

TEST REPORT

FCC Part 15 Subpart C Section 15.207

FCC Part 15 Subpart C Section 15.209

IC RSS-210 Issue 8

IC RSS-Gen Issue 3

MANUFACTURER'S NAME	Carestream Health Incorporated 150 Verona Street Rochester NY 14608
PRODUCT NAME	DRYVIEW Chroma Laser Imaging System with Roll Feed RF-Tag
MODEL NUMBER(S) TESTED	Dryview Chroma Laser Imaging System
SERIAL NUMBER(S) TESTED	10021
PRODUCT DESCRIPTION	DRYVIEW CHROMA Imaging System
TEST REPORT NUMBER	WC1111229
TEST DATE(S)	11 January 2012

TÜV SÜD America Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the applicable EMC requirements of FCC Part 15 Subpart C Sections 15.207 "Conducted Limits" and 15.209 "Radiated emission limits; general requirements" and IC RSS-210 "Low-power Licence-exempt Radiocommunication Devices (All Frequency Bands): Category I Equipment" and IC RSS-Gen "General Requirements and Information for the Certification of Radiocommunication Equipment".

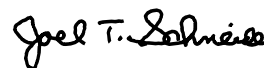
It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications necessary for compliance made during testing on the above mentioned date(s) must be implemented in all production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

Date: 07 February 2012

Location: Taylors Falls MN
USA



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Senior EMC Technician



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Senior EMC Engineer

Not Transferable

EMC TEST REPORT

Test Report No. WC1111229 Date of issue: 07 February 2012

Product Name DRYVIEW Chroma Laser Imaging System with Roll Feed RF-Tag

Model(s) Tested Dryview Chroma Laser Imaging System

Serial No(s) Tested 10021

Product Description DRYVIEW CHROMA Imaging System

Manufacturer Carestream Health Incorporated
150 Verona Street
Rochester NY 14608

Test Result **Positive** **Negative**

TÜV SÜD America Inc reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. TÜV SÜD America Inc shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV SÜD America Inc issued reports.

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REVISION RECORD

REVISION	TOTAL NUMBER OF PAGES	DATE	DESCRIPTION
		07 February 2012	Initial Release



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EMC TEST REGULATIONS:

The tests were performed according to the following regulations:

FCC Part 15 Subpart C Section 15.207 Paragraph (a)
FCC Part 15 Subpart C Section 15.209 Paragraphs (a), (c), (f)
IC RSS-210 Issue 8 Section 2.5
IC RSS-Gen Issue 3 Sections 4.6.1, 7.2.5

ENVIRONMENTAL CONDITIONS IN THE LAB

	<u>Actual</u>
Temperature:	: 20°C
Atmospheric pressure	: 98kPa
Relative Humidity	: 24%

POWER SUPPLY UTILIZED

Power supply system : 110/230 V / 60/50 Hz

TEST EQUIPMENT

All measurement instrumentation is traceable to the National Institute of Standards and Technology and is calibrated according to internal procedure.

MEASUREMENT UNCERTAINTY

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. The test system has a measurement uncertainty of ± 1.8 dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. The test system has a measurement uncertainty of ± 4.8 dB. All measurement instrumentation is traceable to the National Institute of Standards and Technology and is calibrated according to internal procedure.

SIGN EXPLANATIONS

- not applicable
- applicable

General field strength limits 0.009 – 30 MHz
FCC 15.209(a), FCC 15.209(c), IC RSS-210 2.5, RSS-Gen 7.2.5

Test summary

The requirements are: - MET - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 8.2.2.

Maximum field strength of the fundamental for the Roll Antenna is 29 dB μ V/m* or 28.1 μ V/m at 30 meters at 13.56 MHz. Minimum margin of compliance of the fundamental is 0.5 dB.

Maximum field strength of the fundamental for the Tray Antenna is 28.3 dB μ V/m* or 26.0 μ V/m at 30 meters at 13.56 MHz. Minimum margin of compliance of the fundamental is 1.2 dB. No spurious emissions were detected. No unwanted emissions exceed the level of the fundamental.

*Extrapolated levels using a 20 dB/decade falloff as indicated by the measurements.

Test location

- Wild River Lab Large Test Site (Open Area Test Site)
- Wild River Lab Small Test Site (Open Area Test Site)

Test distance

- 1 meter
- 3 meters
- 10 meters

Test equipment

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
WRLE02517	HFH2-Z2	Polarad	Loop Antenna	879285/036	18-Aug-12
OWLE02532	ESHS-10	Rohde & Schwarz	EMI Receiver	828178/006	27-Oct-12

Test limit

Frequency (MHz)	Field strength μ V/m	Measurement distance (m)
0.009-0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30	30	30

The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

Test Data, dB μ V/m

Frequency (MHz)	Detector	Distance			dB μ V/m		Limit		Delta (dB)
		1 m	3 m	10 m	30 m	μ V/m 30 m	dB μ V/m 30 m		
13.56 (Roll Antenna)	QP	59	49	37.5	29*	28.1*	29.5	30	-.5
13.56 (Tray Antenna)	QP	60.1	48.3	37.6	28.3*	26.0*	29.5	30	-1.2

* Extrapolated value using 20 dB per decade fall off as indicated by measurements

nf = noise floor

No other signals detected up to 30 MHz.

