

TEST REPORT



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Reg. no. 19

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*Measurements of radio frequency interference from
TallyCom+ IIF-4 installed in Tally printer T2170.
Performed for i-data International A/S*

Project no.: K221127-1

Date: 2000-01-24



Title Measurements of radio frequency interference from
TallyCom+ IIF-4 installed in Tally printer T2170

Test objects TallyCom+ IIF-4, TypeNo: x62 512

Report no. DANAK-194911

Project no. K221127-1

Date of test 2000-01-21 and 2000-01-24

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Manufacturer i-data International A/S

Specifications FCC part 15, Subpart B, class B demonstrated by compliance with EN 55022:1994, class B.

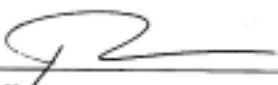
Results The emission from the TallyCom+ IIF-4 installed in the Tally printer T2170 was below the limits given in the above specifications.

Test personnel Henrik Egeberg Nielsen
Jesper Nielsen

..... DELTA

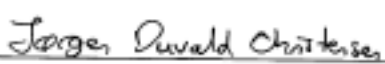
Date 2000-01-24

Project manager



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Responsible



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DELTA Electronics Testing

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1. Summary of test results

The results of the emission tests can be summarised as follows:

Emission tests	FCC part 15 Subpart B class B demonstrated by compliance with EN 55022:1994, class B / CISPR 22:1993, class B
Conducted emission, AC mains	Passed
Radiated electromagnetic field	Passed

Abbreviations : Passed : The emission was below the limit.
 Not done : No test was performed.
 N/A : Not applicable.
 Not relevant : The test was not relevant for the test object.

The test results relate only to the specimen tested.

2. *Test specimen*

Category	:	Card for printer
Manufacturer	:	i-data International A/S
Model/Type	:	TallyCom+ IIF-4
Part no.	:	X62 512
Serial no.	:	-
Supply voltage	:	Supplied from printer
Operational mode	:	The LapTop PC was continuously pinging the TallyCom+ IIF-4 printer card.
Comments	:	The TallyCom+ IIF-4 was built into the Tally printer 3.1.2.

