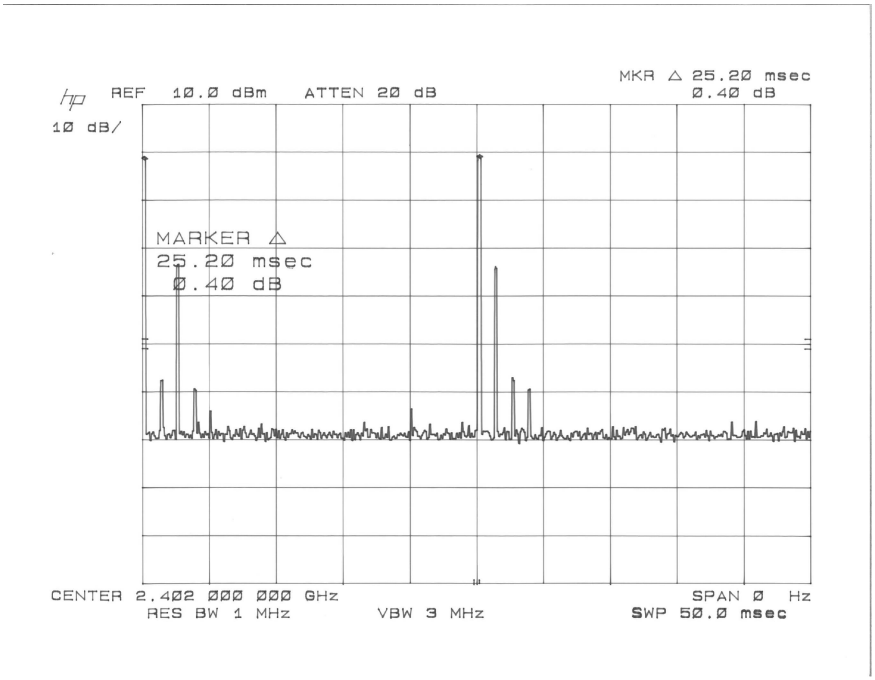
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Max Time on Channel Freq**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate		**Clause** 15.247(a,1,iii)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Center Freq Chl	Pulse Duration	Time to Next Pulse	Calculated on time	Allowed On Time	Pass/Fail
2402MHz	0.000200 Sec	25.20 mSec	0.2508 sec	0.4sec in 31.6sec window	Pass

Single channel on time = 0.0002 sec = 0.2msec = 200usec
Calculated on time = 31600msec / 25.20msec * 0.2msec = 250.8msec = 0.2508 seconds
Limit is based upon 0.4seconds times number of hopping channels = 0.4 * 79 = 31.6sec



15.247 (b,2) Maximum Peak Output Power (Conducted)

Test Procedure:

Peak Output Power

Use the following spectrum analyzer settings:
Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel
RBW > the 20 dB bandwidth of the emission being measured
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power (see the NOTE above regarding external attenuation and cable loss). The limit is specified in one of the subparagraphs of this Section. Submit this plot. A peak responding power meter may be used instead of a spectrum analyzer.

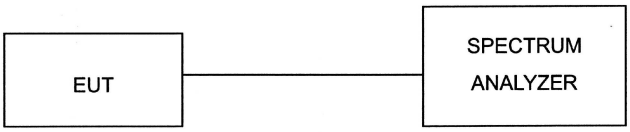
The transmitter output was connected to a spectrum analyzer.

Requirement: The maximum peak output power shall not exceed .125W (21dBm)

EUT operating conditions:

The software provided by the client to enable the EUT to transmit continuously at the low, mid, and upper channels respectively.

Test Set Up:

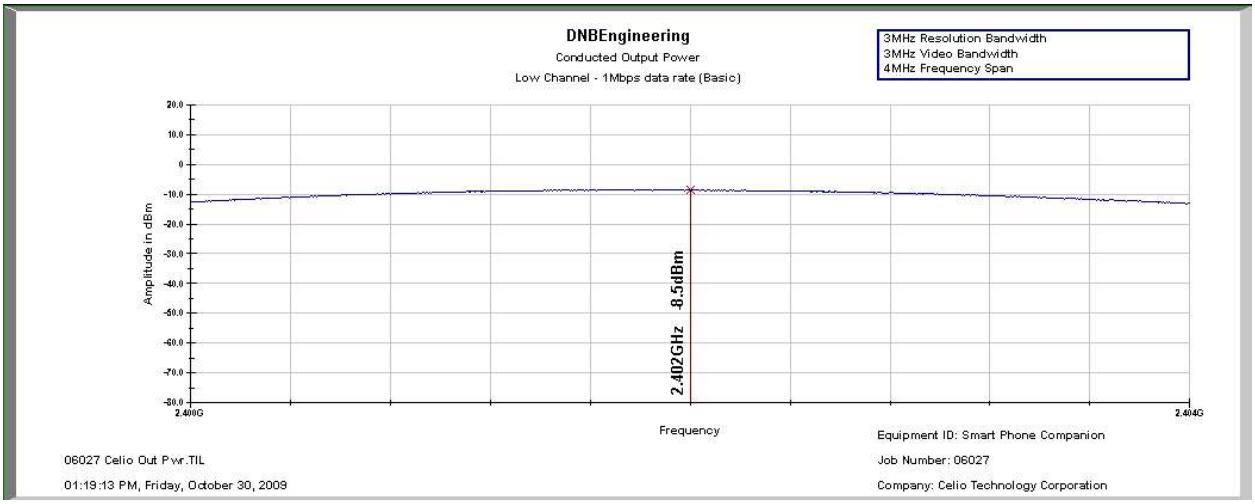


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard**
Customer:	Celio Technology Corporation		FCC Part 15
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion		**Clause** 15.247(b,1)
	1Mbps data rate (Basic data rate) - Low Channel		

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2402	-8.5	20.97	-29.47	0.141	125	-124.859	Pass

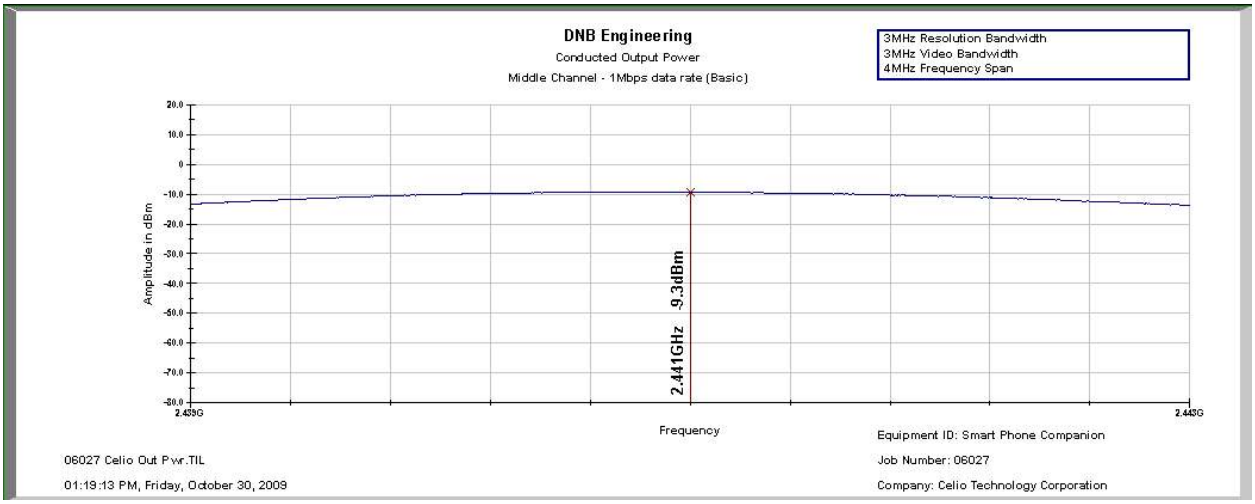


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate) - Mid Channel		**Clause** 15.247(b,1)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2441	-9.3	20.97	-30.27	0.117	125	-124.883	Pass

