FCC ID: PMF-MI-TR-201

Comment A: MICROSCAN

Bandwidth = 65.3 kHz

Date: 8.MAY.2001 14:07:53

Attachment : B

List of Test Equipment

All test instruments used, in addition to the test accessories, are calibrated and verified regularly.

Test Report No: T 20558-1-01 KJ
Beginning of Testing: 22-November-2001

Test ID	Model Type	Kind of Equipment	Manufacturer	Equipment No.
CPR1	FMZB 1516	Antenna	Schwarzbeck G.	04-07/62-90-018
	ESHS 30	Test Receiver	Rohde & Schwarz München	04-07/63-92-045
SER1	FMZB 1516	Antenna	Schwarzbeck G.	04-07/62-90-018
	ESHS 30	Test Receiver	Rohde & Schwarz München	04-07/63-92-045

CONSTRUCTIONAL DATAFORM FOR TESTING OF RADIO EQUIPMENT

Licence holder:	DTE Automation GmbH		
Address:	Heidestrasse 38, 32051 Herford, Germany, Tel. +49 5221 101 2200		
Manufacturer:	DTE Automation GmbH		
Address:	Heidestrasse 38, 32051 Herford, Germany, Tel. +49 5221 101 2200		
Type:	Radio Frequency Identification		
Model:	MICROSCAN		
Serial-No.:	01516	Protection class:	IP43

Additional informations to the above named model:

Antenna:	transmitter:	Type: Air coil 47 uH +/- 5 % @ 134.2 kHz +/- 0.5 kHz	
	receiver:	Length/size: 40.7 mm x 15.2 mm x 1.4 mm	
Power supply of the transmitter:	Type:	Type: same	
		Length/size:	
		5 V linear regulator	nominal voltage: 5 V
			lowest voltage: 4.5 V
			highest voltage: 5.5 V
Power supply of the receiver:			current consumption
	Type:	nominal voltage: 5 V	
		MICROSCAN total	current consumption 0.150 A

Ancillary equipment:

Description:	External Power Supply	Type:	UL listed Direct Plug-In Unit	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
Interface & Power Supply	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	2 m	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> yes <input type="checkbox"/> no
	<input type="checkbox"/> yes <input type="checkbox"/> no		<input type="checkbox"/> yes <input type="checkbox"/> no

☐ If applicable, if necessary complete overleaf

Page D1

Type designation: MICROSCAN Radio Frequency Identifier			
Name and type designation of individual units comprising the radio equipment: Micro-reader RI-STU-MRD1 (vendor Texas Instruments)			
Type of equipment:			
<input type="checkbox"/> Radiotelephone equipment	<input type="checkbox"/> Remote-control equipment	<input type="checkbox"/> Radiomaritime equipment	<input 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 equipm.	<input checked="" type="checkbox"/> Short Range Device
<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:			
	Transmitter-receiver	Transmitter	Receiver
Frequency range	134.2 kHz +/- 0.5 kHz		
Maximum no. of channels	1		
Channel spacing			
Class of emission (type of modulation)	134K2 P0D		
Maximum RF output power			
Maximum effective radiated power (ERP)	40 dBμA/m at 10m		
Output power variable	no		
Channel switching frequency range			
Method of frequency generation	<input type="checkbox"/> Synthesizer <input checked="" type="checkbox"/> Crystal <input type="checkbox"/> Other		
Frequency generation TX	17.177 MHz		
Frequency generation RX	17.177 MHz		
IF	1st IF	2nd IF	3rd IF
Integral selective calling			
Audio-frequency interface level at external data socket			
Modes of operation	<input type="checkbox"/> Duplex mode <input checked="" type="checkbox"/> Semi-duplex mode <input type="checkbox"/> Simplex mode		
Power source	<input checked="" type="checkbox"/> Mains <input type="checkbox"/> Vehicle-regulated <input type="checkbox"/> Integral		
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"/>		
Test specifications: FCC Part 15.209			

O If applicable, if necessary complete overleaf

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Declarations:

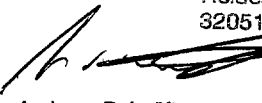
- We declare that the above information are correct and the named model was supplied with the maximum configuration to the accredited test laboratory.

Herford, Germany
12 April, 2001

place of issue

DTE Automation GmbH

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Andreas Rehsöft
Executive Director of Engineering

Seal and signature of applicant