3. General test conditions

3.1 Test set-up

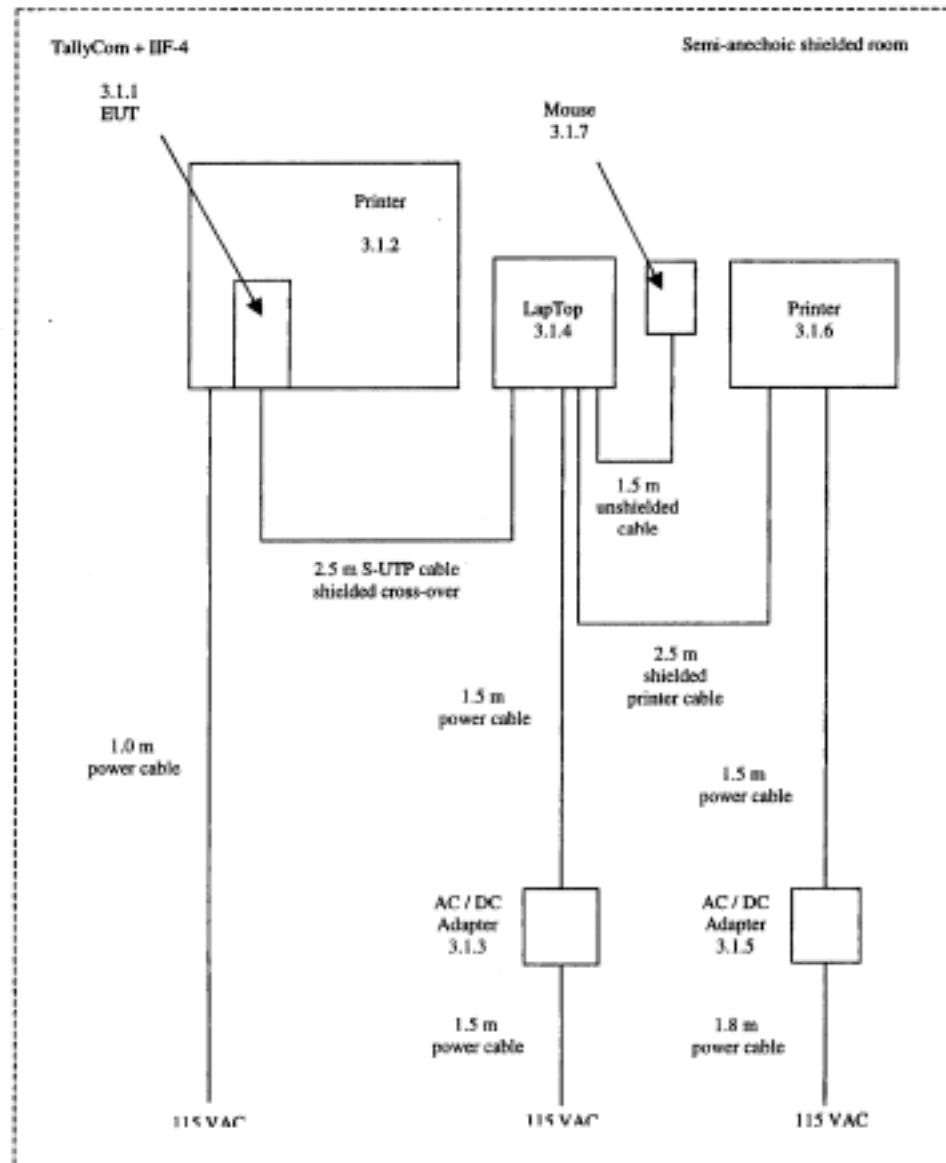


Fig. 1 Test set-up including test object and peripheral equipment.

The complete system used during the tests consisted of the following units:

- 3.1.1 TallyCom+ IIF-4 EUT**
- Manufacturer : i-data International A/S
Model/type : TallyCom+ IIF-4
Part no. : X62 512
Serial no. : -
FCC ID. : -
- 3.1.2 Printer**
- Manufacturer : Tally
Model/type : T2170
Part no. : -
Serial no. : 2900079
FCC ID. : EUT2155-70
- 3.1.3 AC / DC Adapter**
- Manufacturer : Hewlett Packard
Model/type : AC / DC Adapter
Part no. : F1454A
Serial no. : EOD9942150572
FCC ID. : -
- 3.1.4 LapTop**
- Manufacturer : Hewlett Packard
Model/type : OmniBook
Part no. : 4150
Serial no. : FR94701521
FCC ID. : DOC
- 3.1.5 AC / DC Adapter**
- Manufacturer : Hewlett Packard
Model/type : AC Power Adapter
Part no. : C6409-60014
Serial no. : T5838041928
FCC ID. : -

3.1.6 Printer

Manufacturer : Hewlett Packard
Model/type : Deskjet 895 Cxi
Part no. : C6410A
Serial no. : SG89A2W2HT
FCC ID. : DOC

3.1.7 Mouse

Manufacturer : Logitech
Model/type : M-C48
Part no. : 811375
Serial no. : LZA74222949
FCC ID. : DZL211121

4. Tests and results

4.1 Conducted emission, AC mains (FCC, class B / EN 55022, class B)

	Requirements	
Specification	FCC Rules and Regulations:1997, part 15, subpart B, class B, demonstrated by compliance with EN 55022:1994, class B	
Test method	CISPR 22:1993 + A1:1995 + A2:1996	
Frequency range	0.15 - 30 MHz	
Test set-up	ANSI C63.4:1992	
Limit: (quasi-peak)	0.15-0.50 MHz: (decreasing lin. with the logarithm of freq.) 0.50-5 MHz: 5-30 MHz:	66-56 dBμV 56 dBμV 60 dBμV
Limit: (average)	0.15-0.50 MHz: (decreasing lin. with the logarithm of freq.) 0.50-5 MHz: 5-30 MHz:	56-46 dBμV 46 dBμV 50 dBμV
Test record sheets and photos		
Annex 2		

Results:

The emission was within the specified limits.

