



TEST REPORT FROM RADIO FREQUENCY INVESTIGATION LTD.

Test of: Datascope Corp.
Panorama Telepack - 608

To: FCC Part 95 Subpart H: 2002

Test Report Serial No: RFI/MPTB1/RP44457JD02A

This Test Report Is Issued Under The Authority Of Richard Jacklin, Operations Director: 	Checked By: 
Tested By: 	Release Version No: PDF01
Issue Date: 01 December 2003	Test Dates: 31 October 2003 to 07 November 2003

This report is issued in Adobe Acrobat portable document format (PDF). It is only a valid copy of the report if it is being viewed in PDF format with the following security options not allowed: Changing the document, Selecting text and graphics, Adding or changing notes and form fields. Furthermore, the date of creation must match the issue date stated above.

This report may be copied in full. The results in this report apply only to the sample(s) tested.

RADIO FREQUENCY INVESTIGATION LTD

Operations Department

**Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002**

TEST REPORT

S.No. RFI/MPTB1/RP44457JD02A

Page 2 of 30

Issue Date: 01 December 2003

This page has been left intentionally blank.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

Table of Contents

1. Client Information	4
2. Equipment Under Test (EUT)	5
3. Test Specification, Methods And Procedures	7
4. Deviations From The Test Specification	8
5. Operation Of The EUT During Testing	8
6. Summary Of Test Results	9
7. Measurements, Examinations And Derived Results	10
8. Test Results	11
9. Measurement Methods	22
10. Measurement Uncertainty	26
Appendix 1. Test Equipment Used	27
Appendix 2. Test Configuration Drawings	29

Test Of: Datascope Corp.
To: Panorama Telepack - 608
FCC Part 95 Subpart H: 2002

1. Client Information

Company Name:	Datascope Corp.
Address:	Patient Monitoring Division 800 MacArthur Blvd. Mahwah NJ 07430-0619 USA
Contact Name:	Mr J Fidacaro

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

2. Equipment Under Test (EUT)

The following information (with the exception of the Date of Receipt) has been supplied by the client:

2.1. Identification Of Equipment Under Test (EUT)

Brand Name:	Panorama Telepack – 608
Model Name or Number:	0998-00-0191-01
Serial Number:	WTP0016-13
FCC ID	DXXWT0191-00000
Country of Manufacture:	USA
Date of Receipt:	13 October 2003

2.2. Description Of EUT

The equipment under test is a patient worn wireless ECG monitor that forms part of a wireless patient monitor system.

2.3. Modifications Incorporated In EUT

None.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

2.4. Additional Information Related To Testing

Power Supply Requirement:	3.0 V DC Nominal (2 x 1.5 V AA Lithium batteries*)		
Declared Battery End Point Voltage	2.4 V DC		
Intended Operating Environment:	Hospitals		
Equipment Category:	Portable		
Type of Unit:	Transmitter		
Interface Ports:	ECG Connector (x5) RS232 Serial port (<i>service port only for programming of channel by technician</i>)		
Transmitter Frequency Range	608 MHz to 614 MHz		
Transmitter Channels Tested	Channel ID	Channel Number	Channel Frequency (MHz)
	Bottom	1	608.03125
	Top	191	613.96875
Occupied Bandwidth:	9.0 kHz		
Highest Fundamental Frequency:	613.96875 MHz		
Maximum Fundamental Field Strength	90.2 dBµV/m @ 3 metres		

* Note: Fully charged lithium AA batteries measure 1.8 V each, therefore 3.6 V is the maximum supply voltage.

2.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Description:	Patient Simulator
Brand Name:	Netech
Model Name or Number:	MiniSim
Serial Number:	18811
Connected to Port:	ECG Port of EUT (via EUT's ECG leads x 5)

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

3. Test Specification, Methods And Procedures

Reference:	FCC Part 95 Subpart E: 2002 (Technical Regulations)
Title:	Code of Federal Regulations, Part 95 (47CFR95) Personal Radio Services.
Comments:	A description of the test facility used for this test is on file with, and has been accepted by, the Federal Communications Commission as required by Section 2.948 of Federal Rules.
Purpose of Test:	To determine whether the equipment complied with the requirements of the specification for the purposes of certification.

Reference:	FCC Part 95 Subpart H: 2002 (Wireless Medical Telemetry Service)
Title:	Code of Federal Regulations, Part 95 (47CFR95) Personal Radio Services.

Reference:	FCC Part 2 Subpart J: 2002 (Sections 2.1049, 2.1053 and 2.1055)
Title:	Code of Federal Regulations, Part 2 (47CFR2) Subpart J - Equipment Authorization Procedures

The methods and procedures used were as detailed in:

ANSI C63.2 (1987)

Title: American National Standard for Instrumentation - Electromagnetic noise and field strength.

ANSI C63.4 (2001)

Title: American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

ANSI C63.5 (1988)

Title: American National Standard for the Calibration of antennas used for Radiated Emission measurements in Electromagnetic Interference (EMI) control.

ANSI C63.7 (1988)

Title: American National Standard Guide for Construction of Open Area Test Sites for performing Radiated Emission Measurements.

CISPR 16-1: (1999)

Title: Specification For Radio Disturbance and Immunity Measuring Apparatus and Methods. Part 1: Radio Disturbance and Immunity Measuring Apparatus.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

3.1. Definition Of Measurement Equipment

The measurement equipment used complied with the requirements of the standards referenced in the Methods & Procedures section above. Appendix 1 contains a list of the test equipment used.