Radiated emissions in the frequency range of 10 kHz to 30 MHz, including the fundamental transmit signal, are measured using a receiver capable of quasi-peak/average/peak measurements and a magnetic loop antenna. The transmitter and loop antenna are rotated through 3 orthogonal axes in order to determine the maximum emission levels. If the signal cannot be measured at the specified limit distance, measurements are recorded at multiple distances nearer to the device and the final level mathematically extrapolated. Measurements between 150 kHz and 30 MHz are made with a 9 kHz resolution bandwidth. Measurements between 9 kHz and 150 kHz are made with a 200 Hz resolution bandwidth.

Radiated Emissions 30 - 8000 MHz
FCC 15.209(c), FCC 15.209(f), IC RSS-210 2.5, RSS-Gen 7.2.5

Test summary

The requirements are: ■ - MET □ - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 8.3. Maximum spurious emission below 135.6 MHz is 37.36 dB μ V/m (73.8 μ V/m) at 3 meters at 108.256 MHz. Minimum margin of compliance is 6.14 dB. Maximum spurious emission of incorporated digital device above 135.6 MHz and below 1000 MHz is 39.16 dB μ V/m at 3 meters at 750 MHz. Minimum margin of compliance is 19.55 dB. No receive mode or standby mode available.

Test limits

Transmitter and 15.205 restricted bands

Frequency (MHz)	Field strength (μ V/m)	Field strength (dB μ V/m)	Measurement distance (m)
30 - 88	100	40	3
88 - 216	150	43.5	3
216 - 960	200	46	3
Above 960	500	54	3

Incorporated digital device/Receiver – Class A device

Frequency (MHz)	Field strength (dB μ V/m)	Field strength (dB μ V/m)	Measurement distance (m)
30 - 88	90	39	10
88 - 216	150	43.5	10
216 - 960	210	46.4	10
Above 960	300	49.5	10

All measurements made at 3 meters – the 15.109 Class A limit above is extrapolated to 3 meters on data sheets.

The emission limits shown in the above tables are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector. When average radiated emission measurements are specified in this part, including average emission measurements below 1000 MHz, there also is a limit on the peak level of the radio frequency emissions. Unless otherwise specified, e.g., see §§ 15.250, 15.252, 15.255, and 15.509–15.519, the limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test. Radiated emissions from the EUT are measured in the frequency range of 30 to 1000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Measurements between 30 MHz and 1000 MHz are made with a 120 kHz / 6 dB bandwidth and quasi-peak detection and measurements above 1000 MHz are made with a 1 MHz RBW/VBW / 6 dB bandwidth and peak detection, 1 MHz RBW/ 10 Hz VBW for average detection. Table top equipment is placed on a non-conductive support 80 cm above the 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 is 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 is rotated 360 degrees. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB / decade (inverse linear-distance for field strength measurements).

Test location

■ - Wild River Lab Large Test Site (Open Area Test Site)

Test distance

■ - 3 meters

Test Equipment

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
WRLE02534	ESHS-20	Rohde & Schwarz	EMI Receiver 9kHz-30MHz	837055/003	15-Jun-12
WRLE02517	HFH2-Z2	Polorad	Loop Antenna	879285/036	18-Aug-12
WRLE03995	EM-6917B	Electro-Metrics	Biconicalog Periodic	151	06-May-12
WRLE02674	85662A	Hewlett-Packard	Analyzer Display	2050A02007	07-Dec-12
WRLE02690	8568B	Hewlett-Packard	Spectrum Analyzer	2430A00930	07-Dec-12
WRLE02681	85650A	Hewlett-Packard	Quasi-Peak Adapter	2430A00562	24-May-12
WRLE02670	8447D	Hewlett-Packard	Preamplifier	2443A03954	Code B 17-Jan-12

Cal Code B = Calibration verification performed internally.

Test data

Measurement summary for limit1: FCC 15.209 to 135.6MHz (Qp) – 3 meters

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC 15.209	FINAL (uV / m)
108.256 MHz	55.71 Qp	0.98 / 8.37 / 27.71 / 0.0	37.36	H / 2.14 / 202	-6.14	73.8
69.021 MHz	46.6 Qp	0.82 / 8.98 / 27.89 / 0.0	28.5	V / 1.00 / 0	-11.5	
57.11 MHz	43.95 Qp	0.71 / 11.29 / 28.07 / 0.0	27.88	V / 1.00 / 0	-12.12	
40.678 MHz	39.3 Qp	0.6 / 15.42 / 27.93 / 0.0	27.4	V / 1.00 / 0	-12.6	
99.907 MHz	49.35 Qp	0.94 / 7.77 / 27.66 / 0.0	30.4	V / 1.00 / 270	-13.1	
122.044 MHz	44.1 Qp	1.05 / 7.72 / 27.78 / 0.0	25.09	H / 2.00 / 270	-18.41	