Comments:

The TallyCom+ IIF-4 was powered from the Tally printer.
 Printer supply power was 115 VAC.

4.2 Radiated electromagnetic field (FCC, class B / EN 55022, class B)

	Requirements	
Specification	FCC Rules and Regulations:1997, part 15, subpart B, class B, demonstrated by compliance with EN 55022:1994, class B	
Test method	CISPR 22:1993 + A1:1995 + A2:1996	
Test set-up	ANSI C63.4:1992	
Measuring distance	10 m	
Frequency range	30 - 1000 MHz	
Limit:(quasi-peak)	30-230 MHz:	30 dB μ V/m
	230-1000 MHz:	37 dB μ V/m
Test record sheets and photos	Annex 3	

Results:

The emission was within the specified limits.

Comments:

The TallyCom+ IIF-4 was powered from the Tally printer.
 Printer supply power was 115 VAC.

Annex 1

List of instruments

(1 page)



LIST OF INSTRUMENTS

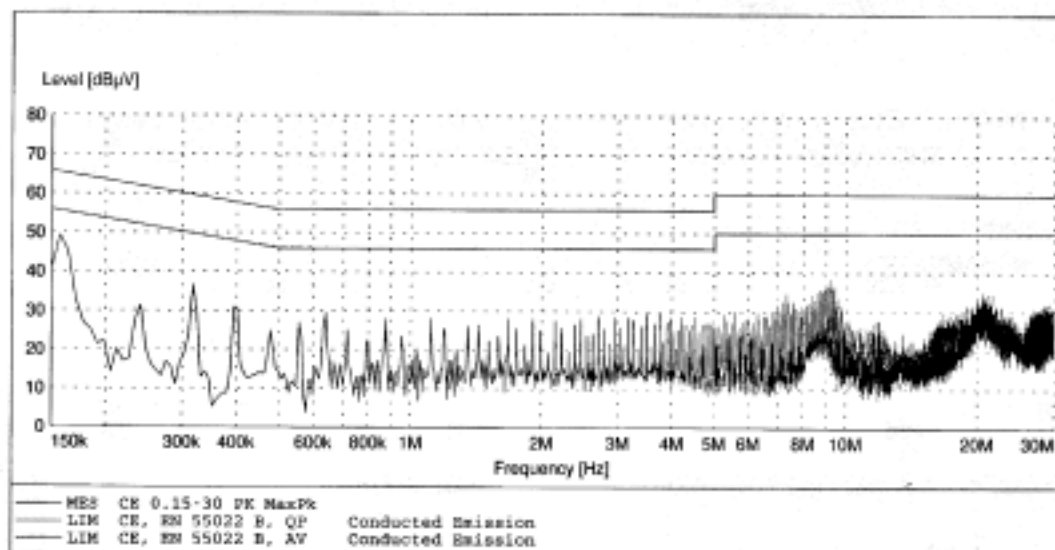
EC NO.	INSTRUMENT	MANUFACTURER	TYPE
29797	BILOG ANTENNA, 30-1000 MHz	CHASE	CBL 6111A
29301	ARTIFICIAL MAINS NETWORK	ROHDE & SCHWARZ	ESH2-Z5
29916	AUTOMATIC EMI RECEIVER	ROHDE & SCHWARZ	ESCS-30
29861	EMI-SOFTWARE Ver. 1.60	ROHDE & SCHWARZ	ES-K1

Annex 2

***Test record sheets and photos regarding
conducted emission, AC mains (FCC class B / EN 55022 class B)***

(3 pages)

K22: 862 512
 Manufacturer: T-Data International A/S
 Operating Condition: Line no.: Neutral, 115 VAC
 Test Site: EMC-5
 Operator: REN - K221127
 Test Specification: EN 55022 B
 Comment: Sheet 14
 Start of Test: 2000-01-24