4. Deviations From The Test Specification

None.

5. Operation Of The EUT During Testing

5.1. Operating Conditions

The EUT was tested in a normal laboratory environment.

During testing, the EUT was powered by 2 x 1.5 V nominal lithium batteries

5.2. Operating Modes

The EUT was tested in the following operating modes, unless otherwise stated.

Fully operational, continuously transmitting ECG data supplied by the MiniSim Patient simulator.

Preliminary radiated spurious pre-scan tests were performed on the highest operating frequency of the EUT (top channel). Final measurements were then performed on the top channel and the bottom channel if an emission was identified. All other tests were performed on the top and bottom channels.

5.3. Configuration And Peripherals

The EUT was tested in the following configuration:

Connected to the Netech MiniSim patient simulator.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

6. Summary Of Test Results

Range Of Measurements	Specification Reference	Port Type	Compliance Status
Transmitter Fundamental Fieldstrength	C.F.R. 47 FCC Part 95 H: 2002 Section 95.1115(a)	Antenna	Complied
Transmitter Occupied Bandwidth	C.F.R. 47 FCC Part 95 H: 2002 Section 95.1115(d)/2.1049	Antenna	Complied
Transmitter Out of Band Radiated Emissions (30.0 MHz to 6.5 GHz)	C.F.R. 47 FCC Part 95: 2002 Section 95.1115(b)/2.1053	Antenna	Complied
Transmitter Band Edge Radiated Emissions	C.F.R. 47 FCC Part 15: 2002 Section 95.1115(b)/2.1053	Antenna	Complied
Transmitter Frequency Stability (Temperature & Voltage Variation)	C.F.R. 47 FCC Part 95: 2002 Section 95.1115(e)/2.1055	Antenna	Complied

6.1. Location Of Tests

All the measurements described in this report were performed at the premises of Radio Frequency Investigation Ltd, Ewhurst Park, Ramsdell, Basingstoke, Hampshire, RG26 5RQ, England.

**Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002**

7. Measurements, Examinations And Derived Results

7.1. General Comments

7.1.1. This section contains test results only. Details of the test methods and procedures can be found in Section 9 of this report.

7.1.2. Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to Section 10 for details of measurement uncertainties.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

8. Test Results

8.1. Transmitter Fundamental Fieldstrength Section 95.1115(a)

8.1.1. The EUT was configured as for transmitter radiated emissions testing as described in Section 9 of this report.

8.1.2. Tests were performed to identify the maximum field strength at 3 metres of the fundamental frequency.

Results:

Channel	Frequency (MHz)	Ant. Pol.	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
Bottom	608.03125	Vert.	90.2	106.0	15.8	Complied
Top	613.96875	Vert.	89.8	106.0	16.2	Complied

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

8.2. Transmitter Occupied Bandwidth: Sections 95.1115(d)/2.1049

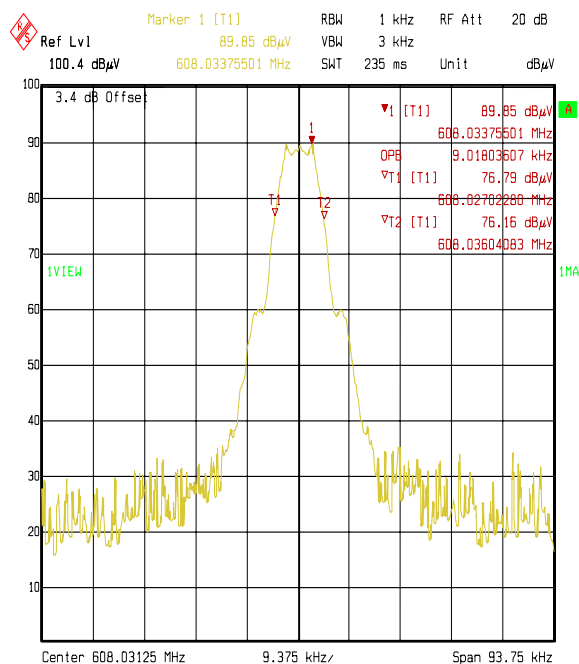
8.2.1. The EUT was configured as for Occupied Bandwidth measurements as described in Section 9 of this report.

8.2.2. Tests were performed to identify the 20 dB bandwidth occupied by the fundamental frequency of the EUT.

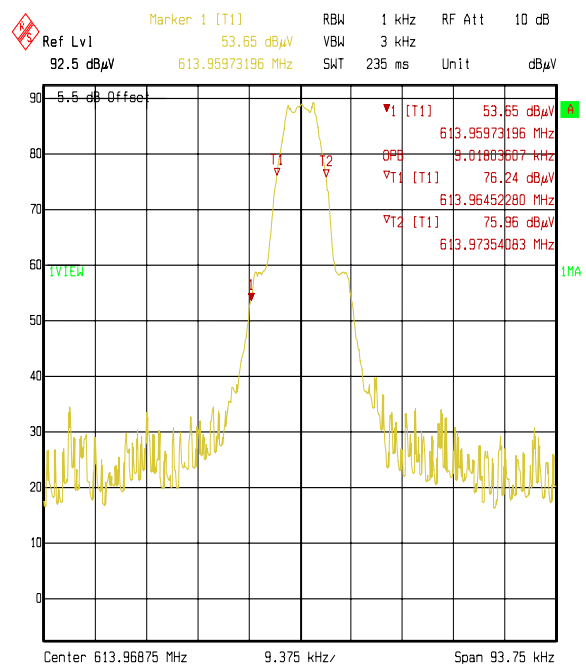
Results:

Channel	Frequency (MHz)	Resolution Bandwidth (kHz)	Video Bandwidth (kHz)	Occupied Bandwidth (kHz)
Bottom	608.03125	1.0	3.0	9.018
Top	613.96875	1.0	3.0	9.018

Note: According to Part 95.1115(c) any emission type appropriate for communications in the Wireless Medical Telemetry Service may be transmitted with the except for video and voice. It can be seen from the Occupied Bandwidth plots shown below that the Modulation Characteristic of the EUT meets the modulation requirements of Part 95.1115 (c).