For incorporated digital device

Measurement summary for limit1: FCC 15.109 class A - (3m) (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 FCC-A <1GHz 3m extrapolation
750.0 MHz	39.16 Qp	2.72 / 21.33 / 26.36 / 0.0	36.85	V / 1.96 / 0	-19.55
144.077 MHz	49.05 Qp	1.15 / 8.26 / 27.9 / 0.0	30.55	H / 2.00 / 0	-22.95
198.31 MHz	46.3 Qp	1.31 / 10.02 / 27.65 / 0.0	29.98	H / 2.00 / 270	-23.52
288.0 MHz	43.4 Qp	1.57 / 12.09 / 27.33 / 0.0	29.72	H / 1.00 / 0	-26.68
136.701 MHz	44.6 Qp	1.12 / 7.7 / 27.86 / 0.0	25.57	H / 2.00 / 270	-27.93
250.0 MHz	43.25 Qp	1.48 / 11.27 / 27.74 / 0.0	28.26	V / 1.00 / 0	-28.14
368.642 MHz	37.75 Qp	1.83 / 14.75 / 27.34 / 0.0	26.99	H / 2.00 / 90	-29.41

No other signals within 10 dB of the limit up to 8 GHz

Occupied bandwidth RSS-Gen 4.6.1

Test summary

The requirements are: - MET - NOT MET

Test was performed in accordance with the article "The Measurement of Occupied Bandwidth" by Industry Canada's certification bureau.

Occupied bandwidth = 2.82 kHz

Test location

- Wild River Lab Large Test Site (Open Area Test Site)

- Wild River Lab Small Test Site (Open Area Test Site)

Test equipment

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
WRLE02517	HFH2-Z2	Polorad	Loop Antenna	879285/036	18-Aug-12
WRLE10435	E4440A	Agilent	Spectrum Analyzer	MY44304483	22-Jul-12