MFR: X82 512
 Manufacturer: T-Data International A/S
 Operating Condition: Line no.: Line 1, 115 VAC
 Test Site: EMC-5
 Operator: JDS - R221127
 Test Specification: EN 55022 B
 Comment: Sheet 15
 Start of Test: 2008-01-24

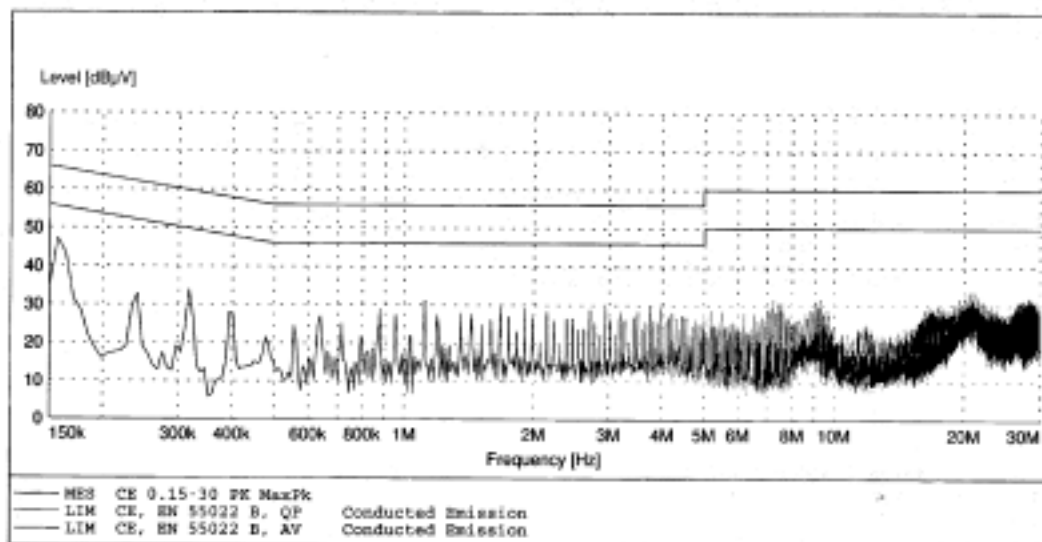




PHOTO A2.1

(7 pages)

