

EMC EMISSIONS - TEST REPORT

Test Report No. **BC105646** Issue Date November 20, 2001

Model / Serial No. 930011-001, 12-001, 13-001/201283011, 012, 013

Product Type Panel Reader

Client Allflex-Boulder

Manufacturer Allflex-Boulder

License holder Allflex-Boulder

Address 2820 Wilderness Place- Suite A
Boulder, CO 80301

Test Criteria Applied **FCC Part 15** 47 CFR 15: Radio Frequency Devices
Class B & 15.209
PASS


Test Result

Test Project Number **BC105646**

References

Total Pages Including Appendices: 39


Reviewed By : Carlos Marrero


Reviewed By : Robert Cresswell

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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. 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.

EUT Received Date: 13 August 2001

Testing Start Date: 13 August 2001

Testing End Date: 13 August 2001

The tests were performed according to following regulations :

■ - FCC Part 15B & 15.209: 2001

■Class B

Emission Test Results:

Conducted emissions, Powerline 450 kHz- 30 MHz

Test Result	PASS		
Minimum limit margin	19.6 dB	at	6.98 MHz
Maximum limit exceeding	_____ dB	at	_____ MHz

Remarks: _____

Radiated emissions (electric field) 30 MHz - 1000 MHz

Test Result	PASS		
Minimum limit margin	6.5 dB	at	68.77 MHz
Maximum limit exceeding	_____ dB	at	_____ MHz

Remarks: _____

Radiated emissions (electric field) Intentional Radiator

Test Result	PASS		
Minimum limit margin	12.4 dB	at	.134 MHz
Maximum limit exceeding	_____ dB	at	_____ MHz

Remarks: _____

GENERAL REMARKS:

Intentional Radiator Data was collected under Project #BC105646 and Non-Intentional under BC105907

Modifications required to pass:

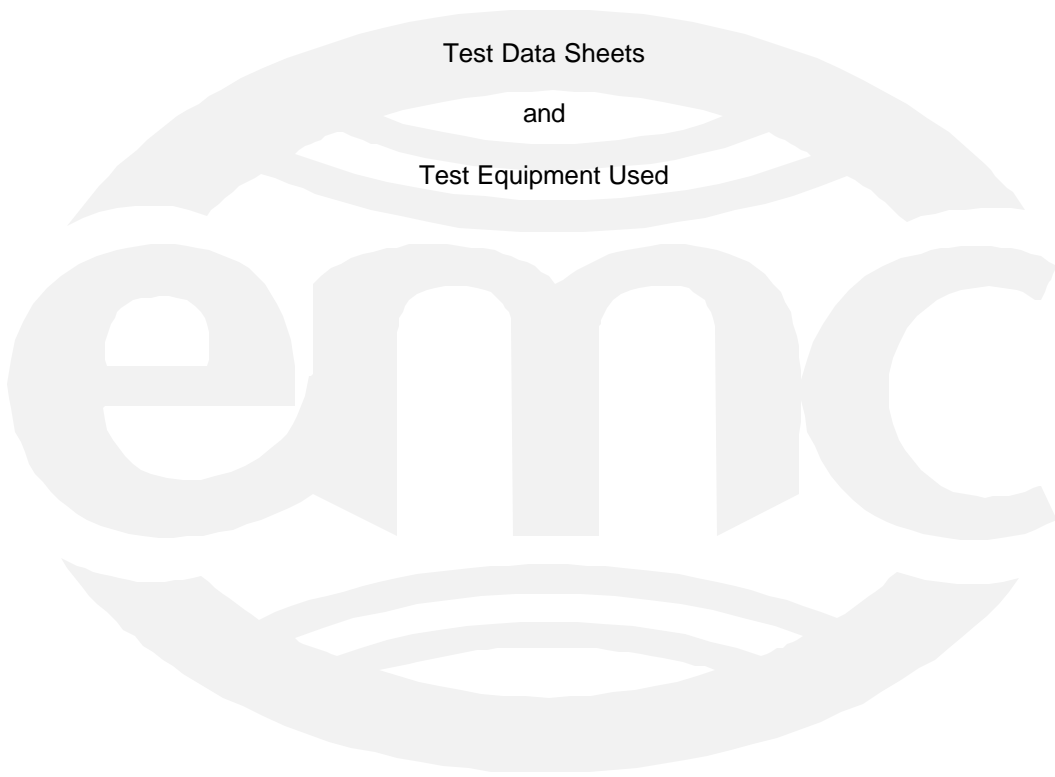
None

Test Specification Deviations: Additions to or Exclusions from:

The worst case antenna was tested and data from all 3 panel readers are included to make the comparison

Appendix A

Test Data Sheets
and
Test Equipment Used

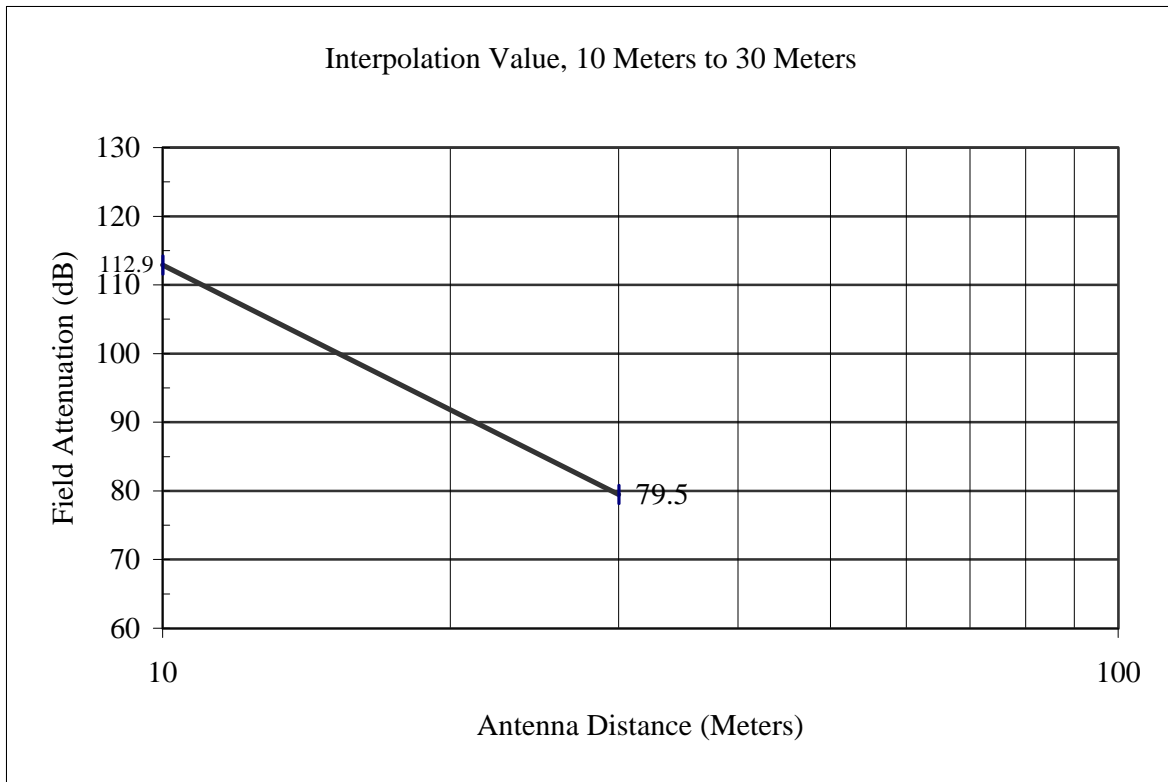


Intentional Radiator Data

Measured Radiated Fields, Between 10 Meter & 30 Meters, Interpolated to 300 Meters

Frequency (kHz)	10 Meters Amplitude (dBuV/m)	30 Meters Amplitude (dBuV/m)	Delta Amplitude (dB)	Interpolation Factor at 300 Meters (dB)	Interpolated Final Reading at 300 Meters (dBuV/m)	300 Meter Specification Limit (dBuV/m)
134	112.9	79.5	33.4	100.2	12.7	25.1

Note: The radiated field at 10 meters was corrected to 300 Meters using the slope shown on the below graph.



Measured Radiated Fields, Measured at 10 Meters, Interpolated to 300 Meters

Test Report #: BC105646 Run 3

Test Area: Pinewood Site 1

Test Method: FCC Part 15.209

EUT Model: 930013-001

EUT Power: Various dc values

EUT Serial Number: 014

Manufacturer: Allflex

EUT Description: Large Panel Reader

Note: The Large Panel Reader was tested at the following dc voltages: 6.5 Vdc Battery, 6 Vdc Power Supply, 6.5 Vdc Power Supply, 9 Vdc Power Supply, 12 Vdc Power Supply.

Signals measured were maximized by peaking the azimuth as well as the elevation axes of the loop antenna.