Comment A: Occupied Bandwidth Bottom Channel WMTS Telepack
GPH/44457JD02/0802
Date: 4.NOV.2003 15:10:13



Comment A: Occupied Bandwidth Top Channel WMTS Telepack
GPH/44457JD02/0801
Date: 4.NOV.2003 14:34:37

Note: The occupied bandwidth is measured using the internal OBW function of the measurement analyser. The analyser automatically configures the measurement bandwidths to make an accurate measurement. The vital data is reported in the upper right portion of the graph. See attached graphs.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

8.3. Transmitter Out of Band Radiated Emissions: Sections 95.1115(b)/2.1053

8.3.1. Electric Field Strength Measurements (Frequency Range: 30 to 1000 MHz)

8.3.1.1. The EUT was configured as for transmitter radiated emissions testing as described in Section 9 of this report.

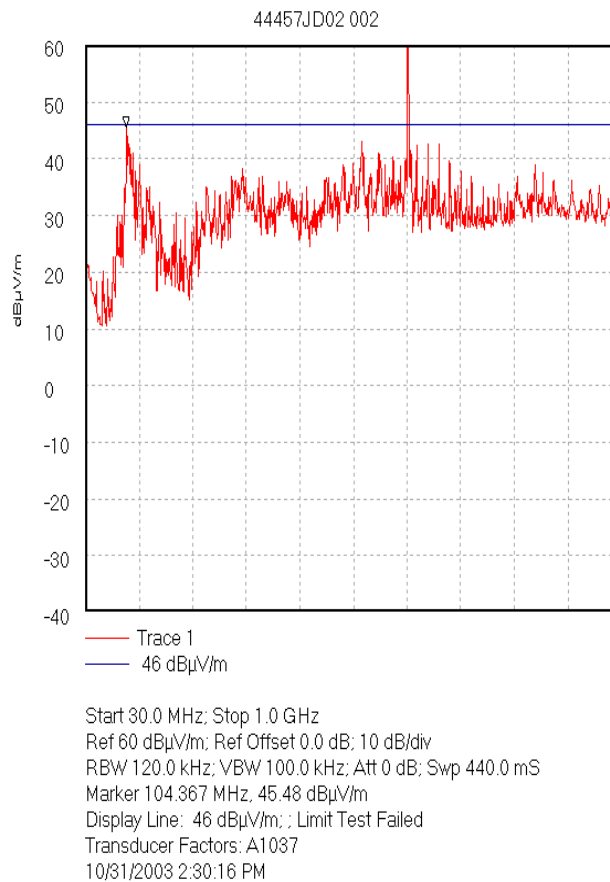
8.3.1.2. Tests were performed to identify the maximum transmitter radiated emission levels.

Results:

Frequency (MHz)	Antenna Polarity	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
104.309	Horiz.	29.7	46.0	16.3	Complied
105.888	Vert.	26.8	46.0	19.2	Complied
107.473	Vert.	27.3	46.0	18.7	Complied
496.822	Vert.	29.0	46.0	17.0	Complied
530.330	Horiz.	33.4	46.0	12.6	Complied
563.841	Horiz.	34.0	46.0	12.0	Complied
630.000	Horiz.	38.4	46.0	7.6	Complied
650.000	Vert.	38.0	46.0	8.0	Complied
670.000	Horiz.	38.8	46.0	7.2	Complied
690.000	Horiz.	36.1	46.0	9.9	Complied
845.370	Vert.	38.1	46.0	7.9	Complied

Note: The preliminary scans showed similar emission levels for both the bottom channel and top channel below 1 GHz, therefore final radiated emissions measurements were performed with the EUT set to the top channel only.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

Transmitter Out of Band Radiated Emissions: Sections 95.1115(b)/2.1053 (Continued)

Note: this plot is a pre-scan and for indication purposes only. For final measurements, see accompanying table.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

Transmitter Out of Band Radiated Emissions: Sections 95.1115(b)/2.1053 (Continued)