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test limit

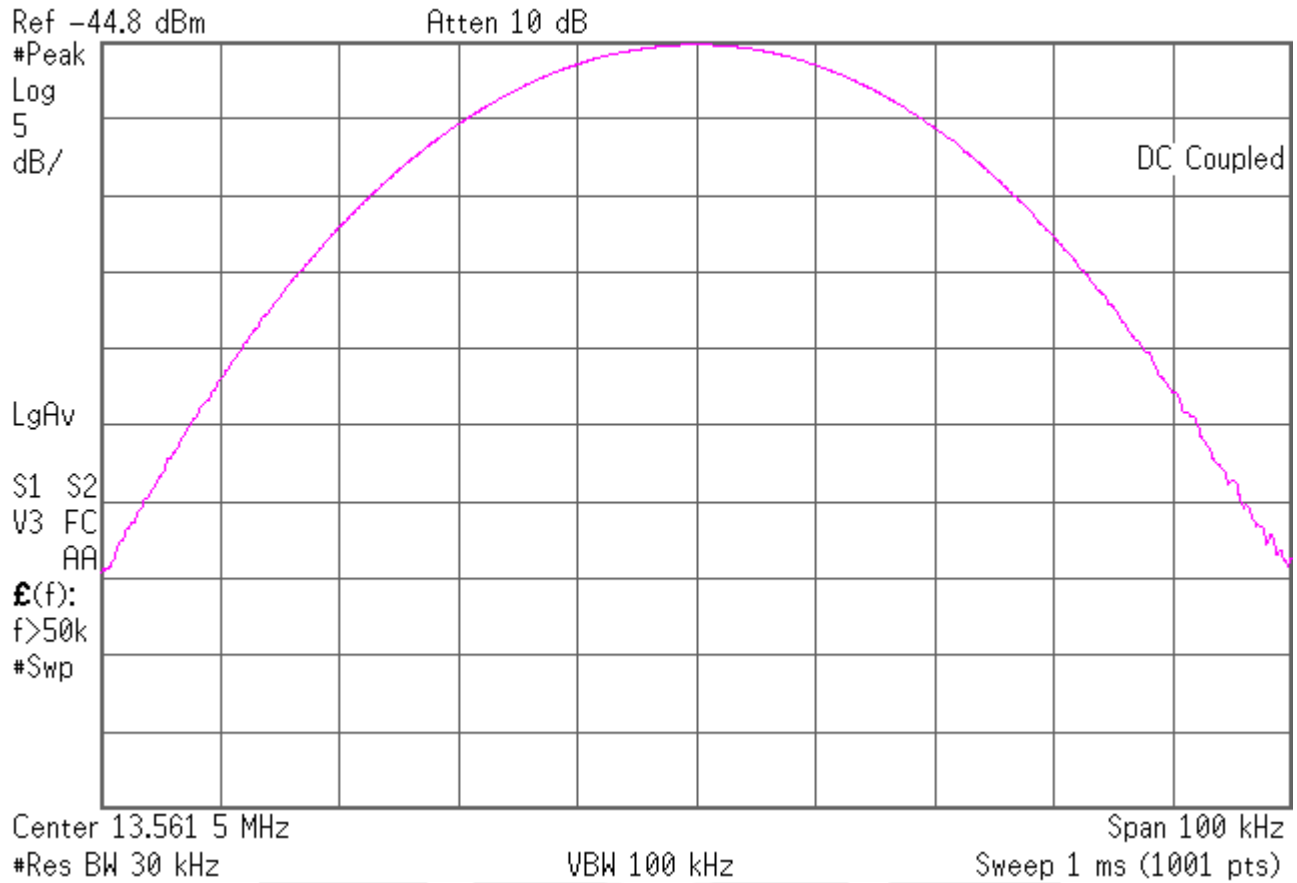
No limit specified

Test data

See following pages

99% Occupied bandwidth
1 of 2

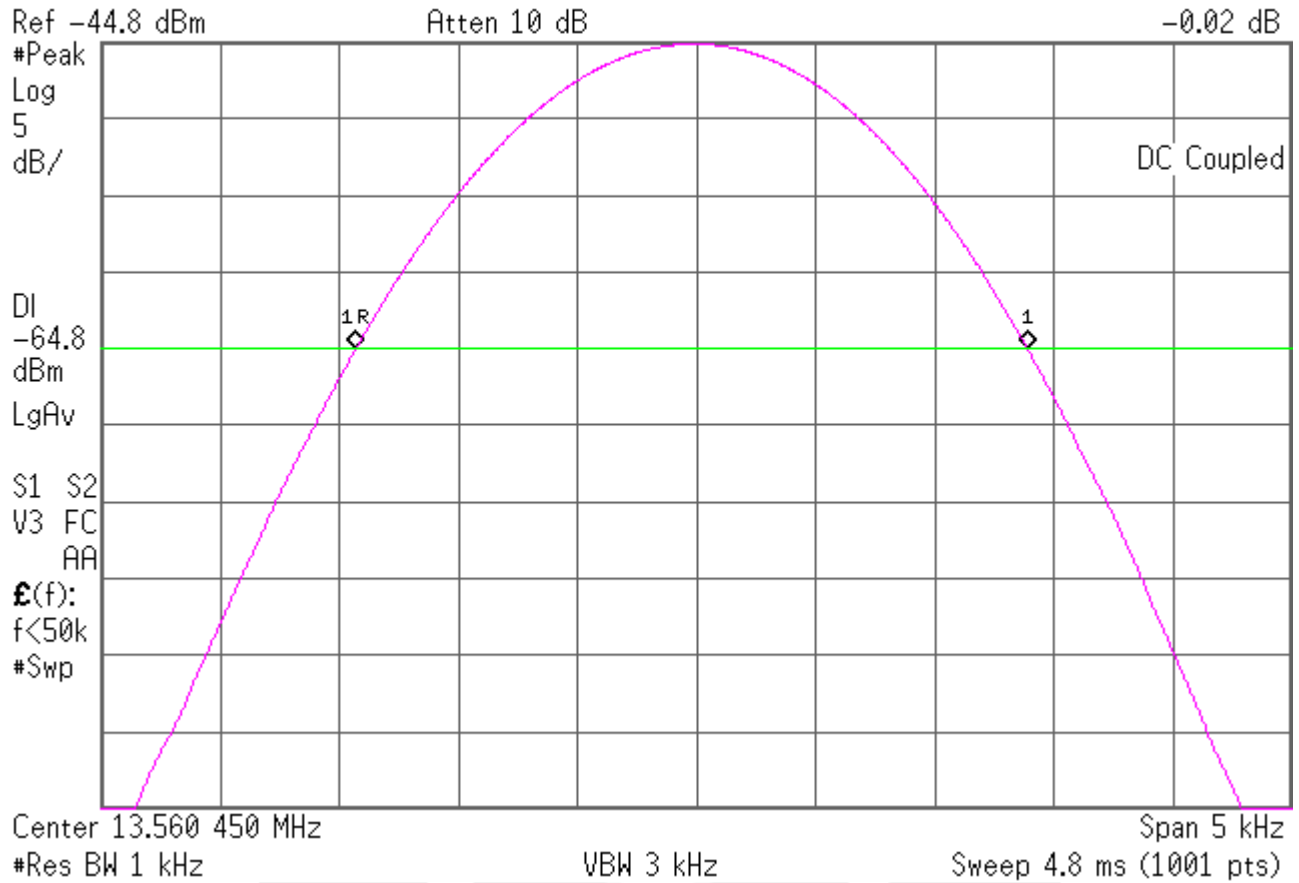
Agilent 14:34:39 Jan 11, 2012



99% Occupied bandwidth
2 of 2

Agilent 14:38:23 Jan 11, 2012

▲ Mkr1 2.820 kHz
-0.02 dB



Conducted Emissions - AC Power Lines FCC 15.207(a), IC RSS-Gen 7.2.4

Test summary

The requirements are: - MET - NOT MET

Testing was performed in accordance with the test procedure of ANSI C63.4 2003, clause 7.2

Minimum margin of compliance is 17.08 dB at 180.0 kHz – quasi-peak on the DRE

Minimum margin of compliance is 12.22 dB at 2.905 MHz – average on the DRE

Minimum margin of compliance is 10.47 dB at 13.56 MHz – quasi-peak on the Printer

Minimum margin of compliance is 0.85 dB at 13.56 MHz – average on the Printer

Test location

- Wild River Lab Large Test Site (Open Area Test Site)

- Wild River Lab Small Test Site (Open Area Test Site)

Test equipment used:

TUV ID	Model	Manufacturer	Description	Serial	Cal Due
WRLE02416	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN (white tape*)	8812-1437	Code B 23-Feb-12
OWLE02078	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN	1326	Code B 20-Jul-12
WRLE02534	ESHS-20	Rohde & Schwarz	EMI Receiver 9kHz-30MHz	837055/003	15-Jun-12

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

Test limits, dB μ V

Frequency (MHz)	Quasi Peak	Average
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5	56	46
5 - 30	60	50

*Decreases with the logarithm of the frequency

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 (9 kHz resolution bandwidth) and quasi-peak/average 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. In some cases, a pre-scan using a spectrum analyzer is initially performed on the units comprising the system under test to locate the highest emissions.