Frequency (kHz)	10 Meter	Cable / Ant. / Pre-amp			10 Meter to 300 Meter		300 Meter	Passing Margin (dB)	
	Amplitude Level (dBuV)	Transducers (dB)	(dB/m)	(dB)	Final Reading (dBuV/m)	Interpolation Factor Adjusted to 300 Meters (dB)	Interpolated Final Reading at 300 Meters (dBuV/m)		Specification Limit (dBuV/m)
Note: 6.5 Vdc Battery, Measurements made using an Average Detector									
134	102.9	10			112.9	100.2	12.7	25.1	12.4
269	31.6	10			41.6	100.2	-58.6	112.9	171.5
408	44.1	10			54.1	100.2	-46.1	112.9	159.0
946	28.9	10			38.9	100.2	-61.3	112.9	174.2
1210	24.4	10			34.4	100.2	-65.8	112.9	178.7
Note: 6.0 Vdc Power Supply									
134	101.6	10			111.6	100.2	11.4	25.1	13.7
Note: 7.0 Vdc Power Supply									
134	103	10			113.0	100.2	12.8	25.1	12.3
Note: 8.0 Vdc Power Supply									
134	104.2	10			114.2	100.2	14.0	25.1	11.1
Note: 9.0 Vdc Power Supply									
134	105.1	10			115.1	100.2	14.9	25.1	10.2
Note: 10.0 Vdc Power Supply									
134	106	10			116.0	100.2	15.8	25.1	9.3
Note: 11.0 Vdc Power Supply									

134	106.7	10	116.7	100.2	16.5	25.1	8.6
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Note: 12.0 Vdc Power Supply

134	107.6	10	117.6	100.2	17.4	25.1	7.7
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Note: No other emissions were measureable

**Additional Data For Small and Medium Panel Readers
Proving Large Panel Reader To Be Worst Case Tested**

Measured Radiated Fields, Measured at 10 Meters, Interpolated to 300 Meters

Test Report #: BC105646 Run 3

Test Area: Pinewood Site 1

Test Method: FCC part 15.209

EUT Model: 930011-001

EUT Power: Various dc values

EUT Serial Number: 014

Manufacturer: Allflex

EUT Description: Small Panel Reader

Note: The Small Panel Reader was tested at the following dc voltages: 6.5 Vdc Battery, 6 Vdc Power Supply, 6.5 Vdc Power Supply, 9 Vdc Power Supply, 12 Vdc Power Supply.

Signals measured were maximized by peaking the azimuth as well as the elevation axes of the loop antenna.

Frequency (kHz)	10 Meter	Cable / Ant. / Pre-amp			10 Meter to 300 Meter		300 Meter	Passing Margin (dB)	
	Amplitude Level (dBuV)	(dB)	(dB/m)	(dB)	Final Reading (dBuV/m)	Interpolation Factor Adjusted to 300 Meters (dB)	Interpolated Final Reading at 300 Meters (dBuV/m)		Specification Limit (dBuV/m)
Note: 6.5 Vdc Battery, Measurements made using an Average Detector									
134	84.5	10			94.5	100.2	-5.7	25.1	30.8
269	30.9	10			40.9	100.2	-59.3	94.5	153.8
403	39.1	10			49.1	100.2	-51.1	94.5	145.6
Note: 6.0 Vdc Power Supply									
134	83.7	10			93.7	100.2	-6.5	25.1	31.6
Note: 7.0 Vdc Power Supply									
134	85.0	10			95.0	100.2	-5.2	25.1	30.3
Note: 8.0 Vdc Power Supply									
134	86.3	10			96.3	100.2	-3.9	25.1	29.0
Note: 9.0 Vdc Power Supply									
134	87.3	10			97.3	100.2	-2.9	25.1	28.0

Note: 10.0 Vdc Power Supply

134	88.2	10	98.2	100.2	-2.0	25.1	27.1
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Note: 11.0 Vdc Power Supply

134	89.0	10	99	100.2	-1.2	25.1	26.3
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Note: 12.0 Vdc Power Supply

134	89.6	10	99.6	100.2	-0.6	25.1	25.7
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Note: No other emissions were measureable

Measured Radiated Fields, Measured at 10 Meters, Interpolated to 300 Meters

Test Report #: BC105646 Run 3

Test Area: Pinewood Site 1

Test Method: FCC Part 15.209

Test Date: 26-July 2001

EUT Model: 930012-001

EUT Power: Various dc values

EUT Serial Number: 014

Manufacturer: Allflex

EUT Description: Medium Panel Reader

Note: The Medium Panel Reader was tested at the following dc voltages: 6.5 Vdc Battery, 6 Vdc Power Supply, 6.5 Vdc Power Supply, 9 Vdc Power Supply, 12 Vdc Power Supply.

Signals measured were maximized by peaking the azimuth as well as the elevation axes of the loop antenna.

Frequency (kHz)	10 Meter	Cable / Ant. / Pre-amp			10 Meter to 300 Meter		300 Meter	Passing Margin (dB)	
	Amplitude Level (dBuV)	(dB)	(dB/m)	(dB)	Final Reading (dBuV/m)	Interpolation Factor Adjusted to 300 Meters (dB)	Interpolated Final Reading at 300 Meters (dBuV/m)		Specification Limit (dBuV/m)
Note: 6.5 Vdc Battery, Measurements made using an Average Detector									
134	93.6	10			103.6	100.2	3.4	25.1	21.7
269	33.1	10			43.1	100.2	-57.1	103.6	160.7
403	46.3	10			56.3	100.2	-43.9	103.6	147.5
938	31.0	10			41	100.2	-59.2	103.6	162.8
1210	26.5	10			36.5	100.2	-63.7	103.6	167.3
Note: 6.0 Vdc Power Supply									
134	92.7	10			102.7	100.2	2.5	25.1	22.6
Note: 7.0 Vdc Power Supply									
134	94.1	10			104.1	100.2	3.9	25.1	21.2
Note: 8.0 Vdc Power Supply									
134	95.2	10			105.2	100.2	5.0	25.1	20.1
Note: 9.0 Vdc Power Supply									
134	96.2	10			106.2	100.2	6.0	25.1	19.1

Note: 10.0 Vdc Power Supply

134	97.2	10	107.2	100.2	7.0	25.1	18.1
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Note: 11.0 Vdc Power Supply

134	98.1	10	108.1	100.2	7.9	25.1	17.2
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Note: 12.0 Vdc Power Supply

134	98.8	10	108.8	100.2	8.6	25.1	16.5
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Note: No other emissions were measureable

Non-Intentional Radiator Data


Conducted Electromagnetic Emissions



Test Report #: BC105907 Run 02 Test Area: Pinewood Site 1 Cond
 Test Method: FCC Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT 120VAC / 60 Hz for DC supply.
 EUT Serial #: 014 Temperature: 22.3 °C
 Manufacturer: Allflex Relative Humidity: 59 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 1 of 2

FREQ (MHz)	LEVEL (dBuV)	CABLE / LISN / ATTEN (dB)	FINAL (dBuV)	TEST POINT	DELTA1 (dB) FCC B	DELTA2 (dB) N/A
2.63	17.0 Qp	0.3 / 0.0 / -10.0	27.3	Neutral	-20.7	N/A
2.74	17.7 Qp	0.3 / 0.0 / -10.0	28.0	Neutral	-20.0	N/A
6.86	17.4 Qp	0.6 / 0.0 / -10.0	28.0	Neutral	-20.0	N/A
6.98	17.8 Qp	0.6 / 0.0 / -10.0	28.4	Neutral	-19.6	N/A
7.09	16.9 Qp	0.6 / 0.0 / -10.0	27.5	Neutral	-20.5	N/A
9.83	15.9 Qp	0.7 / 0.0 / -10.0	26.6	Neutral	-21.4	N/A
17.18	13.4 Qp	0.9 / 0.0 / -10.0	24.3	Neutral	-23.7	N/A
29.93	-1.1 Qp	1.2 / 0.0 / -10.0	10.1	Neutral	-37.9	N/A
2.63	17.1 Qp	0.3 / 0.0 / -10.0	27.4	Line 1	-20.6	N/A
2.75	17.8 Qp	0.3 / 0.0 / -10.0	28.1	Line 1	-19.9	N/A
6.87	17.1 Qp	0.6 / 0.0 / -10.0	27.7	Line 1	-20.3	N/A
6.98	17.8 Qp	0.6 / 0.0 / -10.0	28.4	Line 1	-19.6	N/A
7.09	17.0 Qp	0.6 / 0.0 / -10.0	27.6	Line 1	-20.4	N/A
9.84	16.1 Qp	0.7 / 0.0 / -10.0	26.8	Line 1	-21.2	N/A
17.18	13.2 Qp	0.9 / 0.0 / -10.0	24.1	Line 1	-23.9	N/A
8.31	14.4 Qp	0.6 / 0.0 / -10.0	25.0	Line 1	-23.0	N/A
29.93	-1.0 Qp	1.2 / 0.0 / -10.0	10.2	Line 1	-37.8	N/A

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Conducted Electromagnetic Emissions




Test Report #: BC105907 Run 02 Test Area: Pinewood Site 1 Cond
 Test Method: FCC Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT 120VAC / 60 Hz for DC supply.
 EUT Serial #: 014 Temperature: 22.3 °C
 Manufacturer: Allflex Relative Humidity: 59 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 2 of 2

