TEST RESULT SUMMARY

EN 300 330-2 V1.1.1: 2001
Subclauses 7.2, 7.3, 7.4, 8.1

MANUFACTURER'S NAME	Transoma Medical
NAME OF EQUIPMENT	Remote Transceiver (Wand) & ITD
MODEL NUMBER	**LVP-1200 (Remote Transceiver)** **LVP-1000 (ITD)**
TYPE DESIGNATION	**LVP-1200 (Remote Transceiver)** **LVP-1000 (ITD)**
TYPE OF EQUIPMENT	Remote Transceiver (Wand) Transmits Programming instructions to the ITD at 455kHz ITD Transmits Programming Responses and Left Ventricular Pressure Measurements to the Wand at 455kHz or 433MHz
MANUFACTURER'S ADDRESS	4358 West Round Lake Rd. Arden Hills, MN 55112
TEST REPORT NUMBER	NC303901.3
TEST DATE	28 August 2003

According to testing performed at TÜV Product Service Inc, the above-mentioned unit is in compliance with the emission requirements defined in European Telecommunication Standard EN 300 330.

It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications necessary for compliance made during testing on the above mentioned date(s) must be implemented in all production units for compliance to be maintained.

TÜV Product Service Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the emission requirements of European Telecommunication Standard EN 300 330: "Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Short Range Devices (SRD); Technical Characteristics and Test Methods for Radio Equipment in the Frequency Range 9 kHz to 25 MHz and Inductive Loop Systems in the Frequency Range 9 kHz to 30 MHz."

Date: 25 September 2003

Location: Taylors Falls MN USA

Tested By:
G. S. Jakubowski

T. K. Swanson
Test Technician

Not Transferable

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D I R E C T O R Y / SUB-CLAUSE PARAMETER TO BE MEASURED PAGE

The complete list of measurements called for in EN 300 330 is given below.

Transmitter parameters - Ambient temperature .....22°C Relative humidity 46%

Receiver parameters -

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H-FIELD FIELD STRENGTH - SUB-CLAUSE 7.2.1 (Class 1)

EUT = LVP-1200 Remote Transceiver

Rated field strength (maximum) -13.8 dBμA/m at 10 metres

Test conditions	Nominal System Operating Frequency: 455.0 kHz Maximum Transmitter Field Strength (dBμA/m)			
T_{nom}(..22...)°C		Final 10 Metre	10 Metre Limit	
V_{nom}(..12)VDC		-13.8	32.42	
Maximum deviation from rated output under normal test conditions (dB)				
Measurement uncertainty (dBμA/m)	±1			
The noise floor measurement at 10 metres is –16.5dBuA/m.				

EUT = LVP-1000 ITD

Rated field strength (maximum) -35.5 dBμA/m at 10 metres

Test conditions	Nominal System Operating Frequency: 455 kHz Maximum Transmitter Field Strength (dBμA/m)			
T_{nom}(..22...)°C	Final 1 Metre	Final 10 Metre Extrapolated	10 Metre Limit	
V_{nom}(..2.8)VDC	0.8	-35.5	32.2	
Maximum deviation from rated output under normal test conditions (dB)				
Measurement uncertainty (dBμA/m)	±1			
Measurements made at 3 & 10 metres were in the noise floor. Final measurements were made at 1 metre. Level at 1 metre when compared to a 10 metre limit still indicates a passing result. Level at 1 metre when extrapolated to 10 metres using an Inverse Linear Relationship and then compared to the 10 metre limit also indicates a passing result. The noise floor measurement at 10 metres is –16.5dBuA/m.				

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LIMIT SUB-CLAUSE 7.2.1.3

Frequency range - (MHz)	H-field field strength limit (Hf) - dBμA/m at 10 m
0,009 ≤ f < 0,03	72 or per note on loop coil antenna area
0,03 ≤ f < 0,07 0,119≤ f < 0,135	72 at 0,03 MHz descending 3 dB/oct or per note on loop coil antenna area
0,05975 ≤ f <0,06025 0,07≤ f < 0,119	42
0,135 ≤ f < 1,0 1,0 ≤ f < 4,642 4,642 ≤ f < 30	37,7 at 0,135 MHz descending 3 dB/oct 29 at 1,0 MHz descending 9 dB/oct 9
6,765 ≤ f ≤ 6,795 (ISM) 13,553 ≤ f ≤ 13,567 (ISM) 26,957 ≤ f ≤ 27,283 (ISM)	42

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1,2,3

Ambient temperature .....22.°C Relative humidity 46%

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RF CARRIER CURRENT - SUB-CLAUSE 7.2.2 (Class 2)

N/A

RADIATED E-FIELD, FIELD STRENGTH (measured as H-field) - SUB-CLAUSE 7.2.3 (Class 4)

N/A

PERMITTED FREQUENCY RANGE OF MODULATION BANDWIDTH - SUB-CLAUSE 7.3.1

Test not applicable since peak fundamental level is below the spurious emission limit.