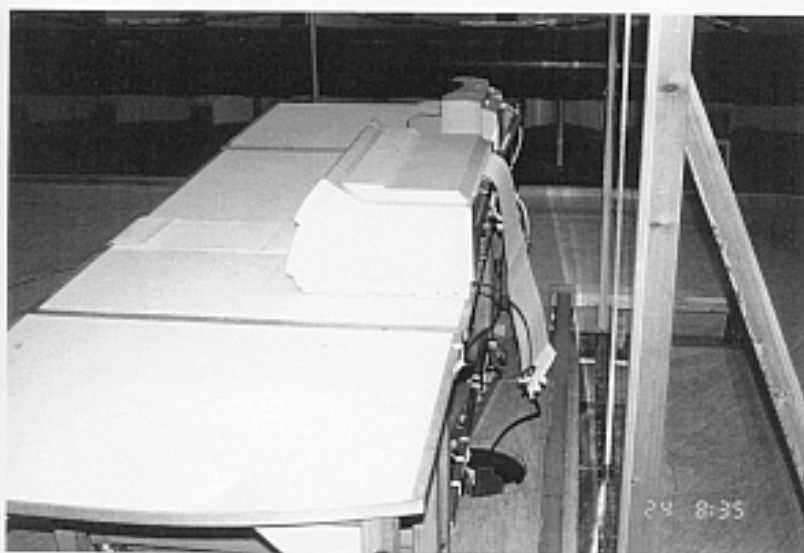


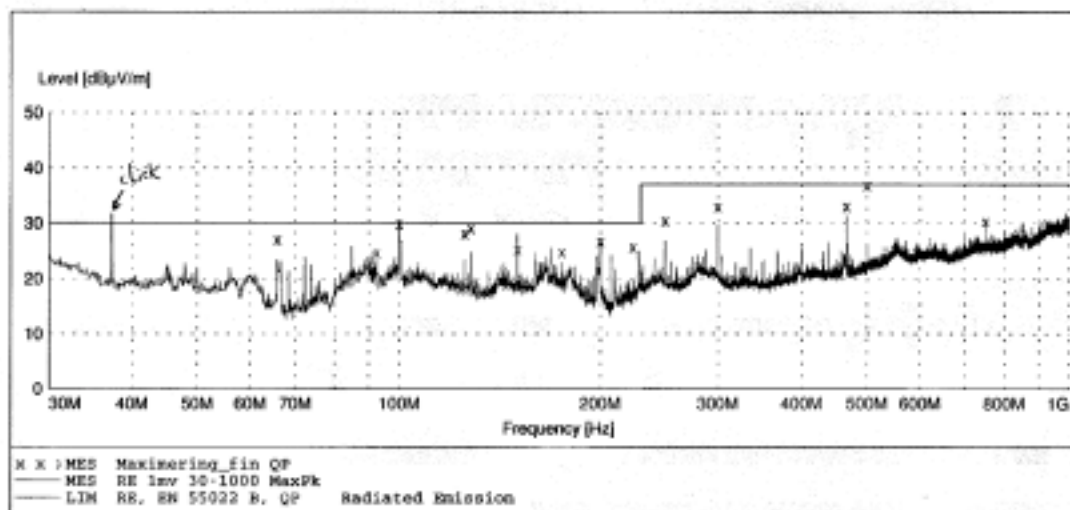
PHOTO A2.2

Annex 3

**Test record sheets and photos regarding
radiated electromagnetic field (FCC, class B / EN 55022, class B)**

(3 pages)

EUT: X62 512
 Manufacturer: I-Data International A/S
 Operating Condition: Ant. 1 meter vertical, 115 VAC
 Test Site: EMC-5
 Operator: JN - K221127
 Test Specification: EN 55022 B
 Comment: Sheet 12
 Start of Test: 2000-01-21



MEASUREMENT RESULT: Maximizing in QP

Frequency MHz	Level dBuV/m	Transd dB	Limit dBuV/m	Margin dB	Height cm	Azimuth deg	Polarisation
65.800000	27.10	5.5	30.0	2.9	400.0	28.00	HORIZONTAL
92.400000	24.70	9.5	30.0	5.3	398.0	25.00	HORIZONTAL
100.000000	29.90	10.4	30.0	0.1	145.0	91.00	VERTICAL
125.000000	28.20	11.9	30.0	1.8	277.0	329.00	HORIZONTAL
127.810000	29.10	11.9	30.0	0.9	327.0	331.00	HORIZONTAL
150.000000	25.30	11.3	30.0	4.7	101.0	35.00	VERTICAL
175.000000	24.80	9.6	30.0	5.2	101.0	18.00	VERTICAL
200.000000	26.80	9.0	30.0	3.2	376.0	173.00	HORIZONTAL
223.680000	25.70	9.8	30.0	4.3	351.0	182.00	HORIZONTAL
250.000000	30.50	12.9	37.0	6.5	400.0	58.00	HORIZONTAL
300.000000	33.00	13.8	37.0	4.0	327.0	202.00	HORIZONTAL
485.900000	33.10	18.2	37.0	3.9	400.0	46.00	VERTICAL
500.000000	36.90	19.1	37.0	0.1	275.0	104.00	VERTICAL
750.000000	30.40	23.6	37.0	6.6	400.0	351.00	VERTICAL