Test data

See following pages

Data for the DRE

Measurement summary for limit1: EN55022 B Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 B Qp
180.0 kHz	47.16 Qp	0.06 / 0.18 / 0.0 / 0.0	47.4	N	-17.08
13.975 MHz	39.14 Qp	0.83 / 0.2 / 0.0 / 0.0	40.17	L1	-19.83
2.905 MHz	34.02 Qp	0.4 / 0.1 / 0.0 / 0.0	34.52	N	-21.48
485.0 kHz	34.5 Qp	0.13 / 0.1 / 0.0 / 0.0	34.73	L1	-21.53
165.0 kHz	42.3 Qp	0.06 / 0.19 / 0.0 / 0.0	42.55	N	-22.66
365.0 kHz	34.38 Qp	0.11 / 0.1 / 0.0 / 0.0	34.59	L1	-24.02
21.35 MHz	33.64 Qp	1.05 / 0.23 / 0.0 / 0.0	34.92	L1	-25.08
665.0 kHz	30.58 Qp	0.15 / 0.1 / 0.0 / 0.0	30.83	L1	-25.17
5.93 MHz	33.16 Qp	0.58 / 0.12 / 0.0 / 0.0	33.86	N	-26.14
1.15 MHz	29.0 Qp	0.22 / 0.1 / 0.0 / 0.0	29.32	L1	-26.68
235.0 kHz	34.94 Qp	0.08 / 0.14 / 0.0 / 0.0	35.17	L1	-27.1
27.26 MHz	30.28 Qp	1.31 / 0.35 / 0.0 / 0.0	31.93	N	-28.07

Measurement summary for limit2: EN55022 B Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 EN55022 B Avg
2.905 MHz	33.28 Av	0.4 / 0.1 / 0.0 / 0.0	33.78	N	-12.22
485.0 kHz	32.91 Av	0.13 / 0.1 / 0.0 / 0.0	33.14	L1	-13.12
13.975 MHz	34.05 Av	0.83 / 0.2 / 0.0 / 0.0	35.08	L1	-14.92
665.0 kHz	29.86 Av	0.15 / 0.1 / 0.0 / 0.0	30.11	L1	-15.89
1.15 MHz	28.36 Av	0.22 / 0.1 / 0.0 / 0.0	28.68	L1	-17.32
365.0 kHz	29.43 Av	0.11 / 0.1 / 0.0 / 0.0	29.64	L1	-18.97
5.93 MHz	29.76 Av	0.58 / 0.12 / 0.0 / 0.0	30.46	N	-19.54
180.0 kHz	33.41 Av	0.06 / 0.18 / 0.0 / 0.0	33.65	N	-20.83
21.35 MHz	26.15 Av	1.05 / 0.23 / 0.0 / 0.0	27.43	N	-22.57
27.26 MHz	24.79 Av	1.31 / 0.35 / 0.0 / 0.0	26.44	N	-23.56
235.0 kHz	19.55 Av	0.08 / 0.14 / 0.0 / 0.0	19.78	N	-32.49
165.0 kHz	12.75 Av	0.06 / 0.19 / 0.0 / 0.0	13.0	N	-42.21

Data for the Printer

Measurement summary for limit1: EN55022 B Qp (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA1 EN55022 B Qp
13.56 MHz	48.52 Qp	0.81 / 0.2 / 0.0 / 0.0	49.53	N	-10.47
195.0 kHz	50.1 Qp	0.07 / 0.17 / 0.0 / 0.0	50.34	L1	-13.48
15.2 MHz	41.58 Qp	0.89 / 0.2 / 0.0 / 0.0	42.67	L1	-17.33
15.925 MHz	38.84 Qp	0.91 / 0.2 / 0.0 / 0.0	39.95	N	-20.05
715.0 kHz	35.26 Qp	0.16 / 0.1 / 0.0 / 0.0	35.52	L1	-20.48
260.0 kHz	38.52 Qp	0.09 / 0.13 / 0.0 / 0.0	38.74	L1	-22.69
20.775 MHz	33.98 Qp	1.04 / 0.22 / 0.0 / 0.0	35.24	N	-24.76
11.185 MHz	33.32 Qp	0.71 / 0.2 / 0.0 / 0.0	34.23	N	-25.77
1.1 MHz	28.66 Qp	0.21 / 0.1 / 0.0 / 0.0	28.97	L1	-27.03
2.805 MHz	28.26 Qp	0.39 / 0.1 / 0.0 / 0.0	28.75	N	-27.25
10.915 MHz	31.74 Qp	0.7 / 0.2 / 0.0 / 0.0	32.64	L1	-27.36
2.53 MHz	27.24 Qp	0.37 / 0.1 / 0.0 / 0.0	27.71	N	-28.29
4.35 MHz	21.9 Qp	0.49 / 0.1 / 0.0 / 0.0	22.49	L1	-33.51
4.555 MHz	21.42 Qp	0.51 / 0.1 / 0.0 / 0.0	22.03	L1	-33.97
26.65 MHz	24.2 Qp	1.29 / 0.33 / 0.0 / 0.0	25.82	N	-34.18
25.73 MHz	23.82 Qp	1.23 / 0.31 / 0.0 / 0.0	25.37	N	-34.63