CONDUCTED SPURIOUS EMISSIONS (Operating)- SUB-CLAUSE 7.4.2 (Class 3)

N/A

CONDUCTED SPURIOUS EMISSIONS (Standby) - SUB-CLAUSE 7.4.2 (Class 3)

N/A

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TRANSMITTER RADIATED SPURIOUS EMISSIONS (Transmit < 30 MHz) - SUB-CLAUSE 7.4.3

No spurious emissions detected in transmit mode below 30 MHz.

Transmitter operating with normal internal modulation.

LIMIT SUB-CLAUSE 7.4.3.2

State	Frequency 9 kHz ≤ f < 10 MHz	Frequency 10 MHz ≤ f < 30 MHz
Transmit	27 dBμA/m descending 3 dB/oct	-3,5 dBμA/m

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1,2,3

Ambient temperature .....22.°C Relative humidity 46%

TRANSMITTER RADIATED SPURIOUS EMISSIONS (standby < 30 MHz) - SUB-CLAUSE 7.4.3

No spurious emissions detected in standby mode below 30 MHz.

LIMIT SUB-CLAUSE 7.4.3.2

State	Frequency 9 kHz ≤ f < 10 MHz	Frequency 10 MHz ≤ f < 30 MHz
Standby	6 dBμA/m descending 3 dB/oct	-24,5 dBμA/m

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

1,2,3

Ambient temperature .....22.°C Relative humidity 46%

TRANSMITTER RADIATED SPURIOUS EMISSIONS (Transmit > 30 MHz) - SUB-CLAUSE 7.4.4

Spurious Emissions - Effective Radiated Power > 30 MHz

Freq.	Final	Final	Final	Operating Limit	Margin
MHz	dBuV/m	dBm	nW	nW	nW
213.3	28.27	-60.00	1.000	4	3
845.35	34.05	-54.22	3.784	4	0.216
211.66	26.29	-61.98	0.634	4	3.366
67.95	23.8	-64.47	0.357	4	3.643
71.97	23.75	-64.52	0.353	4	3.647
422.67	30.25	-58.02	1.578	250	248.4
166.42	19.55	-68.72	0.13	250	249.87
351.99	24.56	-63.71	0.43	250	249.57
237.29	24.09	-64.18	0.38	250	249.62
383.98	24.07	-64.20	0.38	250	249.62
242.69	24.04	-64.23	0.38	250	249.62
447.98	22.48	-65.79	0.26	250	249.74
479.98	22.3	-65.97	0.25	4	3.75

LIMIT SUB-CLAUSE 7.4.4.2

State	47 MHz to 74 MHz 87,5 MHz to 118 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz	Other Frequencies between 30 to 1000 MHz
Operating	4 nW	250 nW

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

4,5,6,7,8,9,10

Ambient temperature .....22.°C Relative humidity 46%

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TRANSMITTER RADIATED SPURIOUS EMISSIONS (standby > 30 MHz) - SUB-CLAUSE 7.4.4

No spurious emissions detected in standby mode above 30 MHz.

LIMIT SUB-CLAUSE 7.4.4.2

State	47 MHz to 74 MHz 87,5 MHz to 118 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz	Other Frequencies between 30 to 1000 MHz
Standby	2 nW	2 nW

REFERENCE NUMBER(S) OF TEST EQUIPMENT USED (for reference see test equipment listing)

4,5,6,7,8

Ambient temperature .....22.°C Relative humidity 46%

RECEIVER SPURIOUS RADIATION (< 30 MHz) - SUB-CLAUSE 8.1

No spurious emissions detected

RECEIVER SPURIOUS RADIATION (>30 MHz) SUB-CLAUSE 8.1

No spurious emissions detected

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TEST EQUIPMENT

To simplify the identification on each page of the test equipment used, on each page of the test report, each item of test equipment and ancillaries such as cables are identified (numbered) by the Test Laboratory, below.