FREQ (MHz)	LEVEL (dBuV)	CABLE / LISN / ATTEN (dB)	FINAL (dBuV)	TEST POINT	DELTA1 (dB) FCC B	DELTA2 (dB) N/A
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***** MEASUREMENT SUMMARY *****						
6.98	17.8 Qp	0.6 / 0.0 / -10.0	28.4	Line 1	-19.6	N/A
2.75	17.8 Qp	0.3 / 0.0 / -10.0	28.1	Line 1	-19.9	N/A
2.74	17.7 Qp	0.3 / 0.0 / -10.0	28.0	Neutral	-20.0	N/A
6.86	17.4 Qp	0.6 / 0.0 / -10.0	28.0	Neutral	-20.0	N/A
6.87	17.1 Qp	0.6 / 0.0 / -10.0	27.7	Line 1	-20.3	N/A
7.09	17.0 Qp	0.6 / 0.0 / -10.0	27.6	Line 1	-20.4	N/A
2.63	17.1 Qp	0.3 / 0.0 / -10.0	27.4	Line 1	-20.6	N/A
9.84	16.1 Qp	0.7 / 0.0 / -10.0	26.8	Line 1	-21.2	N/A
9.83	15.9 Qp	0.7 / 0.0 / -10.0	26.6	Neutral	-21.4	N/A
8.31	14.4 Qp	0.6 / 0.0 / -10.0	25.0	Line 1	-23.0	N/A
17.18	13.4 Qp	0.9 / 0.0 / -10.0	24.3	Neutral	-23.7	N/A
17.18	13.2 Qp	0.9 / 0.0 / -10.0	24.1	Line 1	-23.9	N/A
29.93	-1.0 Qp	1.2 / 0.0 / -10.0	10.2	Line 1	-37.8	N/A

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Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 1 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
30.09	35.3 Qp	0.2 / 13.2 / 28.0	20.7	V / 1.0 / 0.0	-19.3	N/A
32.06	37.4 Qp	0.2 / 13.0 / 28.0	22.6	V / 1.0 / 0.0	-17.4	N/A
33.61	36.9 Qp	0.2 / 12.8 / 28.0	21.9	V / 1.0 / 0.0	-18.1	N/A
34.41	40.4 Qp	0.2 / 12.7 / 28.0	25.3	V / 1.0 / 0.0	-14.7	N/A
36.08	40.1 Qp	0.2 / 12.5 / 28.0	24.9	V / 1.0 / 0.0	-15.1	N/A
38.18	38.6 Qp	0.2 / 12.2 / 28.0	23.1	V / 1.0 / 0.0	-16.9	N/A
42.02	41.5 Qp	0.3 / 11.7 / 27.9	25.5	V / 1.0 / 0.0	-14.5	N/A
44.18	38.6 Qp	0.3 / 11.4 / 27.9	22.4	V / 1.0 / 0.0	-17.6	N/A
48.08	36.5 Qp	0.3 / 10.9 / 27.9	19.7	V / 1.0 / 0.0	-20.3	N/A
51.58	44.1 Qp	0.3 / 10.4 / 27.9	26.9	V / 1.0 / 0.0	-13.1	N/A
60.17	36.0 Qp	0.4 / 9.3 / 27.9	17.7	V / 1.0 / 0.0	-22.3	N/A
68.77	34.2 Qp	0.4 / 8.7 / 27.8	15.5	V / 1.0 / 0.0	-24.5	N/A
73.05	32.7 Qp	0.5 / 8.7 / 27.8	14.0	V / 1.0 / 0.0	-26.0	N/A
78.79	32.6 Qp	0.5 / 8.2 / 27.8	13.5	V / 1.0 / 0.0	-26.5	N/A
85.94	37.2 Qp	0.5 / 7.7 / 27.8	17.6	V / 1.0 / 0.0	-22.4	N/A
111.71	33.1 Qp	0.6 / 10.3 / 27.8	16.2	V / 1.0 / 0.0	-27.3	N/A
130.07	31.2 Qp	0.6 / 12.0 / 27.8	16.0	V / 1.0 / 0.0	-27.5	N/A
32.06	37.4 Qp	0.2 / 13.0 / 28.0	22.6	V / 1.0 / 90.0	-17.4	N/A
33.61	37.2 Qp	0.2 / 12.8 / 28.0	22.3	V / 1.0 / 90.0	-17.7	N/A
36.08	40.2 Qp	0.2 / 12.5 / 28.0	25.0	V / 1.0 / 90.0	-15.0	N/A
68.77	41.2 Qp	0.4 / 8.7 / 27.8	22.6	V / 1.0 / 90.0	-17.4	N/A
73.05	34.6 Qp	0.5 / 8.7 / 27.8	15.9	V / 1.0 / 90.0	-24.1	N/A
85.94	45.4 Qp	0.5 / 7.7 / 27.8	25.8	V / 1.0 / 90.0	-14.2	N/A
48.98	38.1 Qp	0.3 / 10.7 / 27.9	21.3	V / 1.0 / 90.0	-18.7	N/A
33.61	37.1 Qp	0.2 / 12.8 / 28.0	22.2	V / 1.0 / 180.0	-17.8	N/A
36.08	40.5 Qp	0.2 / 12.5 / 28.0	25.2	V / 1.0 / 180.0	-14.8	N/A

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Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 2 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
38.18	38.2 Qp	0.2 / 12.2 / 28.0	22.7	V / 1.0 / 180.0	-17.3	N/A
48.08	36.2 Qp	0.3 / 10.9 / 27.9	19.5	V / 1.0 / 180.0	-20.5	N/A
51.58	44.4 Qp	0.3 / 10.4 / 27.9	27.2	V / 1.0 / 180.0	-12.8	N/A
111.71	33.0 Qp	0.6 / 10.3 / 27.8	16.1	V / 1.0 / 180.0	-27.4	N/A
32.06	38.6 Qp	0.2 / 13.0 / 28.0	23.8	V / 1.0 / 270.0	-16.2	N/A
33.61	37.2 Qp	0.2 / 12.8 / 28.0	22.2	V / 1.0 / 270.0	-17.8	N/A
34.41	40.5 Qp	0.2 / 12.7 / 28.0	25.4	V / 1.0 / 270.0	-14.6	N/A
38.18	39.1 Qp	0.2 / 12.2 / 28.0	23.6	V / 1.0 / 270.0	-16.4	N/A
48.08	36.7 Qp	0.3 / 10.9 / 27.9	19.9	V / 1.0 / 270.0	-20.1	N/A
51.58	45.0 Qp	0.3 / 10.4 / 27.9	27.8	V / 1.0 / 270.0	-12.2	N/A
60.17	36.1 Qp	0.4 / 9.3 / 27.9	17.8	V / 1.0 / 270.0	-22.2	N/A
68.77	43.5 Qp	0.4 / 8.7 / 27.8	24.8	V / 1.0 / 270.0	-15.2	N/A
73.05	36.0 Qp	0.5 / 8.7 / 27.8	17.3	V / 1.0 / 270.0	-22.7	N/A
The following were maximized between 30 and 200 MHz.						
42.02	42.8 Qp	0.3 / 11.7 / 27.9	26.8	V / 1.0 / 43.0	-13.2	N/A
85.94	45.2 Qp	0.5 / 7.7 / 27.8	25.7	V / 1.0 / 93.0	-14.3	N/A
51.58	46.8 Qp	0.3 / 10.4 / 27.9	29.6	V / 1.0 / 266.0	-10.4	N/A
51.59	46.1 Qp	0.3 / 10.4 / 27.9	29.0	H / 1.6 / 0.0	-11.0	N/A
60.17	42.1 Qp	0.4 / 9.3 / 27.9	23.9	H / 1.6 / 0.0	-16.1	N/A
68.77	50.6 Qp	0.4 / 8.7 / 27.8	31.9	H / 1.6 / 0.0	-8.1	N/A
85.94	45.1 Qp	0.5 / 7.7 / 27.8	25.6	H / 1.6 / 0.0	-14.4	N/A
130.07	32.2 Qp	0.6 / 12.0 / 27.8	17.1	H / 1.6 / 0.0	-26.4	N/A

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Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 3 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
130.07	33.5 Qp	0.6 / 12.0 / 27.8	18.4	H / 1.6 / 90.0	-25.1	N/A
No higher emissions found: 180Deg, Horizontal.						
No higher emisisions found: 270Deg, Horizontal.						
Noise floor.						
30.00	24.3 Qp	0.2 / 13.2 / 28.0	9.7	H / 1.6 / 270.0	-30.3	N/A
80.00	24.8 Qp	0.5 / 8.0 / 27.8	5.4	H / 1.6 / 270.0	-34.6	N/A
195.00	22.4 Qp	0.7 / 13.7 / 27.5	9.4	H / 1.6 / 270.0	-34.1	N/A
The following were maximized between 30 and 200 MHz.						
85.94	47.2 Qp	0.5 / 7.7 / 27.8	27.6	H / 3.4 / 18.0	-12.4	N/A
51.58	48.1 Qp	0.3 / 10.4 / 27.9	30.9	H / 2.2 / 10.0	-9.1	N/A
68.77	54.1 Qp	0.4 / 8.7 / 27.8	35.4	H / 2.6 / 14.0	-4.6	N/A
Maximized cables.						
68.77	57.1 Qp	0.4 / 8.7 / 27.8	38.4	H / 2.6 / 14.0	-1.6	N/A
Added Steward ferrite #28A2029-0A0						
68.77	52.2 Qp	0.4 / 8.7 / 27.8	33.5	H / 2.6 / 14.0	-6.5	N/A

Tested by: Mike Spataro
 Printed


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Reviewed by: Carlos Marrero
 Printed