Measurement summary for limit2: EN55022 B Avg (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV)	EUT Lead	DELTA2 EN55022 B Avg
13.56 MHz	48.14 Av	0.81 / 0.2 / 0.0 / 0.0	49.15	N	-0.85
195.0 kHz	46.03 Av	0.07 / 0.17 / 0.0 / 0.0	46.27	L1	-7.55
15.925 MHz	36.99 Av	0.91 / 0.2 / 0.0 / 0.0	38.1	L1	-11.9
15.2 MHz	35.88 Av	0.89 / 0.2 / 0.0 / 0.0	36.97	L1	-13.03
715.0 kHz	29.67 Av	0.16 / 0.1 / 0.0 / 0.0	29.93	L1	-16.07
260.0 kHz	34.16 Av	0.09 / 0.13 / 0.0 / 0.0	34.38	N	-17.05
1.1 MHz	25.72 Av	0.21 / 0.1 / 0.0 / 0.0	26.03	N	-19.97
2.805 MHz	24.37 Av	0.39 / 0.1 / 0.0 / 0.0	24.86	L1	-21.14
11.185 MHz	27.8 Av	0.71 / 0.2 / 0.0 / 0.0	28.71	N	-21.29
2.53 MHz	23.7 Av	0.37 / 0.1 / 0.0 / 0.0	24.17	N	-21.83
25.73 MHz	19.84 Av	1.23 / 0.31 / 0.0 / 0.0	21.39	L1	-28.61
10.915 MHz	20.06 Av	0.7 / 0.2 / 0.0 / 0.0	20.96	N	-29.04
4.35 MHz	15.7 Av	0.49 / 0.1 / 0.0 / 0.0	16.29	L1	-29.71
4.555 MHz	14.72 Av	0.51 / 0.1 / 0.0 / 0.0	15.33	L1	-30.67
26.65 MHz	14.85 Av	1.29 / 0.33 / 0.0 / 0.0	16.47	L1	-33.53
20.775 MHz	14.52 Av	1.04 / 0.22 / 0.0 / 0.0	15.78	L1	-34.22

TEST SET-UP PHOTOS

PAGES 14 – 19 REMOVED

TO BE HELD SHORT TERM CONFIDENTIAL

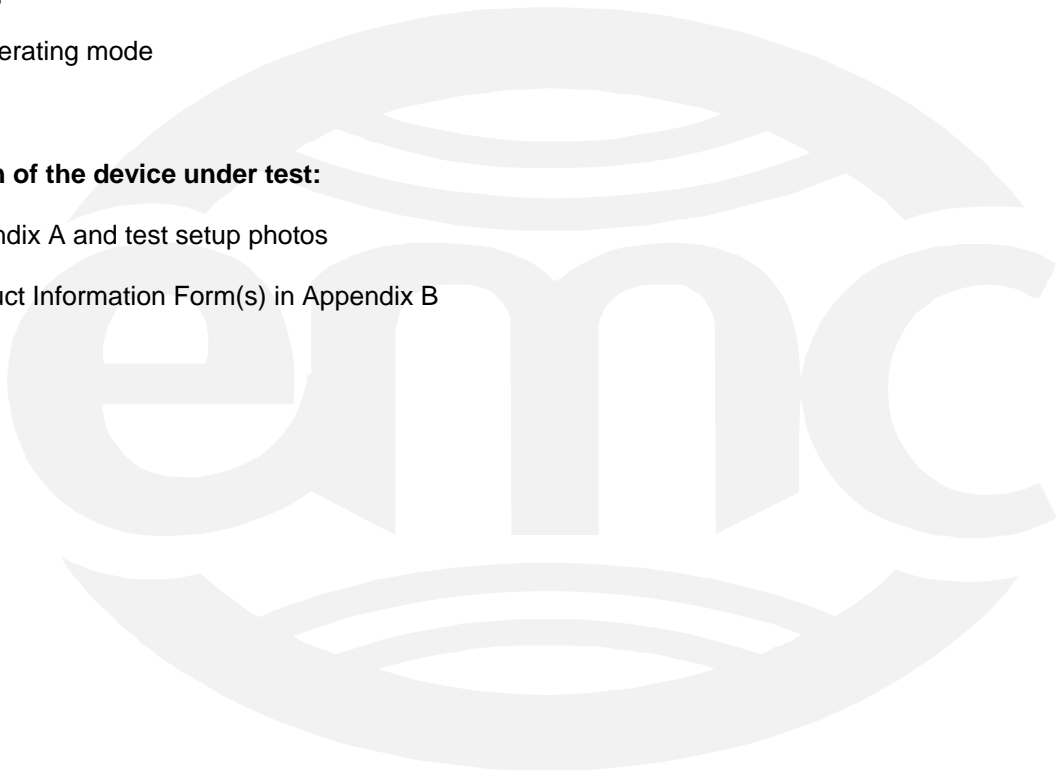
Equipment Under Test (EUT) Test Operation Mode:

The device under test was operated under the following conditions during immunity testing :

- Standby
- Test program (H - Pattern)
- Test program (color bar)
- Test program (customer specific)
- Practice operation
- Normal operating mode

Configuration of the device under test:

- See Appendix A and test setup photos
- See Product Information Form(s) in Appendix B



DEVIATIONS FROM STANDARD:

None.