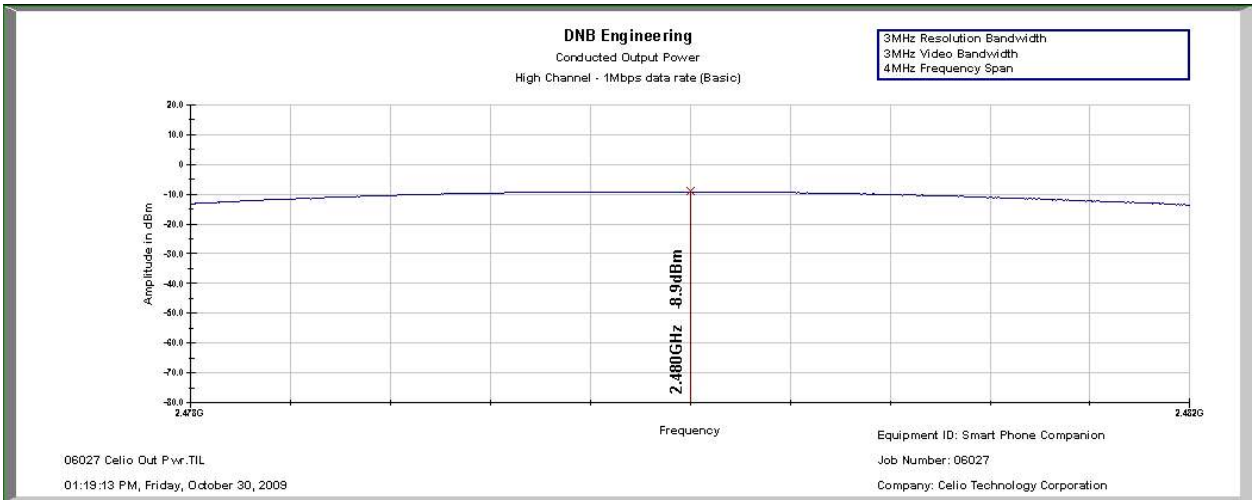


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate) - High Channel		**Clause** 15.247(b,1)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2480	-8.9	20.97	-29.87	0.129	125	-124.871	Pass

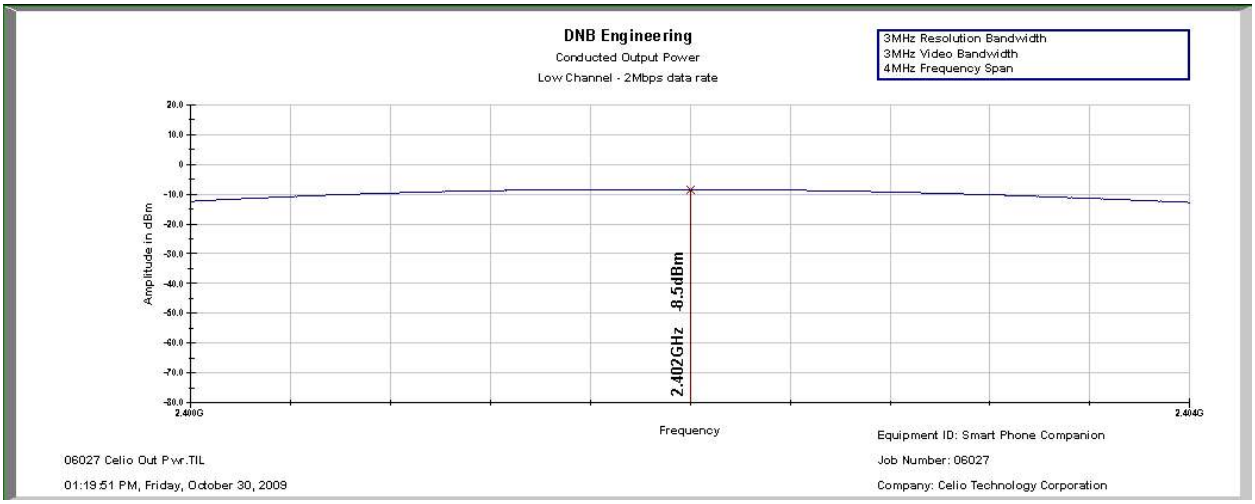


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate - Low Channel		**Clause** 15.247(b,1)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2402	-8.5	20.97	-29.47	0.141	125	-124.859	Pass