8.3.2. Electric Field Strength Measurements: 1.0 to 6.5 GHz

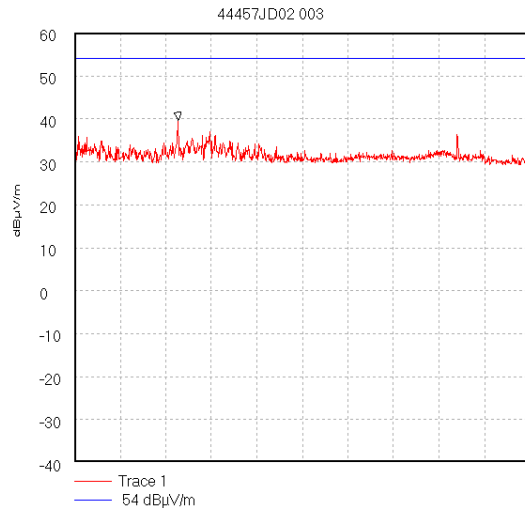
Results: Bottom Channel

Frequency (GHz)	Antenna Polarity	Average Detector level (dBμV)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Result
1216.063	Vert.	10.4	20.8	0.8	32.0	54.0	22.0	Complied
1824.094	Vert.	17.2	21.2	0.8	39.2	54.0	14.8	Complied
2432.125	Vert.	16.9	21.5	1.6	40.0	54.0	14.0	Complied
3040.156	Vert.	23.7	21.8	1.6	47.1	54.0	6.9	Complied
4256.219	Vert.	14.6	24.1	2.0	40.7	54.0	13.3	Complied
4864.250	Vert.	13.7	24.2	2.0	39.9	54.0	14.1	Complied
5472.281	Vert.	11.2	24.3	2.0	37.5	54.0	16.5	Complied
6080.313	Vert.	-3.7	26.7	2.3	25.3	54.0	28.7	Complied

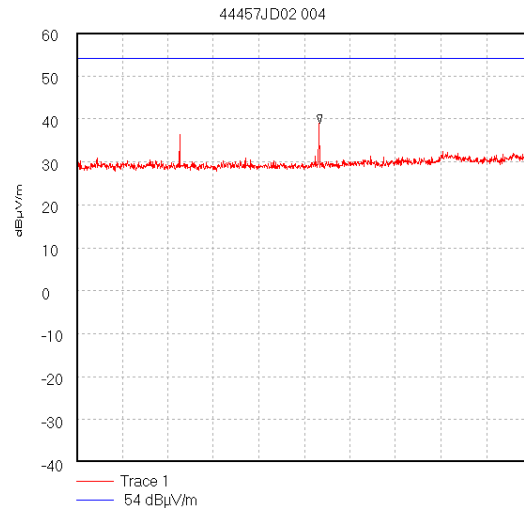
Results: Top Channel

Frequency (GHz)	Antenna Polarity	Average Detector level (dBμV)	Antenna factor (dB)	Cable loss (dB)	Actual Average Level (dBμV/m)	Average Limit (dBμV/m)	Average Margin (dB)	Result
1227.938	Vert.	11.1	20.8	0.8	32.7	54.0	21.3	Complied
1841.906	Vert.	17.5	21.2	0.8	39.5	54.0	14.5	Complied
2455.875	Vert.	20.9	21.5	1.6	44.0	54.0	10.0	Complied
3069.844	Horiz.	20.2	21.8	1.6	43.6	54.0	10.4	Complied
4297.781	Horiz.	14.6	24.1	2.0	40.7	54.0	13.3	Complied
4911.750	Horiz.	11.2	24.2	2.0	37.4	54.0	16.6	Complied
5525.719	Vert.	11.5	24.3	2.0	37.8	54.0	16.2	Complied
6139.868	Vert.	-3.7	26.7	2.3	25.4	54.0	28.6	Complied

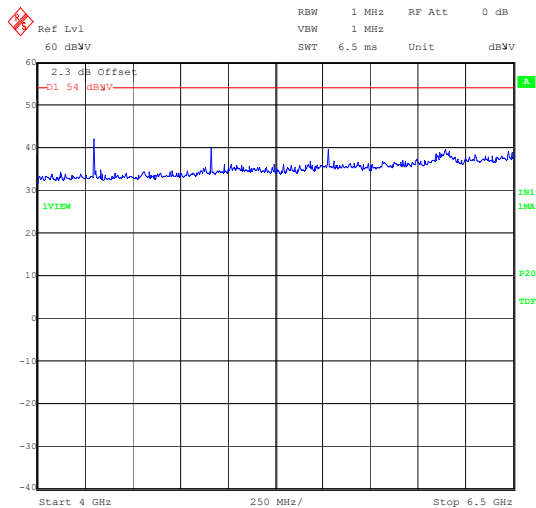
Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

Transmitter Out of Band Radiated Emissions: Sections 95.1115(b)/2.1053 (Continued)

Start 1.0 GHz; Stop 2.0 GHz
Ref 60 dBμV/m; Ref Offset 0.0 dB; 10 dB/div
RBW 1000.0 kHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS
Peak 1.228 GHz, 39.66 dBμV/m
Display Line: 54 dBμV/m; : Limit Test Passed
10/31/2003 3:18:23 PM



Start 2.0 GHz; Stop 4.0 GHz
Ref 60 dBμV/m; Ref Offset 0.0 dB; 10 dB/div
RBW 1000.0 kHz; VBW 1.0 MHz; Att 0 dB; Swp 20.0 mS
Peak 3.067 GHz, 39.03 dBμV/m
Display Line: 54 dBμV/m; : Limit Test Passed
10/31/2003 3:36:29 PM



Title: Pilextek telepack top channel
Comment A: 44457JD02
Date: 31.OCT.2003 16:25:24