GENERAL REMARKS:

None

Modifications required to pass:

- None
- As indicated on the data sheet(s)

Test Specification Deviations: Additions to or Exclusions from:

- None
- As indicated in the Test Plan

SUMMARY:

The requirements according to the technical regulations are

- met and the device under test does fulfill the general approval requirements.
- **not** met and the device under test does **not** fulfill the general approval requirements..

EUT Received Date: 11 January 2012
Condition of EUT: Normal
Testing Start Date: 11 January 2012
Testing End Date: 11 January 2012

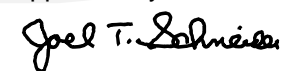
TÜV SÜD AMERICA INC

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Appendix A

Constructional Data Form





EMC Test Plan
DRYVIEW CHROMA Imaging System
includes Roll Feed RF-Tag

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Affected Departments: Design Engineering, Agency

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1. Purpose

This document will detail the EMC Test requirements for the DRYVIEW CHROMA Imaging System with addition of Roll Feed RF-Tag subsystem, in addition to the original Tray RF-Tag subsystem.

This document will define the following:

- Define who is responsible for what under this plan.
- List the configurations which are required to be tested.
- Summarize the tests that will be executed.
- List the support equipment required to execute the testing.

2. Scope

This document is limited to providing the framework for testing DRYVIEW CHROMA Imaging System with addition of Roll Feed RF-Tag subsystem.

The product will be tested only to show compliance of the modified RF-Tag Driver board / RF-Tag Tray Antenna and Roll Feed RF-Tag subsystem.

EMC Reports generated for NON-Roll Feed EMC Testing will be used for Immunity, Flicker and Harmonics since the modifications for Roll Feed RF-Tag will not impact those test results.

DRYVIEW CHROMA Imaging System has two major components: Epson Stylus Pro 4900, known as DRYVIEW CHROMA Printer, or Printer, and a CARESTREAM DRYVIEW CHROMA DICOM Raster Engine known as the DRE. Both the Printer and DRE may be plugged into any 120V AC to 240V AC outlet.

3. References

8F6845 Product Requirement Spec (PRS) – DRYVIEW CHROMA

4. Acronyms

EMC	Electro Magnetic Compatibility
Ethernet	A standard communications link defined in IEE 802
TUV-AM	Technischer Überwachungs Verein - America or Technical Surveillance Organization – America

5. Responsibilities

EHS Oakdale is responsible for the EMC Testing.

The DRYVIEW CHROMA - Hardware and Software Design Teams are responsible to support EMC testing.

The testing will be executed by a 3rd party test house, TUV Wild River Lab (WRL) which is qualified to certify the equipment as compliant. The order of testing will be which ever order is most advantageous to TUV.

6. Theory of Operation DRYVIEW Chroma RF Tag System

The RF Tags work at a frequency of 13.56 MHz. The system comprises a reader, two antennas and transponders (for example: smart label), one transponder in the tray's media holder and one transponder attached to the roll core for the roll paper. The system is used for wireless identification of media.

The system works according the "reader talks first" principle, which means that the transponder keeps quiet until reader sends a request to it. The reader can rapidly and simultaneously identify numerous transponders in the antenna's field. It can write data to and read data from the transponders: either in addressed mode by using the factory programmed read only number, or in general mode to all transponders in its field. The read/write capability of the transponder allows users to update the data stored in the transponder's memory, anywhere along the transponder's movement.

The RF Tag provides the receive/transmit functions required to communicate with variety of transponders that operate in the 13.56 MHz ISM band. A transmit encoder converts the transmitted data stream into the selected protocol; Protocol section is done in the header of the transmitted data string.

7. System Components

Component

Epson 4900 Printer

DICOM Raster Engine

8. Cables

The DRYVIEW CHROMA is configured with the following cables.

Cable: Description	Usage
Cat 6 Ethernet Cable	Communication with the Ethernet system.
USB Cable	Communication DRE To Printer
USB Cable	Communications DRE to RF-Tag Driver Board
Com Cable	RF-Tag Driver Board to Roll Feed Antenna Board

9. Test Space and Power Requirements

Space and Power for EUT

The DRYVIEW CHROMA Printer requires ~ 8 square feet of area.
(~2 feet X ~4 feet).

The CHROMA DRE requires 1 square foot of area.

Both the Printer and DRE may be plugged into the same Duplex outlet.

System Voltage and Frequency are:

Circuit amperage capacity for 100 V /120 V must be ≥ 4 Amps, 50Hz to 60Hz.
Circuit amperage capacity for 230 V / 240V must be ≥ 2 Amps, 50 Hz to 60 Hz.

Space and Power for Test Support Equipment

The test support equipment, used to send images the EUT, requires space and power dedicated outside the test chamber.

The test support equipment and operator requires a minimum of 8 square feet of area. (2 feet X 4 feet). This includes a platform, table or shelf, for the equipment and space for the operator.

The test support equipment requires a standard 120 Volt 15 Amp outlet. This outlet must be within 6 feet of the test support equipment.

10. Test Set Up and Change-Over Times

Initial Equipment Set Up Time

The equipment can be set up for testing in ~45 minutes. This time includes unpacking the equipment, setting up the EUT, setting up and connecting the support equipment, allowing the DRE and support equipment software to come to a ready state, allowing the EUT to do a power on self test (POST).