 Signature


Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 4 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
200.05	28.2 Qp	0.8 / 12.5 / 27.4	14.0	V / 1.0 / 0.0	-29.5	N/A
200.46	26.9 Qp	0.8 / 12.5 / 27.4	12.7	V / 1.0 / 0.0	-30.8	N/A
206.17	29.0 Qp	0.8 / 13.0 / 27.4	15.3	V / 1.0 / 0.0	-28.2	N/A
223.33	30.5 Qp	0.8 / 15.1 / 27.3	19.0	V / 1.0 / 0.0	-27.0	N/A
226.20	26.4 Qp	0.8 / 15.2 / 27.3	15.0	V / 1.0 / 0.0	-31.0	N/A
231.93	26.1 Qp	0.8 / 15.3 / 27.3	14.9	V / 1.0 / 0.0	-31.1	N/A
240.52	29.4 Qp	0.8 / 15.1 / 27.3	18.1	V / 1.0 / 0.0	-27.9	N/A
240.05	26.8 Qp	0.8 / 15.1 / 27.3	15.4	V / 1.0 / 0.0	-30.6	N/A
248.96	26.4 Qp	0.8 / 14.9 / 27.2	15.0	V / 1.0 / 0.0	-31.0	N/A
251.96	26.2 Qp	0.8 / 14.8 / 27.2	14.5	V / 1.0 / 0.0	-31.5	N/A
255.65	26.5 Qp	0.8 / 14.6 / 27.2	14.7	V / 1.0 / 0.0	-31.3	N/A
257.70	32.1 Qp	0.8 / 14.4 / 27.2	20.2	V / 1.0 / 0.0	-25.8	N/A
266.28	27.7 Qp	0.8 / 14.0 / 27.2	15.4	V / 1.0 / 0.0	-30.6	N/A
274.86	36.8 Qp	0.9 / 14.0 / 27.1	24.6	V / 1.0 / 0.0	-21.4	N/A
283.46	28.7 Qp	0.9 / 14.2 / 27.1	16.7	V / 1.0 / 0.0	-29.3	N/A
292.04	36.1 Qp	0.9 / 13.9 / 27.0	23.8	V / 1.0 / 0.0	-22.2	N/A
309.22	36.1 Qp	0.9 / 13.5 / 27.1	23.4	V / 1.0 / 0.0	-22.6	N/A
326.39	32.2 Qp	1.0 / 14.4 / 27.2	20.5	V / 1.0 / 0.0	-25.5	N/A
343.56	29.2 Qp	1.0 / 14.6 / 27.3	17.5	V / 1.0 / 0.0	-28.5	N/A
357.88	27.6 Qp	1.0 / 15.0 / 27.3	16.3	V / 1.0 / 0.0	-29.7	N/A
417.99	30.7 Qp	1.1 / 16.3 / 27.7	20.4	V / 1.0 / 0.0	-25.6	N/A
420.85	32.9 Qp	1.1 / 16.4 / 27.7	22.7	V / 1.0 / 0.0	-23.3	N/A
423.71	30.3 Qp	1.1 / 16.4 / 27.7	20.1	V / 1.0 / 0.0	-25.9	N/A
426.58	31.9 Qp	1.2 / 16.3 / 27.8	21.6	V / 1.0 / 0.0	-24.4	N/A
429.44	36.1 Qp	1.2 / 16.3 / 27.8	25.7	V / 1.0 / 0.0	-20.3	N/A
432.31	31.6 Qp	1.2 / 16.3 / 27.8	21.2	V / 1.0 / 0.0	-24.8	N/A
435.17	33.6 Qp	1.2 / 16.4 / 27.8	23.4	V / 1.0 / 0.0	-22.6	N/A
438.04	34.0 Qp	1.2 / 16.4 / 27.8	23.8	V / 1.0 / 0.0	-22.2	N/A

Tested by: Mike Spataro
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Reviewed by: Carlos Marrero
 Printed


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Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 5 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
440.90	32.9 Qp	1.2 / 16.4 / 27.8	22.6	V / 1.0 / 0.0	-23.4	N/A
443.76	33.9 Qp	1.2 / 16.3 / 27.9	23.5	V / 1.0 / 0.0	-22.5	N/A
446.62	35.6 Qp	1.2 / 16.3 / 27.9	25.2	V / 1.0 / 0.0	-20.8	N/A
449.48	32.4 Qp	1.2 / 16.2 / 27.9	21.9	V / 1.0 / 0.0	-24.1	N/A
458.07	33.1 Qp	1.2 / 16.0 / 27.9	22.5	V / 1.0 / 0.0	-23.5	N/A
460.93	33.7 Qp	1.2 / 16.1 / 28.0	23.0	V / 1.0 / 0.0	-23.0	N/A
469.51	32.8 Qp	1.2 / 17.0 / 28.0	23.0	V / 1.0 / 0.0	-23.0	N/A
475.24	31.6 Qp	1.3 / 17.3 / 28.1	22.0	V / 1.0 / 0.0	-24.0	N/A
478.11	32.8 Qp	1.3 / 17.4 / 28.1	23.3	V / 1.0 / 0.0	-22.7	N/A
480.98	34.3 Qp	1.3 / 17.5 / 28.1	25.0	V / 1.0 / 0.0	-21.0	N/A
483.83	31.8 Qp	1.3 / 17.4 / 28.1	22.3	V / 1.0 / 0.0	-23.7	N/A
486.70	32.5 Qp	1.3 / 17.4 / 28.1	23.1	V / 1.0 / 0.0	-22.9	N/A
492.41	31.7 Qp	1.3 / 17.2 / 28.2	22.0	V / 1.0 / 0.0	-24.0	N/A
498.14	35.6 Qp	1.3 / 17.1 / 28.2	25.8	V / 1.0 / 0.0	-20.2	N/A
501.01	32.1 Qp	1.3 / 17.0 / 28.2	22.2	V / 1.0 / 0.0	-23.8	N/A
503.87	32.9 Qp	1.3 / 16.9 / 28.2	22.9	V / 1.0 / 0.0	-23.1	N/A
506.72	30.2 Qp	1.3 / 16.9 / 28.2	20.2	V / 1.0 / 0.0	-25.8	N/A
509.59	30.4 Qp	1.3 / 16.8 / 28.2	20.3	V / 1.0 / 0.0	-25.7	N/A
512.45	30.9 Qp	1.3 / 16.9 / 28.2	20.9	V / 1.0 / 0.0	-25.1	N/A
521.05	29.7 Qp	1.3 / 17.3 / 28.2	20.1	V / 1.0 / 0.0	-25.9	N/A
526.78	28.9 Qp	1.3 / 17.7 / 28.2	19.7	V / 1.0 / 0.0	-26.3	N/A
532.49	33.7 Qp	1.3 / 17.9 / 28.2	24.7	V / 1.0 / 0.0	-21.3	N/A
549.67	32.5 Qp	1.3 / 18.7 / 28.2	24.3	V / 1.0 / 0.0	-21.7	N/A
566.85	31.8 Qp	1.4 / 20.2 / 28.1	25.2	V / 1.0 / 0.0	-20.8	N/A
914.09	30.9 Qp	1.8 / 22.4 / 27.5	27.6	V / 1.0 / 0.0	-18.4	N/A
927.76	29.4 Qp	1.8 / 22.5 / 27.5	26.2	V / 1.0 / 0.0	-19.8	N/A
999.10	24.1 Qp	1.9 / 24.3 / 27.2	23.1	V / 1.0 / 0.0	-30.9	N/A

Tested by: Mike Spataro
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Reviewed by: Carlos Marrero
 Printed



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Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 6 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
206.17	34.1 Qp	0.8 / 13.0 / 27.4	20.5	V / 1.0 / 90.0	-23.0	N/A
223.33	36.2 Qp	0.8 / 15.1 / 27.3	24.8	V / 1.0 / 90.0	-21.2	N/A
226.20	28.9 Qp	0.8 / 15.2 / 27.3	17.5	V / 1.0 / 90.0	-28.5	N/A
231.93	30.2 Qp	0.8 / 15.3 / 27.3	19.1	V / 1.0 / 90.0	-26.9	N/A
240.52	36.7 Qp	0.8 / 15.1 / 27.3	25.3	V / 1.0 / 90.0	-20.7	N/A
309.22	36.6 Qp	0.9 / 13.5 / 27.1	23.9	V / 1.0 / 90.0	-22.1	N/A
326.39	33.9 Qp	1.0 / 14.4 / 27.2	22.1	V / 1.0 / 90.0	-23.9	N/A
480.98	34.1 Qp	1.3 / 17.5 / 28.1	24.8	V / 1.0 / 90.0	-21.2	N/A
521.05	30.1 Qp	1.3 / 17.3 / 28.2	20.5	V / 1.0 / 90.0	-25.5	N/A
914.09	32.6 Qp	1.8 / 22.4 / 27.5	29.3	V / 1.0 / 90.0	-16.7	N/A
999.10	28.1 Qp	1.9 / 24.3 / 27.2	27.1	V / 1.0 / 90.0	-26.9	N/A
953.30	30.2 Qp	1.8 / 23.9 / 27.4	28.5	V / 1.0 / 90.0	-17.5	N/A
956.15	28.1 Qp	1.8 / 24.1 / 27.4	26.7	V / 1.0 / 90.0	-19.3	N/A
959.02	28.6 Qp	1.8 / 24.3 / 27.3	27.4	V / 1.0 / 90.0	-18.6	N/A
965.03	24.4 Qp	1.8 / 24.8 / 27.3	23.8	V / 1.0 / 90.0	-30.2	N/A
964.74	29.1 Qp	1.8 / 24.8 / 27.3	28.4	V / 1.0 / 90.0	-25.6	N/A
970.46	29.9 Qp	1.9 / 25.2 / 27.3	29.7	V / 1.0 / 90.0	-24.3	N/A
973.34	28.5 Qp	1.9 / 25.2 / 27.3	28.3	V / 1.0 / 90.0	-25.7	N/A
976.19	28.2 Qp	1.9 / 25.2 / 27.3	28.0	V / 1.0 / 90.0	-26.0	N/A
981.91	28.7 Qp	1.9 / 25.1 / 27.3	28.4	V / 1.0 / 90.0	-25.6	N/A
984.78	28.4 Qp	1.9 / 24.9 / 27.3	27.9	V / 1.0 / 90.0	-26.1	N/A
987.64	28.9 Qp	1.9 / 24.7 / 27.2	28.3	V / 1.0 / 90.0	-25.7	N/A
990.50	29.4 Qp	1.9 / 24.6 / 27.2	28.6	V / 1.0 / 90.0	-25.4	N/A
993.38	28.8 Qp	1.9 / 24.5 / 27.2	28.0	V / 1.0 / 90.0	-26.0	N/A
446.62	37.1 Qp	1.2 / 16.3 / 27.9	26.6	V / 1.0 / 180.0	-19.4	N/A
458.07	33.4 Qp	1.2 / 16.0 / 27.9	22.7	V / 1.0 / 180.0	-23.3	N/A
460.93	34.8 Qp	1.2 / 16.1 / 28.0	24.1	V / 1.0 / 180.0	-21.9	N/A