Note: these plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

8.4. Transmitter Radiated Emissions At Band Edges: Section 95.1115(b)/2.1053

8.4.1. The EUT was configured as for transmitter radiated emissions testing described in Section 9 of this report.

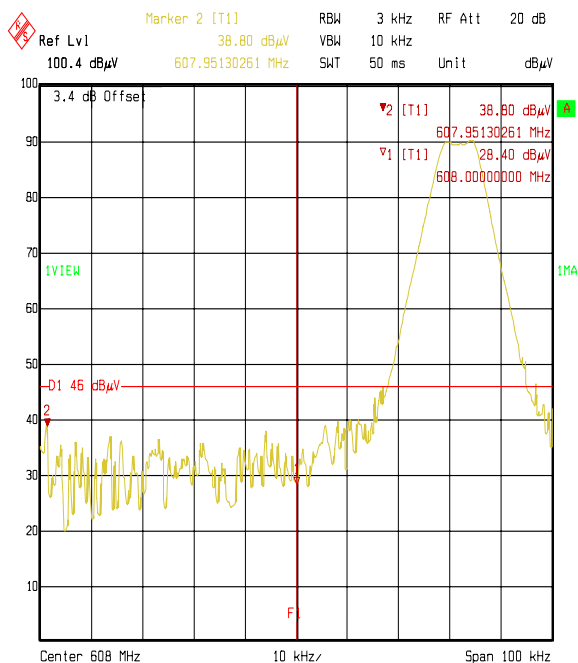
8.4.2. Tests were performed to identify the maximum emissions level at the band edges of the frequency band that the EUT will operate over and modulation sidebands related to the fundamental emission of the EUT.

Results: Bottom Band Edge

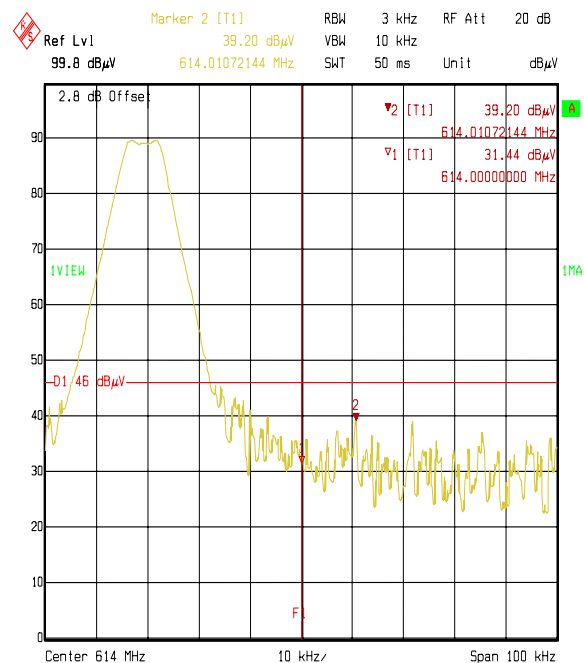
Frequency (MHz)	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
607.951	38.8	46.0	7.2	Complied
608.000	28.4	46.0	17.6	Complied

Results: Top Band Edge

Frequency (MHz)	Q-P Level (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Result
614.000	31.4	46.0	14.6	Complied
614.011	39.2	46.0	6.8	Complied



Comment A: Radiated Band Edge Bottom Channel WMTS Telepack
GPH/44457JD02/RBE02
Date: 4.NOV.2003 15:04:10



Comment A: Radiated Band Edge Top Channel WMTS Telepack
GPH/44457JD02/RBE01
Date: 4.NOV.2003 14:48:07

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

8.5. Transmitter Frequency Stability: Sections 95.1115(e)/2.1055

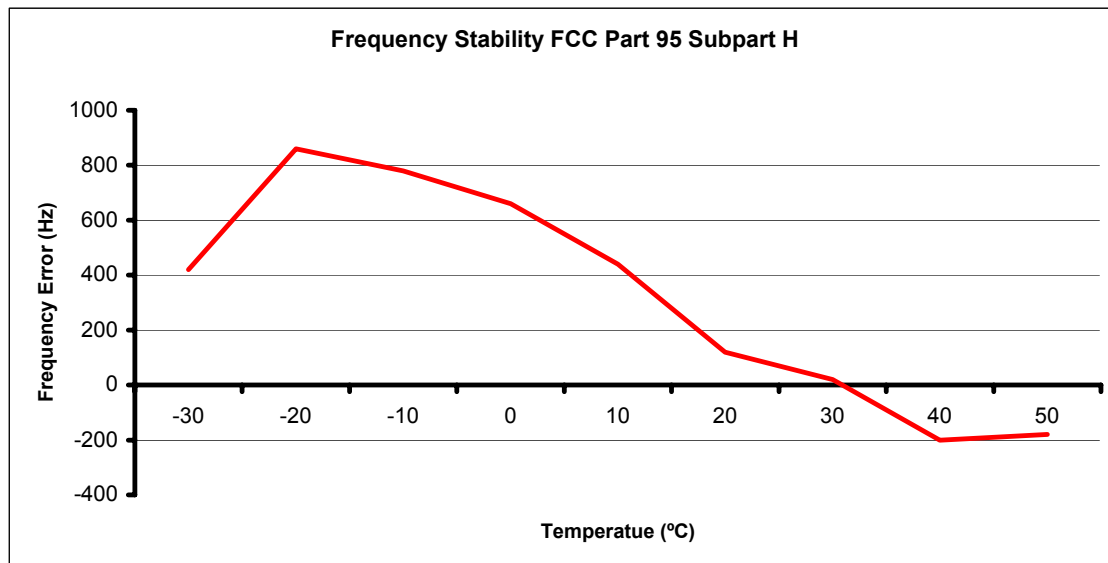
8.5.1. The EUT was configured as for frequency stability measurements as described in Section 9 of this report.