Another 15 minutes should be allowed for testing the EUT for proper operation before any EMC testing commences.

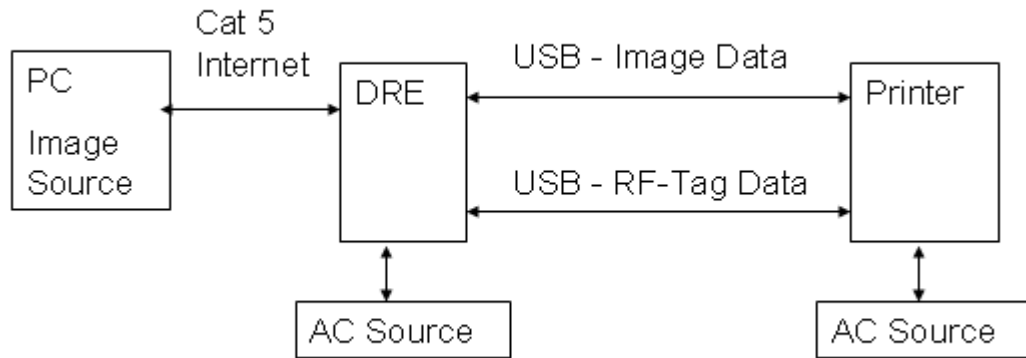
Configuration Change-Over Time

The amount of time for changing the configurations (i.e. Tray feed to Roll Feed) of the EUT should be approximately 5 minutes.

11. Test Support Equipment

<u>Description</u>	<u>Manufacturer</u>	<u>Model / Serial #</u>	<u>FCC ID #</u>
Lap Top Computer	Dell		
Cat 6 Ethernet Cable - 30 Ft			

12. Test Set-up Showing EUT, Test Support Equipment and Cabling



13. Clock, Oscillator and Data Rate frequencies

Description	Assembly	Part Number	Crystal or Oscillator	Frequency
RF Antenna Driver Board	9G8829	None	Crystal	13.560 MHz
DICOM Raster Engine	9G5274	The highest frequency referenced for FCC testing is 1.6 GHz.	Oscillator	14.31818 MHz – Super I/O
			Oscillator	32.768 KHz - RTC
			Oscillator	25 MHz – LAN (RTL8111C)
			Oscillator	100 MHz – 945 GSE Chipset
			Oscillator	96 MHz – 945 GSE Chipset
			Oscillator	33 MHz – 945 GSE Chipset
			Oscillator	48 MHz - USB I/F
			Oscillator	1.6 GHz - CPU core
			Oscillator	533 MHz – DDR2 Memory I/F
			Oscillator	400 MHz – DDR2 Memory I/F
			Oscillator	166 MHz – Core Render Clk
			Oscillator	200 MHz – Core Display Clk
			Oscillator	533 MHz - FSB

14. EMC Requirements Table

	USA	EU	Canada	AS/NZS	ROW
EMISSIONS		EN 60601-1-2: 2007 [Med. Dev. Dir.]	CAN/CSA – C22.2 NO. 60601-1-2-08		IEC 60601-1-2: 2007 (Modified)
Radiated Electric Field Emissions	47 CFR [FCC] Part 15 Subpart B Class A	EN 55011:2007 +A2:2007 Group 1 Class A [EMC Dir.]	ICES-003, Issue 4: 2004	AS/NZS CISPR 11:2003 +A1:2004, +A2:2006	CISPR 11:2003 / A2:2006
Telecomm- unications Standard	FCC Part 15 Subpart C Sections 15.207 & 15.209	EN 300 330-2 V1.3.1(2006-04) [RTTE Dir.]	IC RSS-210 Issue 7 IC RSS-Gen Issue 2		

15. Summary Test Table with Power - Voltages and Frequencies

Test Type	Requirement	Mains Voltage
Radiated Emissions	47 CFR [FCC] Part 15 Subpart B Class A ICES-003 Issue 4 EN/IEC 60601-1-2 [CAN/CSA –C22.2 NO. 60601-1-2-08] EN 55011 Class A	230 V 50 Hz Possible 100 V 50 Hz
Conducted Emissions	47 CFR Part 15 Subpart B ICES-0003 Issue 4 EN/IEC 60601-1-2 [CAN/CSA –C22.2 NO. 60601-1-2-08] EN 55011 Class A	120 V 60 Hz 230 V 50 Hz 100 V 50 Hz (Japan)
RFTag Emissions	EN 300 330 47 CFR Part 15 Subpart C IC-RSS-210 Issue 7 IC-RSS-Gen Issue 2	230 V 50 Hz 120 V 60 Hz

16. Pass/Fail Criteria

- DRYVIEW CHROMA shall pass the Radiated Emissions tests if all emissions are below the standard's limit line.
- Attempts will be made to achieve 4 dB **below** the limit line [-4dB guard band].

17. Supplies

DryView CHROMA Medical Paper, with RF-Tags, in both sheets (Size A4 – 210 MM X 297 MM) and roll feed (297 MM long, cut to A4 width of 210 MM).

18. Addendum

Reports One complete set of EMC Reports, for testing done for Roll Feed RF-Tag subsystem addition, will be produced for DRYVIEW CHROMA

Registration DRYVIEW Chroma Imaging System will be FCC and IC registered as an Intentional Radiator.

This will be an update for IC and a complete new registration for FCC.

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