Tested by: Mike Spataro 
 Printed Signature

Reviewed by: Carlos Marrero 
 Printed Signature


Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 7 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
469.51	35.0 Qp	1.2 / 17.0 / 28.0	25.1	V / 1.0 / 180.0	-20.9	N/A
475.24	32.8 Qp	1.3 / 17.3 / 28.1	23.2	V / 1.0 / 180.0	-22.8	N/A
478.11	33.6 Qp	1.3 / 17.4 / 28.1	24.2	V / 1.0 / 180.0	-21.8	N/A
480.98	37.8 Qp	1.3 / 17.5 / 28.1	28.5	V / 1.0 / 180.0	-17.5	N/A
487.82	34.0 Qp	1.3 / 17.3 / 28.1	24.5	V / 1.0 / 180.0	-21.5	N/A
240.52	36.8 Qp	0.8 / 15.1 / 27.3	25.4	V / 1.0 / 270.0	-20.6	N/A
251.96	27.1 Qp	0.8 / 14.8 / 27.2	15.5	V / 1.0 / 270.0	-30.5	N/A
257.70	33.2 Qp	0.8 / 14.4 / 27.2	21.3	V / 1.0 / 270.0	-24.7	N/A
266.28	27.9 Qp	0.8 / 14.0 / 27.2	15.6	V / 1.0 / 270.0	-30.4	N/A
417.99	32.5 Qp	1.1 / 16.3 / 27.7	22.2	V / 1.0 / 270.0	-23.8	N/A
420.85	34.2 Qp	1.1 / 16.4 / 27.7	24.1	V / 1.0 / 270.0	-21.9	N/A
423.71	32.5 Qp	1.1 / 16.4 / 27.7	22.3	V / 1.0 / 270.0	-23.7	N/A
426.58	34.4 Qp	1.2 / 16.3 / 27.8	24.1	V / 1.0 / 270.0	-21.9	N/A
429.44	39.0 Qp	1.2 / 16.3 / 27.8	28.6	V / 1.0 / 270.0	-17.4	N/A
432.31	33.6 Qp	1.2 / 16.3 / 27.8	23.3	V / 1.0 / 270.0	-22.7	N/A
435.17	35.2 Qp	1.2 / 16.4 / 27.8	24.9	V / 1.0 / 270.0	-21.1	N/A
440.90	34.6 Qp	1.2 / 16.4 / 27.8	24.3	V / 1.0 / 270.0	-21.7	N/A
443.76	36.4 Qp	1.2 / 16.3 / 27.9	26.0	V / 1.0 / 270.0	-20.0	N/A
446.62	41.4 Qp	1.2 / 16.3 / 27.9	31.0	V / 1.0 / 270.0	-15.0	N/A
449.48	37.2 Qp	1.2 / 16.2 / 27.9	26.7	V / 1.0 / 270.0	-19.3	N/A
458.07	38.6 Qp	1.2 / 16.0 / 27.9	27.9	V / 1.0 / 270.0	-18.1	N/A
460.93	39.7 Qp	1.2 / 16.1 / 28.0	29.0	V / 1.0 / 270.0	-17.0	N/A
469.51	38.9 Qp	1.2 / 17.0 / 28.0	29.0	V / 1.0 / 270.0	-17.0	N/A
475.24	36.4 Qp	1.3 / 17.3 / 28.1	26.8	V / 1.0 / 270.0	-19.2	N/A
478.11	37.3 Qp	1.3 / 17.4 / 28.1	27.9	V / 1.0 / 270.0	-18.1	N/A
480.98	41.5 Qp	1.3 / 17.5 / 28.1	32.1	V / 1.0 / 270.0	-13.9	N/A
483.83	34.9 Qp	1.3 / 17.4 / 28.1	25.4	V / 1.0 / 270.0	-20.6	N/A

Tested by: Mike Spataro
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Reviewed by: Carlos Marrero
 Printed


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Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 8 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
486.70	36.1 Qp	1.3 / 17.4 / 28.1	26.6	V / 1.0 / 270.0	-19.4	N/A
492.41	33.9 Qp	1.3 / 17.2 / 28.2	24.2	V / 1.0 / 270.0	-21.8	N/A
498.14	38.6 Qp	1.3 / 17.1 / 28.2	28.7	V / 1.0 / 270.0	-17.3	N/A
501.01	32.9 Qp	1.3 / 17.0 / 28.2	22.9	V / 1.0 / 270.0	-23.1	N/A
503.87	34.6 Qp	1.3 / 16.9 / 28.2	24.7	V / 1.0 / 270.0	-21.3	N/A
506.72	32.6 Qp	1.3 / 16.9 / 28.2	22.6	V / 1.0 / 270.0	-23.4	N/A
509.59	33.1 Qp	1.3 / 16.8 / 28.2	23.1	V / 1.0 / 270.0	-22.9	N/A
512.45	34.2 Qp	1.3 / 16.9 / 28.2	24.2	V / 1.0 / 270.0	-21.8	N/A
521.05	32.0 Qp	1.3 / 17.3 / 28.2	22.5	V / 1.0 / 270.0	-23.5	N/A
526.78	30.1 Qp	1.3 / 17.7 / 28.2	20.9	V / 1.0 / 270.0	-25.1	N/A
532.49	34.6 Qp	1.3 / 17.9 / 28.2	25.7	V / 1.0 / 270.0	-20.3	N/A
566.85	33.5 Qp	1.4 / 20.2 / 28.1	27.0	V / 1.0 / 270.0	-19.0	N/A
964.74	29.7 Qp	1.8 / 24.8 / 27.3	29.0	V / 1.0 / 270.0	-25.0	N/A
970.46	33.9 Qp	1.9 / 25.2 / 27.3	33.6	V / 1.0 / 270.0	-20.4	N/A
973.34	31.5 Qp	1.9 / 25.2 / 27.3	31.3	V / 1.0 / 270.0	-22.7	N/A
976.19	31.4 Qp	1.9 / 25.2 / 27.3	31.1	V / 1.0 / 270.0	-22.9	N/A
981.91	32.0 Qp	1.9 / 25.1 / 27.3	31.7	V / 1.0 / 270.0	-22.3	N/A
984.78	31.4 Qp	1.9 / 24.9 / 27.3	30.9	V / 1.0 / 270.0	-23.1	N/A
987.64	32.5 Qp	1.9 / 24.7 / 27.2	31.9	V / 1.0 / 270.0	-22.1	N/A
990.50	32.5 Qp	1.9 / 24.6 / 27.2	31.8	V / 1.0 / 270.0	-22.2	N/A
993.38	32.1 Qp	1.9 / 24.5 / 27.2	31.3	V / 1.0 / 270.0	-22.7	N/A
999.10	32.1 Qp	1.9 / 24.3 / 27.2	31.2	V / 1.0 / 270.0	-22.8	N/A
The following were maximized between 200 and 1000 MHz.						
953.30	37.2 Qp	1.8 / 23.9 / 27.4	35.6	V / 1.1 / 294.0	-10.4	N/A
914.09	36.1 Qp	1.8 / 22.4 / 27.5	32.7	V / 1.1 / 0.0	-13.3	N/A

Tested by: Mike Spataro
 Printed


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Reviewed by: Carlos Marrero
 Printed