8.5.2. Tests were performed to identify the maximum frequency error of the EUT with variations in ambient temperature.

Results Bottom Channel (608.03125 MHz)

Temp (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
-30	420	608.031670	608.0	0.031670	Complied
-20	860	608.032110	608.0	0.032110	Complied
-10	780	608.032030	608.0	0.032030	Complied
0	660	608.031910	608.0	0.031910	Complied
10	440	608.031690	608.0	0.031690	Complied
20	120	608.031370	608.0	0.031370	Complied
30	20	608.031270	608.0	0.031270	Complied
40	-200	608.031050	608.0	0.031050	Complied
50	-180	608.031070	608.0	0.031070	Complied

Frequency Variation From 608.03125 MHz



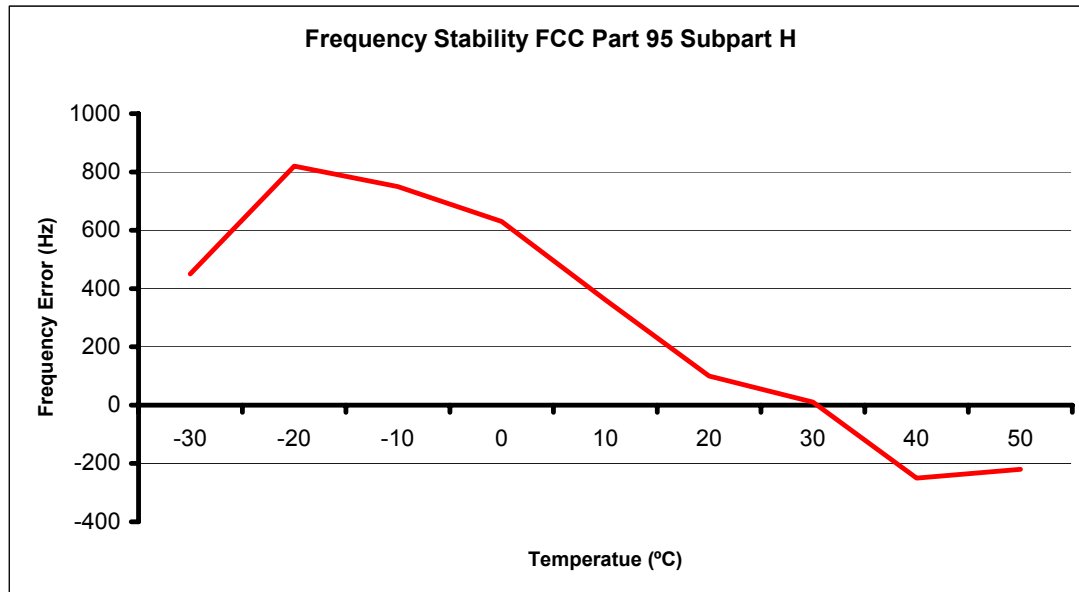
Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

Transmitter Frequency Stability (Temperature Variation): Sections 95.1115(e)/2.1055 (continued)

Results Top Channel (613.96875 MHz)

Temp (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
-30	450	613.969200	614.0	0.030800	Complied
-20	820	613.969570	614.0	0.030430	Complied
-10	750	613.969500	614.0	0.030500	Complied
0	630	613.969380	614.0	0.030620	Complied
10	360	613.969110	614.0	0.030890	Complied
20	100	613.968850	614.0	0.031150	Complied
30	10	613.968760	614.0	0.031240	Complied
40	-250	613.968500	614.0	0.031500	Complied
50	-220	613.968530	614.0	0.031470	Complied

Frequency Variation From 613.96875 MHz



Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

8.6. Transmitter Frequency Stability (Voltage Variation): Sections 95.1115(e)/2.1055

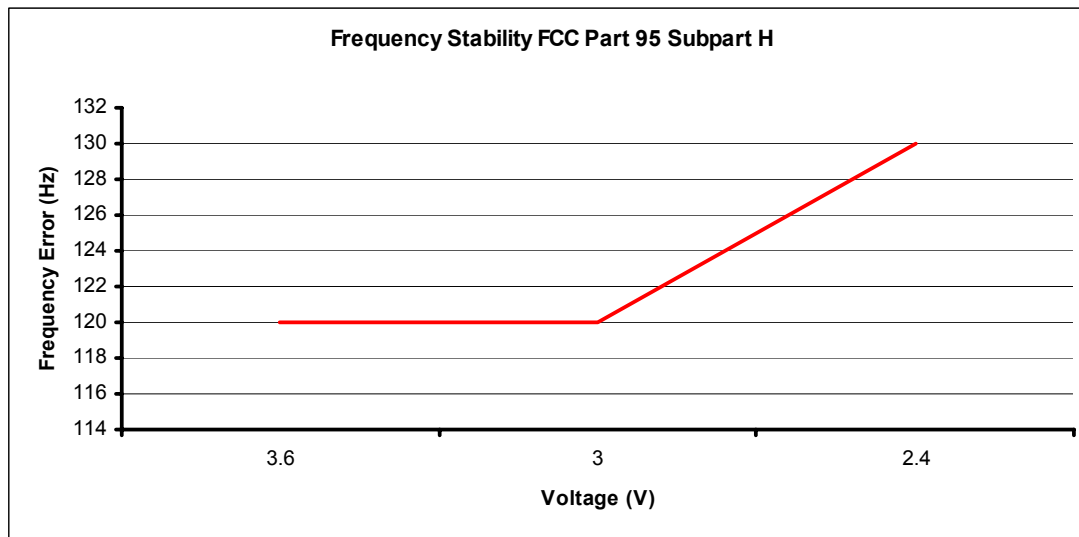
8.6.1. The EUT was configured as for frequency stability measurements as described in Section 9 of this report.