Ref. No.	Instrument/Ancillary	Type	Manufacturer	Serial No.
01	Loop Antenna	HFH2-Z2	Polarad	879285/036
02	EMI Receiver	ESH-3	Rohde-Schwarz	892473/004
03	Coaxial cable		Polarad	
04	Spectrum Analyzer	8566B	HP	2430A00930
05	Analyzer Display	85662A	HP	2403A08134
06	Quasi-Peak Adapter	85650A	HP	2521A01006
07	Preamplifier	ZHL-1042J	Mini-Circuits	D113001-16
08	Biconicalog Antenna	EM-6917B	Electro-Metrics	106
09	Signal Generator	2520	Wavetek	6271013
10	Dipole Antenna	VHAP	Schwarzbeck	177

ADDITIONAL INFORMATION SUPPLEMENTARY TO THE TEST REPORT

Photographs other than of the test-setup are sent independently from report.

TEST SETUP PHOTOS

Test-setup photo(s):
Radiated Emission

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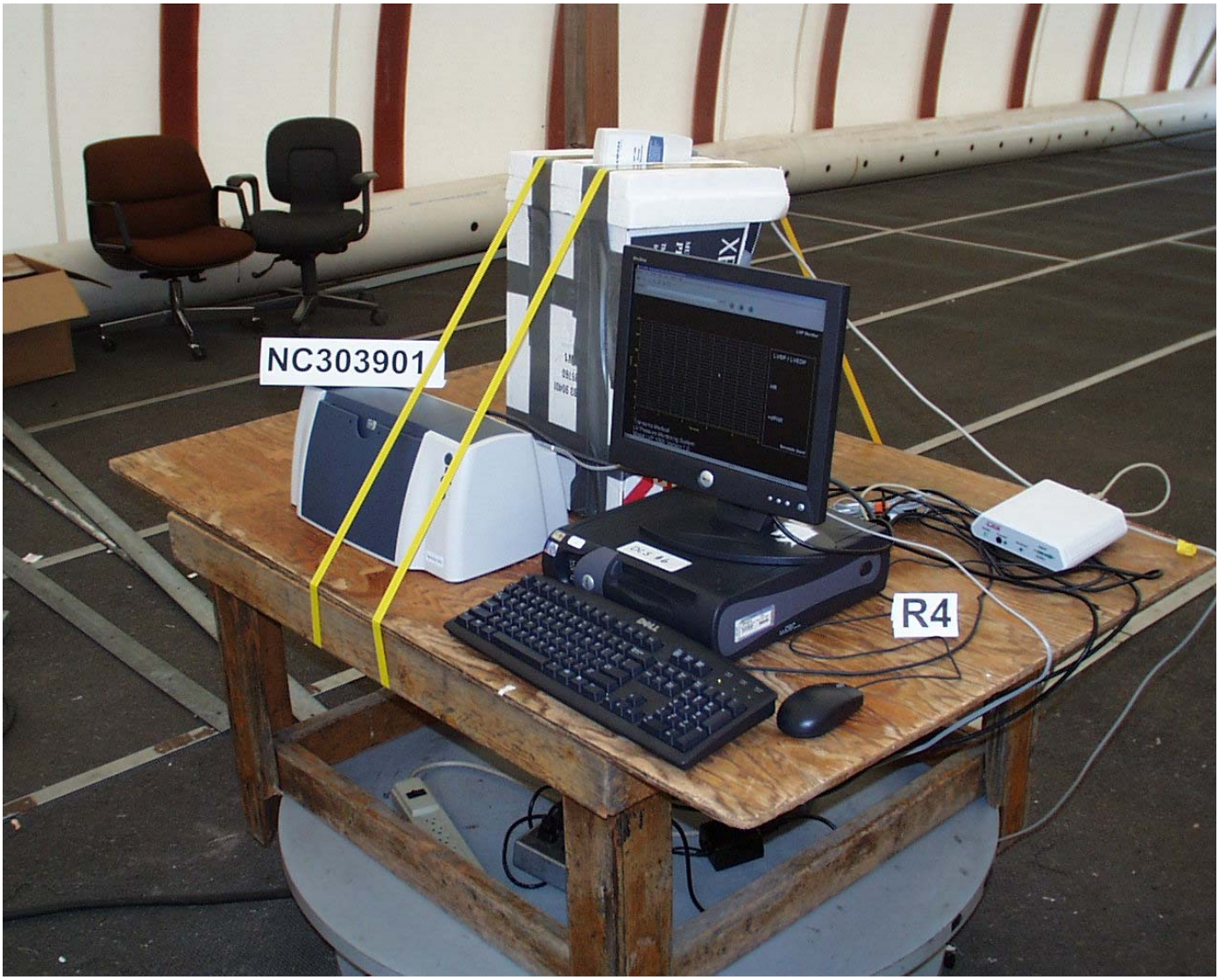
Test-setup photo(s):
Radiated Emission



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Test-setup photo(s):

Radiated Emission

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