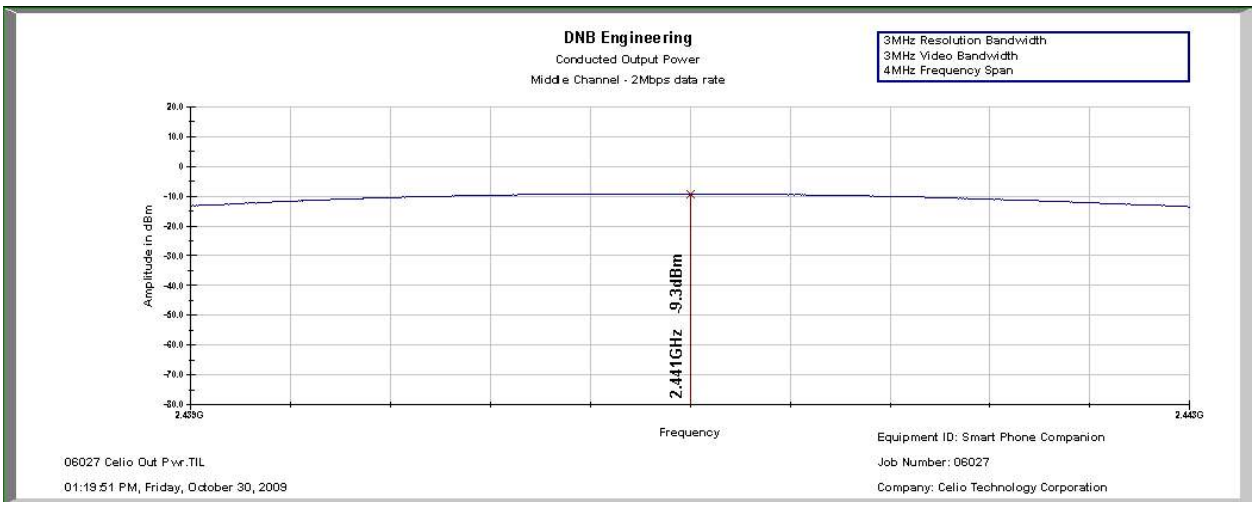


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate - Mid Channel		**Clause** 15.247(b,1)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2441	-9.3	20.97	-30.27	0.117	125	-124.883	Pass

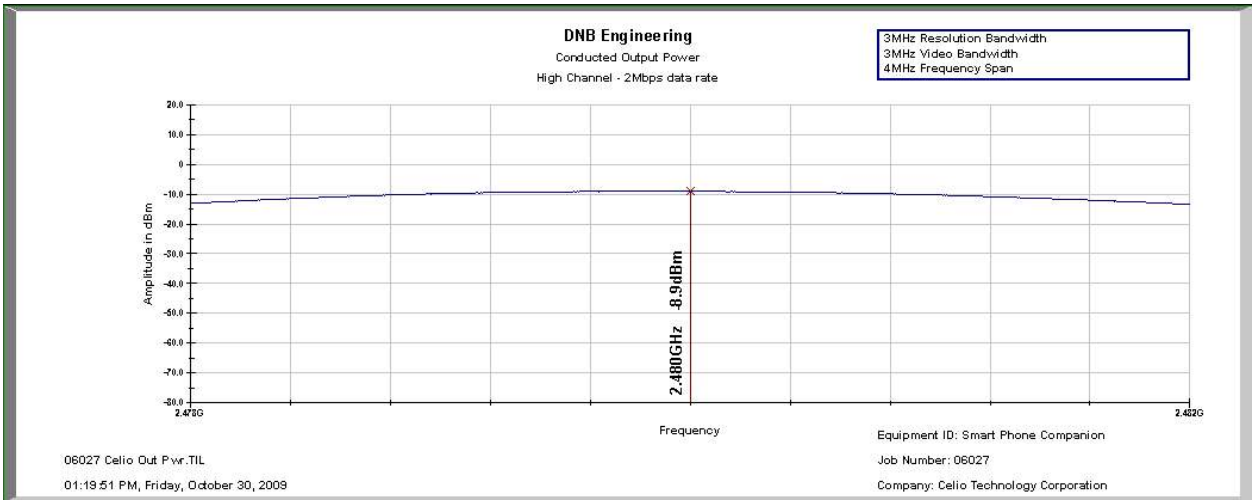


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate - High Channel		**Clause** 15.247(b,1)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2480	-8.9	20.97	-29.87	0.129	125	-124.871	Pass