8.6.2. Tests were performed to identify the maximum frequency error of the EUT with variations in supply voltage.

Results Bottom Channel (608.03125 MHz)

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
3.6	120	608.031370	608.0	0.031370	Complied
3.0	120	608.031370	608.0	0.031370	Complied
2.4	130	608.031380	608.0	0.031380	Complied

Frequency Variation From 608.03125 MHz



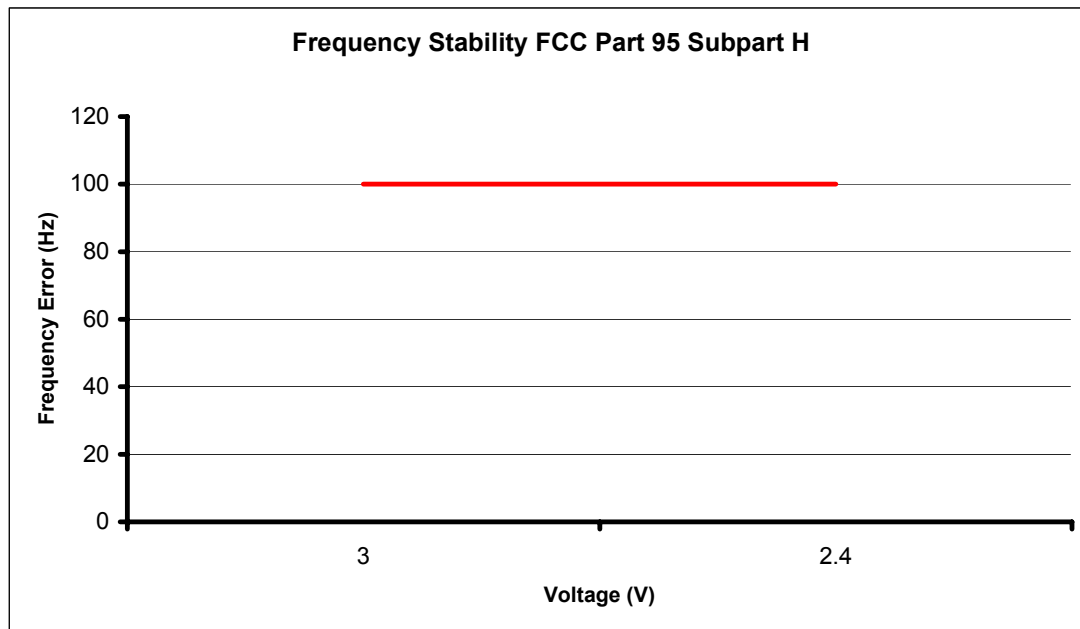
Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

**Transmitter Frequency Stability (Voltage Variation): Sections 95.1115(e)/2.1055
(continued)**

Results Top Channel (613.96875 MHz)

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
3.6	100	613.968850	614.0	0.031150	Complied
3.0	100	613.968850	614.0	0.031150	Complied
2.4	100	613.968850	614.0	0.031150	Complied

Frequency Variation From 613.96875 MHz



9. Measurement Methods

9.1. Transmitter Radiated Emissions

Radiated emissions measurements were performed in accordance with the standard, against appropriate limits for each detector function.

Initial measurements covering the entire measurement band in the form of swept scans in a shielded enclosure were performed in order to identify frequencies on which the EUT was generating interference. This determined the frequencies on which the EUT should be re-measured in full on the open area test site. In order to minimise the time taken for the swept measurements, a Peak detector was used in conjunction with the appropriate detector IF measuring bandwidth (see table below). Repetitive scans were performed to allow for emissions with low repetition rates.

The initial scans were performed using an antenna height of 1.5 m and a measurement distance of 3 m. Following the initial scans, graphs were produced giving an overview of the emissions from the EUT plotted against the appropriate specification limit. Any emission within 20 dB of the limit were then measured on the open area test site, except in cases where the noise floor was within 20 dB of the limit, in these cases the highest point of the noise floor was measured.

In either case the measurement was made at the appropriate distance using a measuring receiver with a Quasi-Peak detector for measurements below 960 MHz and an Average detector for measurements above 960 MHz.

For the final measurements the EUT was arranged on a non-conducting turn table on a standard test site compliant with ANSI C63.4 – 2001 Clause 5.4.

All measurements on the open area test site were performed using broadband antennas.

On the open area test site, at each frequency where a signal was to be measured, the trace was maximised by rotating a turntable through 360°. The angle at which the maximum signal was observed was locked out. For frequencies below 1000 MHz the test antenna was varied in height between 1 m and 4 m in order to further maximise the target emission.

For frequencies above 1000 MHz where a horn antenna was used, height searching was performed to locate the optimal height of the horn with respect to the EUT. At this point the horn was locked off and the turntable was again rotated through 360° to maximise the target signal. It should be noted that the received signal from the EUT would diminish very quickly after it exits the beam width of the horn antenna, for this reason it may not be necessary to fully height search with the horns.

At this point, any signals found to be between the limit and a level 6 dB below it were further maximised by changing the configuration of the EUT, e.g. re-routing cables to peripherals and moving peripherals with respect to the EUT.

Scans were performed to the upper frequency limit as stated in Section 2.1057(a)(1) i.e. as the equipment operates below 10 GHz, to the 10th harmonic of the highest fundamental frequency.