 Signature


Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 9 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dB/m) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
480.98	42.3 Qp	1.3 / 17.5 / 28.1	33.0	V / 1.0 / 260.0	-13.0	N/A
469.51	39.5 Qp	1.2 / 17.0 / 28.0	29.7	V / 1.0 / 262.0	-16.3	N/A
446.62	42.6 Qp	1.2 / 16.3 / 27.9	32.1	V / 1.0 / 262.0	-13.9	N/A
601.20	32.2 Qp	1.4 / 20.3 / 28.1	25.8	H / 1.4 / 0.0	-20.2	N/A
661.32	30.4 Qp	1.5 / 21.1 / 28.0	24.9	H / 1.4 / 0.0	-21.1	N/A
No higher emissions found: 90Deg, Horizontal.						
No higher emissions found: 180Deg, Horizontal.						
No higher emissions found: 270Deg, Horizontal.						
Noise floor.						
204.27	22.2 Qp	0.8 / 12.8 / 27.4	8.3	H / 1.6 / 270.0	-35.2	N/A
505.00	21.9 Qp	1.3 / 16.9 / 28.2	11.9	H / 1.4 / 270.0	-34.1	N/A
995.00	21.1 Qp	1.9 / 24.5 / 27.2	20.2	H / 1.4 / 270.0	-33.8	N/A

Tested by: Mike Spataro
 Printed


 Signature

Reviewed by: Carlos Marrero
 Printed


 Signature

Radiated Electromagnetic Emissions




Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 10 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
------------	--------------	--------------------------------------	----------------	--------------------------	----------------------------	-----------------

***** MEASUREMENT SUMMARY *****						
68.77	57.1 Qp	0.4 / 8.7 / 27.8	38.4	H / 2.6 / 14.0	-6.5	N/A
51.58	48.1 Qp	0.3 / 10.4 / 27.9	30.9	H / 2.2 / 10.0	-9.1	N/A
953.30	37.2 Qp	1.8 / 23.9 / 27.4	35.6	V / 1.1 / 294.0	-10.4	N/A
85.94	47.2 Qp	0.5 / 7.7 / 27.8	27.6	H / 3.4 / 18.0	-12.4	N/A
480.98	42.3 Qp	1.3 / 17.5 / 28.1	33.0	V / 1.0 / 260.0	-13.0	N/A
42.02	42.8 Qp	0.3 / 11.7 / 27.9	26.8	V / 1.0 / 43.0	-13.2	N/A
914.09	36.1 Qp	1.8 / 22.4 / 27.5	32.7	V / 1.1 / 0.0	-13.3	N/A
446.62	42.6 Qp	1.2 / 16.3 / 27.9	32.1	V / 1.0 / 262.0	-13.9	N/A
34.41	40.5 Qp	0.2 / 12.7 / 28.0	25.4	V / 1.0 / 270.0	-14.6	N/A
36.08	40.5 Qp	0.2 / 12.5 / 28.0	25.2	V / 1.0 / 180.0	-14.8	N/A
60.17	42.1 Qp	0.4 / 9.3 / 27.9	23.9	H / 1.6 / 0.0	-16.1	N/A
32.06	38.6 Qp	0.2 / 13.0 / 28.0	23.8	V / 1.0 / 270.0	-16.2	N/A
469.51	39.5 Qp	1.2 / 17.0 / 28.0	29.7	V / 1.0 / 262.0	-16.3	N/A
38.18	39.1 Qp	0.2 / 12.2 / 28.0	23.6	V / 1.0 / 270.0	-16.4	N/A
460.93	39.7 Qp	1.2 / 16.1 / 28.0	29.0	V / 1.0 / 270.0	-17.0	N/A
498.14	38.6 Qp	1.3 / 17.1 / 28.2	28.7	V / 1.0 / 270.0	-17.3	N/A
429.44	39.0 Qp	1.2 / 16.3 / 27.8	28.6	V / 1.0 / 270.0	-17.4	N/A
44.18	38.6 Qp	0.3 / 11.4 / 27.9	22.4	V / 1.0 / 0.0	-17.6	N/A
33.61	37.2 Qp	0.2 / 12.8 / 28.0	22.3	V / 1.0 / 90.0	-17.7	N/A
458.07	38.6 Qp	1.2 / 16.0 / 27.9	27.9	V / 1.0 / 270.0	-18.1	N/A
478.11	37.3 Qp	1.3 / 17.4 / 28.1	27.9	V / 1.0 / 270.0	-18.1	N/A
959.02	28.6 Qp	1.8 / 24.3 / 27.3	27.4	V / 1.0 / 90.0	-18.6	N/A
48.98	38.1 Qp	0.3 / 10.7 / 27.9	21.3	V / 1.0 / 90.0	-18.7	N/A
566.85	33.5 Qp	1.4 / 20.2 / 28.1	27.0	V / 1.0 / 270.0	-19.0	N/A
475.24	36.4 Qp	1.3 / 17.3 / 28.1	26.8	V / 1.0 / 270.0	-19.2	N/A
30.09	35.3 Qp	0.2 / 13.2 / 28.0	20.7	V / 1.0 / 0.0	-19.3	N/A

Tested by: Mike Spataro
 Printed


 Signature

Reviewed by: Carlos Marrero
 Printed


 Signature

Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 11 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
449.48	37.2 Qp	1.2 / 16.2 / 27.9	26.7	V / 1.0 / 270.0	-19.3	N/A
956.15	28.1 Qp	1.8 / 24.1 / 27.4	26.7	V / 1.0 / 90.0	-19.3	N/A
486.70	36.1 Qp	1.3 / 17.4 / 28.1	26.6	V / 1.0 / 270.0	-19.4	N/A
927.76	29.4 Qp	1.8 / 22.5 / 27.5	26.2	V / 1.0 / 0.0	-19.8	N/A
443.76	36.4 Qp	1.2 / 16.3 / 27.9	26.0	V / 1.0 / 270.0	-20.0	N/A
48.08	36.7 Qp	0.3 / 10.9 / 27.9	19.9	V / 1.0 / 270.0	-20.1	N/A
601.20	32.2 Qp	1.4 / 20.3 / 28.1	25.8	H / 1.4 / 0.0	-20.2	N/A
532.49	34.6 Qp	1.3 / 17.9 / 28.2	25.7	V / 1.0 / 270.0	-20.3	N/A
970.46	33.9 Qp	1.9 / 25.2 / 27.3	33.6	V / 1.0 / 270.0	-20.4	N/A
240.52	36.8 Qp	0.8 / 15.1 / 27.3	25.4	V / 1.0 / 270.0	-20.6	N/A
483.83	34.9 Qp	1.3 / 17.4 / 28.1	25.4	V / 1.0 / 270.0	-20.6	N/A
435.17	35.2 Qp	1.2 / 16.4 / 27.8	24.9	V / 1.0 / 270.0	-21.1	N/A
661.32	30.4 Qp	1.5 / 21.1 / 28.0	24.9	H / 1.4 / 0.0	-21.1	N/A
223.33	36.2 Qp	0.8 / 15.1 / 27.3	24.8	V / 1.0 / 90.0	-21.2	N/A
503.87	34.6 Qp	1.3 / 16.9 / 28.2	24.7	V / 1.0 / 270.0	-21.3	N/A
274.86	36.8 Qp	0.9 / 14.0 / 27.1	24.6	V / 1.0 / 0.0	-21.4	N/A
487.82	34.0 Qp	1.3 / 17.3 / 28.1	24.5	V / 1.0 / 180.0	-21.5	N/A
440.90	34.6 Qp	1.2 / 16.4 / 27.8	24.3	V / 1.0 / 270.0	-21.7	N/A
549.67	32.5 Qp	1.3 / 18.7 / 28.2	24.3	V / 1.0 / 0.0	-21.7	N/A
492.41	33.9 Qp	1.3 / 17.2 / 28.2	24.2	V / 1.0 / 270.0	-21.8	N/A
512.45	34.2 Qp	1.3 / 16.9 / 28.2	24.2	V / 1.0 / 270.0	-21.8	N/A
420.85	34.2 Qp	1.1 / 16.4 / 27.7	24.1	V / 1.0 / 270.0	-21.9	N/A
426.58	34.4 Qp	1.2 / 16.3 / 27.8	24.1	V / 1.0 / 270.0	-21.9	N/A
309.22	36.6 Qp	0.9 / 13.5 / 27.1	23.9	V / 1.0 / 90.0	-22.1	N/A
987.64	32.5 Qp	1.9 / 24.7 / 27.2	31.9	V / 1.0 / 270.0	-22.1	N/A
292.04	36.1 Qp	0.9 / 13.9 / 27.0	23.8	V / 1.0 / 0.0	-22.2	N/A
438.04	34.0 Qp	1.2 / 16.4 / 27.8	23.8	V / 1.0 / 0.0	-22.2	N/A
990.50	32.5 Qp	1.9 / 24.6 / 27.2	31.8	V / 1.0 / 270.0	-22.2	N/A