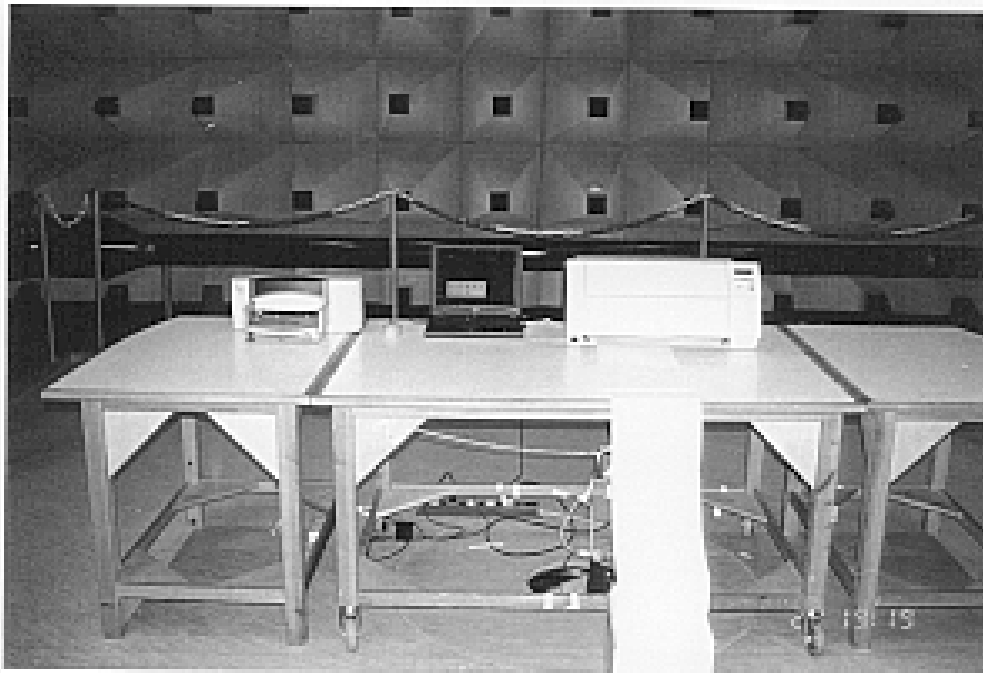


PHOTO A3.1

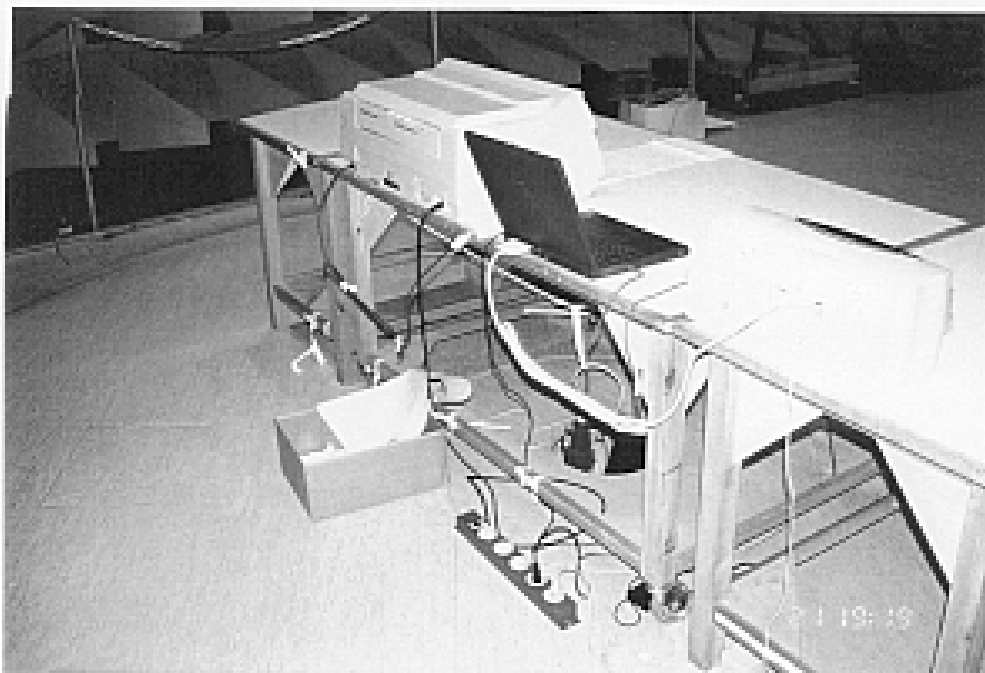


PHOTO A3.2