The final field strength was determined as the indicated level in dBµV plus cable loss and antenna factor.

**Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002**

Radiated Emissions (continued)

Standard FCC practice states that the 1st MHz band immediately adjacent to the applicants declared frequency block may be measured using a resolution bandwidth of at least 1% of the emission bandwidth. This was the method used to measure radiated emissions at the band edges. This bandwidth was found by calculating 1% of the bandwidth measured in the transmitter occupied bandwidth section of this report. A bandwidth of 3 kHz (> 1% of the emission bandwidth) was, therefore, used.

**Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002**

9.2. Occupied (20 dB) Bandwidth

The EUT was connected to a spectrum analyser enabled with an occupied bandwidth function via an antenna test fixture.

Measurements were performed to determine the Occupied Bandwidth in accordance with FCC Part 2.1049. The Occupied Bandwidth was measured from the fundamental emission at the bottom and top channels. The Occupied Bandwidth was measured in line with the requirements of 2.1049 i.e. with the EUT modulated with a signal representing the maximum rated conditions under which it will operate (worst case).

The Occupied Bandwidth was measured using the built in occupied bandwidth function of the Rohde and Schwarz FSEB spectrum analyser. It was set to measure the bandwidth where 99% of the signal power was contained. The analyser settings were set as per those outlined in the FSEB user manual for this measurement.

9.3. Frequency Stability

The EUT was situated within an environmental test chamber and monitored on the test equipment via an antenna test fixture.

Measurements were performed with the EUT operating under extremes of temperature in 10 degree increments within the range -30 to 50 degrees C.

Measurements were also performed at voltage extremes between the declared nominal supply voltage and at the declared endpoint voltage (for battery operated equipment) or by varying the primary supply voltage from 85% to 115% of the nominal value for all other equipment types.

The requirement was to determine the frequency stability of the device under specified environmental operating conditions.

The EUT was switched off for a minimum of 30 minutes between each stage of testing while the environmental chamber stabilised at the next temperature within the stated temperature range.

Once the environmental chamber had reached thermal equilibrium, the nominal frequency of the EUT was measured and recorded. The recorded frequency was compared to the appropriate operating frequency band edge.

In order to show compliance, the measured frequency must remain within the declared frequency band.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

10. Measurement Uncertainty

10.1. No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently, the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

10.2. The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

10.3. The uncertainty of the result may need to be taken into account when interpreting the measurement results.

10.4. The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor, such that a confidence level of approximately 95% is maintained. For the purposes of this document "approximately" is interpreted as meaning "effectively" or "for most practical purposes".

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
Fundamental Fieldstrength	30 MHz to 1000 MHz	95%	+/- 5.26 dB
Frequency Stability	Not applicable	95%	+/- 20 Hz
Occupied Bandwidth	Not applicable	95%	+/- 0.12 %
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	+/- 5.26 dB
Radiated Spurious Emissions	1 GHz to 18 GHz	95%	+/- 4.18 dB

10.5. The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty, the published guidance of the appropriate accreditation body is followed.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.
A027	Horn Antenna	Eaton	9188-2	301
A031	2 to 4 GHz Eaton Horn Antenna	Eaton	91889-2	557
A1037	Chase Bilog Antenna	Chase EMC Ltd	CBL6112B	2413
A197	Site 2 Controller SC144	Unknown	SC144	150720
A253	WG 12 Microwave Horn	Flann Microwave	12240-20	128
A259	Bilog Antenna	Chase	CBL6111	1513
A276	OATS Positioning Controller	Rohde & Schwarz	HCC	
A427	WG 14 horn	Flann	14240-20	150
A490	Bilog Antenna	Chase	CBL6111A	1590
E013	PCN Environmental Chamber	Sanyo	ATMOS chamber	None
M003	Spectrum Monitor	Rohde & Schwarz	EZM	883 580/008
M023	ESVP Receiver	Rohde & Schwarz	ESVP	872 991/027
M025	Fluke 87 Multimeter	Fluke	87	473 50093
M027	CMTA Radio Comms Analyser	Rohde & Schwarz	CMTA	883 574/004
M069	ESMI Spectrum Analyser / Receiver	Rohde & Schwarz	ESMI	829 808/007 (DU) / 827 063/008 (RU)
M088	Receiver / Spectrum Analyser System	Rohde & Schwarz	ESBI	DU:835862/018 RU:835387/006

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

Test Equipment Used (Continued)

RFI No.	Instrument	Manufacturer	Type No.	Serial No.
M1124	Rohde & Schwarz	Rohde & Schwarz	ESIB26	100046K
M123	Thermometer	TESTO	110	60365690083GB
M127	Spectrum Analyser	Rohde & Schwarz	FSEB 30	842 659/016
M173	Turntable Controller	R.H.Electrical Services	RH351	3510020
M505	Analyser Display Unit	Rohde & Schwarz	ESAI-D	825316/010
M506	RF unit	Rohde & Schwarz	ESBI-RF	827060/004
S201	Site 1	RFI	1	None
S202	Site 2	RFI	2	None
S207	Site 7	RFI	7	None

NB In accordance with UKAS requirements, all the measurement equipment is on a calibration schedule.

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

Appendix 2. Test Configuration Drawings

This appendix contains the following drawings:

Drawing Reference Number	Title
DRG\44457JD02\EMIRAD	Test configuration for measurement of radiated emissions

Test Of: Datascope Corp.
Panorama Telepack - 608
To: FCC Part 95 Subpart H: 2002

DRG\44457JD02\EMIRAD