Tested by: Mike Spataro
Printed

Michael Spataro
Signature

Reviewed by: Carlos Marrero
Printed

Carlos Marrero
Signature

Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 12 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
981.91	32.0 Qp	1.9 / 25.1 / 27.3	31.7	V / 1.0 / 270.0	-22.3	N/A
73.05	36.0 Qp	0.5 / 8.7 / 27.8	17.3	V / 1.0 / 270.0	-22.7	N/A
432.31	33.6 Qp	1.2 / 16.3 / 27.8	23.3	V / 1.0 / 270.0	-22.7	N/A
973.34	31.5 Qp	1.9 / 25.2 / 27.3	31.3	V / 1.0 / 270.0	-22.7	N/A
993.38	32.1 Qp	1.9 / 24.5 / 27.2	31.3	V / 1.0 / 270.0	-22.7	N/A
999.10	32.1 Qp	1.9 / 24.3 / 27.2	31.2	V / 1.0 / 270.0	-22.8	N/A
509.59	33.1 Qp	1.3 / 16.8 / 28.2	23.1	V / 1.0 / 270.0	-22.9	N/A
976.19	31.4 Qp	1.9 / 25.2 / 27.3	31.1	V / 1.0 / 270.0	-22.9	N/A
206.17	34.1 Qp	0.8 / 13.0 / 27.4	20.5	V / 1.0 / 90.0	-23.0	N/A
501.01	32.9 Qp	1.3 / 17.0 / 28.2	22.9	V / 1.0 / 270.0	-23.1	N/A
984.78	31.4 Qp	1.9 / 24.9 / 27.3	30.9	V / 1.0 / 270.0	-23.1	N/A
506.72	32.6 Qp	1.3 / 16.9 / 28.2	22.6	V / 1.0 / 270.0	-23.4	N/A
521.05	32.0 Qp	1.3 / 17.3 / 28.2	22.5	V / 1.0 / 270.0	-23.5	N/A
423.71	32.5 Qp	1.1 / 16.4 / 27.7	22.3	V / 1.0 / 270.0	-23.7	N/A
417.99	32.5 Qp	1.1 / 16.3 / 27.7	22.2	V / 1.0 / 270.0	-23.8	N/A
326.39	33.9 Qp	1.0 / 14.4 / 27.2	22.1	V / 1.0 / 90.0	-23.9	N/A
257.70	33.2 Qp	0.8 / 14.4 / 27.2	21.3	V / 1.0 / 270.0	-24.7	N/A
964.74	29.7 Qp	1.8 / 24.8 / 27.3	29.0	V / 1.0 / 270.0	-25.0	N/A
130.07	33.5 Qp	0.6 / 12.0 / 27.8	18.4	H / 1.6 / 90.0	-25.1	N/A
526.78	30.1 Qp	1.3 / 17.7 / 28.2	20.9	V / 1.0 / 270.0	-25.1	N/A
78.79	32.6 Qp	0.5 / 8.2 / 27.8	13.5	V / 1.0 / 0.0	-26.5	N/A
231.93	30.2 Qp	0.8 / 15.3 / 27.3	19.1	V / 1.0 / 90.0	-26.9	N/A
111.71	33.1 Qp	0.6 / 10.3 / 27.8	16.2	V / 1.0 / 0.0	-27.3	N/A
226.20	28.9 Qp	0.8 / 15.2 / 27.3	17.5	V / 1.0 / 90.0	-28.5	N/A
343.56	29.2 Qp	1.0 / 14.6 / 27.3	17.5	V / 1.0 / 0.0	-28.5	N/A
283.46	28.7 Qp	0.9 / 14.2 / 27.1	16.7	V / 1.0 / 0.0	-29.3	N/A
200.05	28.2 Qp	0.8 / 12.5 / 27.4	14.0	V / 1.0 / 0.0	-29.5	N/A
357.88	27.6 Qp	1.0 / 15.0 / 27.3	16.3	V / 1.0 / 0.0	-29.7	N/A

Tested by: Mike Spataro
 Printed

Michael Spataro
 Signature

Reviewed by: Carlos Marrero
 Printed

Carlos Marrero
 Signature


Radiated Electromagnetic Emissions



Test Report #: BC105907 Run 01 Test Area: Pinewood Site 1 (3m)
 Test Method: FCC Part 15 Test Date: 13-Aug-2001
 EUT Model #: 930013-001 EUT Power: 6VDC to EUT, 120VAC / 50 Hz to DC Supply.
 EUT Serial #: 014 Temperature: 21.0 °C
 Manufacturer: Allflex Relative Humidity: 52 %
 EUT Description: Panel Reader Air Pressure: 81 kPa
 Notes: _____ Page: 13 of 13

FREQ (MHz)	LEVEL (dBuV)	CABLE / ANT / PREAMP (dB) (dBm) (dB)	FINAL (dBuV/m)	POL / HGT / AZ (m) (DEG)	DELTA1 (dB) FCC B (< 1GHz)	DELTA2 (dB) N/A
965.03	24.4 Qp	1.8 / 24.8 / 27.3	23.8	V / 1.0 / 90.0	-30.2	N/A
30.00	24.3 Qp	0.2 / 13.2 / 28.0	9.7	H / 1.6 / 270.0	-30.3	N/A
266.28	27.9 Qp	0.8 / 14.0 / 27.2	15.6	V / 1.0 / 270.0	-30.4	N/A
251.96	27.1 Qp	0.8 / 14.8 / 27.2	15.5	V / 1.0 / 270.0	-30.5	N/A
240.05	26.8 Qp	0.8 / 15.1 / 27.3	15.4	V / 1.0 / 0.0	-30.6	N/A
200.46	26.9 Qp	0.8 / 12.5 / 27.4	12.7	V / 1.0 / 0.0	-30.8	N/A
248.96	26.4 Qp	0.8 / 14.9 / 27.2	15.0	V / 1.0 / 0.0	-31.0	N/A
255.65	26.5 Qp	0.8 / 14.6 / 27.2	14.7	V / 1.0 / 0.0	-31.3	N/A
995.00	21.1 Qp	1.9 / 24.5 / 27.2	20.2	H / 1.4 / 270.0	-33.8	N/A
195.00	22.4 Qp	0.7 / 13.7 / 27.5	9.4	H / 1.6 / 270.0	-34.1	N/A
505.00	21.9 Qp	1.3 / 16.9 / 28.2	11.9	H / 1.4 / 270.0	-34.1	N/A
80.00	24.8 Qp	0.5 / 8.0 / 27.8	5.4	H / 1.6 / 270.0	-34.6	N/A
204.27	22.2 Qp	0.8 / 12.8 / 27.4	8.3	H / 1.6 / 270.0	-35.2	N/A

Tested by: Mike Spataro
 Printed


 Signature

Reviewed by: Carlos Marrero
 Printed


 Signature

Equipment Report

13-Aug-2001

Project Number: BC105907,5646

Project Date: 13-Aug-2001

Company Name: Allflex

Equip ID	Manufacturer	Model Number	Serial Number	Description	Date	Calibration Interval	Due	Cal Code
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Test Performed C Conducted Emissions

8184	RHODE & SCHWARZ	ESH2-Z5	830364/002	LISN 50 ohm/50uH 3 line (1kHz - 30 MHz)	23-Mar-2001	12	23-Mar-2002	B
8189	HEWLETT PACKARD	11947A	2820A00277	Transient Limiter	14-Dec-2000	12	14-Dec-2001	G
8191	RHODE & SCHWARTZ	ESHS 30	842806/001	EMI Test Receiver	07-Mar-2001	12	07-Mar-2002	G

Test Performed R Radiated Emissions

7514	A.H.SYSTEMS	SAS-200/512	104	Log Periodic Antenna (200-1500 MHz)	12-Sep-2000	12	12-Sep-2001	G
8005	HEWLETT PACKARD	8447F	3113A04923	Option H64 Dual Preamp	04-Apr-2001	12	04-Apr-2002	B
8179	EMCO	3108	2149	Biconical Dipole Antenna (30-300 MHz)	18-Jun-2001	12	18-Jun-2002	G
8213	HEWLETT PACKARD	8566B	2410A00154	Spectrum Analyzer (dc-22 GHz)	04-May-2001	12	04-May-2002	G
8214	HEWLETT PACKARD	85662A	2403A08749	Display Section	04-May-2001	12	04-May-2002	G

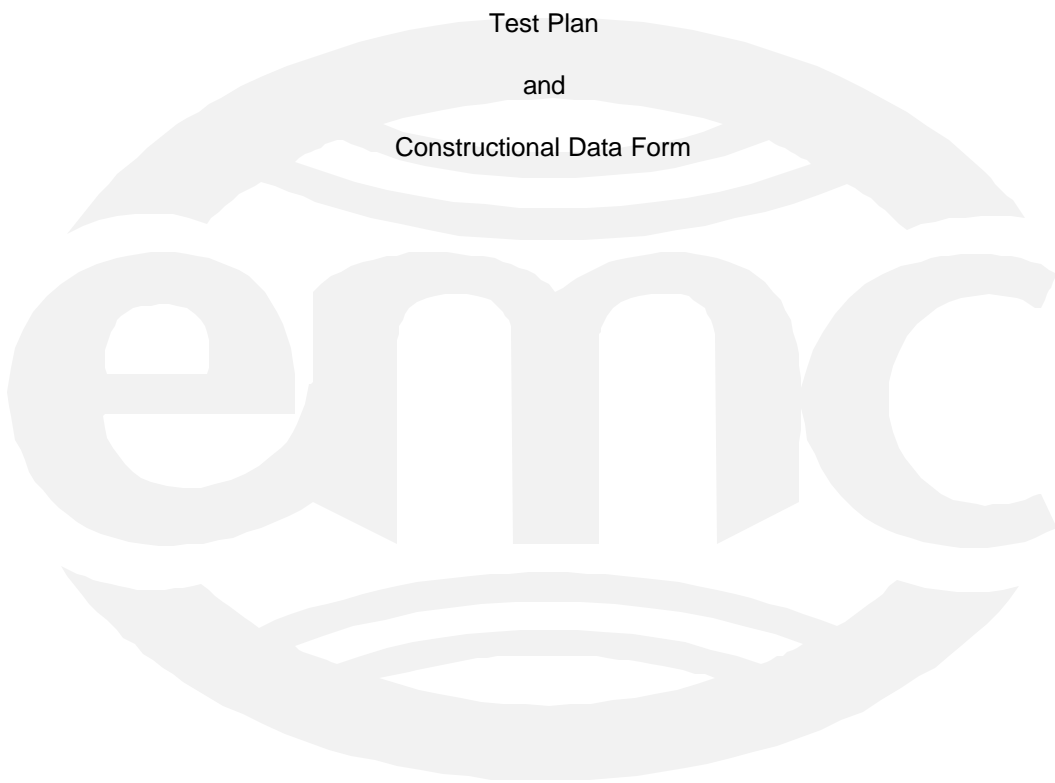
8345 HEWLETT-PACKARD 85650A 2811A01300 Q.P Adapter 24-Feb-2001 6 25-Aug-2001 G

Cal Code Legend: G=Out Source, Y=No Cal required, R=Out of Service, B=In-House Verification Required

1 of 1

Appendix B

Test Plan
and
Constructional Data Form



EMC Test Plan and Constructional Data Form



PLEASE COMPLETE THIS DOCUMENT IN FULL, ENTERING N/A IF THE FIELD IS NOT APPLICABLE.

**Applicant -- NOTE: This information will be input into your test report as shown below.
Press the F1 key at any time to get HELP for the current field selected.**

Company: Allflex USA, Inc.

Address: 2820 Wilderness Place
Suite A
Boulder, CO 80301

Contact: Bob Stewart Position: Technical Director

Phone: 303/449-4509 Fax: 303/449-4529

E-mail Address: rstewart@allflex-boulder.com

General Equipment Description -- NOTE: This information will be input into your test report as shown below.

EUT Description Radio frequency identification scanning device for passive transponder devices

EUT Name ISO Compatible RFID Panel Reader

Model No.: 930013-001 Serial No.: S/N's 014, 002, & 014

Product Options: 3 different sizes: 10"x12", 16"x24", and 24"x48"

Configurations to be tested: All 3 to be tests for intentional radiator limit; -60120 unit only for IEM

Test Objective

- EMC Directive 89/336/EEC (EMC) FCC: Class A B Part 15
Std: VCCI: Class A B
- Machinery Directive 89/392/EEC (EMC) BCIQ: Class A B
Std: Canada: Class A B
- Medical Device Directive 93/42/EEC (EMC) Australia: Class A B
Std: Other: FCC CFR-47, Part 15.209 Intentional
- Vehicle Directive 72/245/EEC (EMC)
Std: _____
- FDA Reviewers Guidance for Premarket Notification Submissions (EMC)



EMC Test Plan and Constructional Data Form

TÜV Product Service Certification Requested

- | | |
|--|---|
| <input type="checkbox"/> Attestation of Conformity (AoC) | <input checked="" type="checkbox"/> International EMC Mark (IEM) |
| <input type="checkbox"/> Certificate of Conformity (CoC) | <input type="checkbox"/> Compliance Document |
| Protection Class (N/A for vehicles) | <input type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III |
- (Press **F1** when field is selected to show additional information on Protection Class.)

Attendance

Test will be: Attended by the customer Unattended by the customer

Failure - Complete this section if testing will not be attended by the customer.

- If a failure occurs, TÜV Product Service should:
- Call contact listed above, if not available then stop testing. (After hrs phone): _____
 - Continue testing to complete test series.
 - Continue testing to define corrective action.
 - Stop testing.

EUT Specifications and Requirements

Length: (listed above) Width: (listed above) Height: <22mm Weight: 2, 6, & 18 kg

Power Requirements

Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)

Voltage: 6-12 VDC (If battery powered, make sure battery life is sufficient to complete testing.)

of Phases: n/a

Current (Amps/phase(max)): n/a Current (Amps/phase(nominal)): n/a

Other n/a

Other Special Requirements

Intentional radiator test limit is defined in Part 15.209 as 2400/Fc uV/m at 300 meters, which for this device = 2400/134.2KHz = 17.9 uV/m. If testing is conducted at 10 meters or 30 meters, an extrapolation factor must be measured, as assuming 40dBuV/decade of distance is not accurate for the near field at this frequency. Extrapolation factor will be closer to 60dBuV/decade.

Typical Installation and/or Operating Environment

(ie. Hospital, Small Business, Industrial/Factory, etc.)
 Equipment is used for reading electronic identification tags on livestock in farm, feedlot, and packing plant environments (all industrial class).

EMC Test Plan and Constructional Data Form



EUT Power Cable			
<input checked="" type="checkbox"/> Permanent	OR	<input type="checkbox"/> Removable	Length (in meters): <u>3 meters (extended)</u>
<input checked="" type="checkbox"/> Shielded	OR	<input type="checkbox"/> Unshielded	
<input type="checkbox"/> Not Applicable			

EMC Test Plan and Constructional Data Form



EUT Interface Ports and Cables												
Interface				Shielding								
Type	Analog	Digital	Qty	Yes	No	Type	Termination	Connector Type	Port Termination	Length (in meters)	Removable	Permanent
EXAMPLE:												
RS232	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Foil over braid	Coaxial	Metallized 9-pin D-Sub	Characteristic Impedance	6	<input checked="" type="checkbox"/>	<input type="checkbox"/>
RS232	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Foil w/drain wire		Plastic DB9(f)		3	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>	<input type="checkbox"/>
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EMC Test Plan and Constructional Data Form

EUT Software

Revision Level: V1.03

Description: Software is downloadable/upgradeable installed in flash memory based embedded microcontroller. Software decodes a received signal and transmits the hexadecimal code via the RS232 serial port. Device can be configured via commands issued via RS232 port for various operational modes and output data formats

EUT Operating Modes to be Tested -- list the operating modes to be used during test. It is recommended the equipment be tested while operating in a typical operation mode. FCC testing of personal computers and/or peripherals requires that a simple program generate a complete line of upper case H's. Provide a general description of all software, firmware, and PLD algorithms used in the equipment. List all code modules as described above, with the revision level used during testing. Consult with your TÜV Product Service Representative if additional assistance is required.

1. Mode 1: Intentional Radiator - EUT to be placed in continuous scan mode where 134.2 KHz signal is radiated in an 80mSec on / 30mSec off burst pattern
2. Mode 2: Unintentional Radiator - EUT to be placed in idle mode (not scanning) and check for EMC emissions compliance.
3. Mode 3: Unintentional Radiator - EUT is commanded to read transponders and send data to PC via RS232 interface to check for EMC emissions compliance.

EUT System Components -- List and describe all components which are part of the EUT. For FCC testing a minimum configuration is required. (ie. Mouse, Printer, Monitor, External Disk Drive, Motherboard, etc.)

Description	Model #	Serial #	FCC ID #
none - EUT entirely self-contained			

EMC Test Plan and Constructional Data Form

Support Equipment -- List and describe all support equipment which is not part of the EUT. (i.e. peripherals, simulators, etc)			
<i>Description</i>	<i>Model #</i>	<i>Serial #</i>	<i>FCC ID #</i>
Toshiba Portege Laptop PC	T3400	03421977	CJ6UN827
Linear Pwr Supply - 6-12 VDC	Tektronix PS280	TW59932	n/a
Allflex Test Transponders			n/a

Oscillator Frequencies			
<i>Frequency</i>	<i>Derived Frequency</i>	<i>Component # / Location</i>	<i>Description of Use</i>
17.1776 MHz		X1	uC Clock
17.1776 MHz	134.2 KHz	U13 (74HC4040)	Exciter signal output
~200KHz	Data Bit Rate	U15 (ADM202E)	RS232 Serial Interface

Power Supply			
<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Type</i>
n/a			<input type="checkbox"/> Switched-mode: (Frequency) _____ <input type="checkbox"/> Linear <input type="checkbox"/> Other: _____
			<input type="checkbox"/> Switched-mode: (Frequency) _____ <input type="checkbox"/> Linear <input type="checkbox"/> Other: _____

Power Line Filters		
<i>Manufacturer</i>	<i>Model #</i>	<i>Location in EUT</i>
n/a		



EMC Test Plan and Constructional Data Form

Critical EMI Components (Capacitors, ferrites, etc.)				
<i>Description</i>	<i>Manufacturer</i>	<i>Part # or Value</i>	<i>Qty</i>	<i>Component # / Location</i>
n/a				

EMC Critical Detail – Describe other EMC Design details used to reduce high frequency noise.

- (a) PCB is 4 layer with intermediate ground and power planes
- (b) power/data cable is foil shielded and terminated to DB9 connector shell
- (c) RS232 interface device is 89/336/EEC EMC Directive compliant

(PLEASE INSERT "ELECTRONIC SIGNATURE" BELOW IF POSSIBLE)

Authorization Signatures

Robert C. Stewart	16-Jul-01
_____	_____
Customer authorization to perform tests according to this test plan.	Date
Robert C. Stewart	16-Jul-01
_____	_____
Test Plan/CDF Prepared By (please print)	Date
<i>Robert Cresswell</i>	9-Sep-01
_____	_____
Reviewed by TÜV Product Service Associate	Date