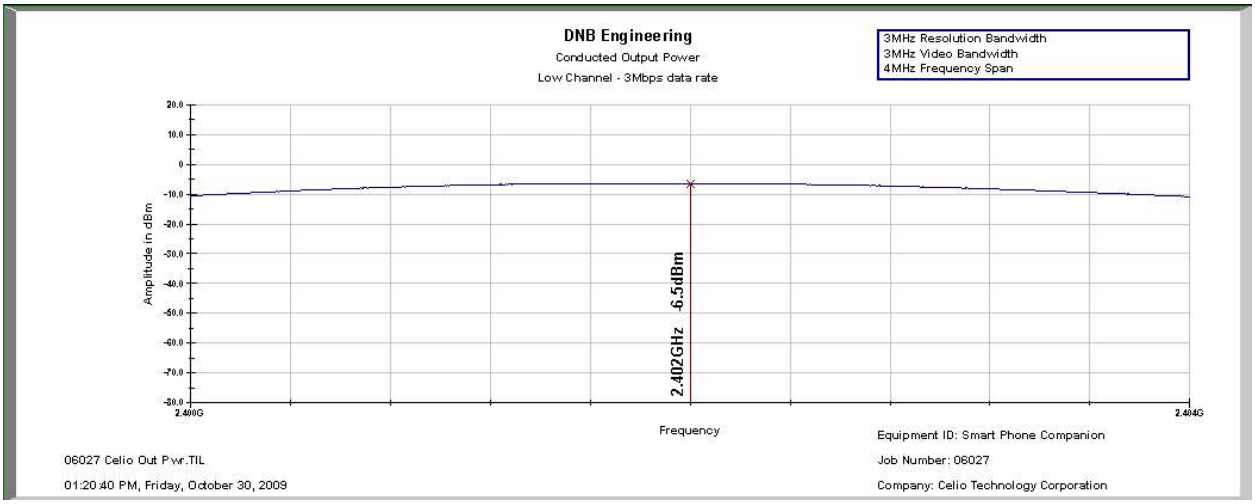


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate - Low Channel		**Clause** 15.247(b,1)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2402	-6.5	20.97	-27.47	0.224	125	-124.776	Pass

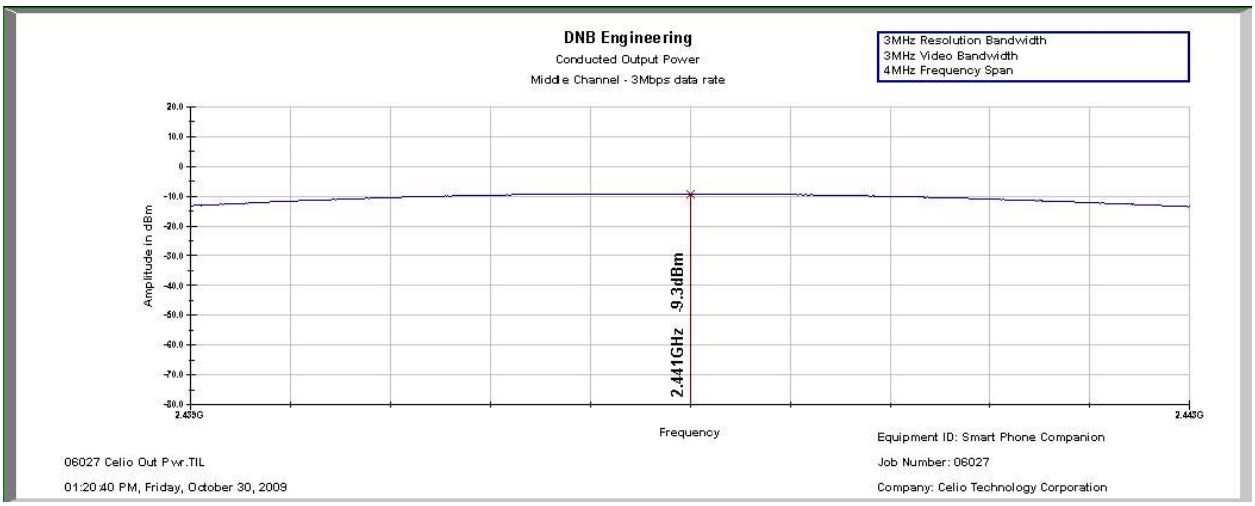


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate - Mid Channel		**Clause** 15.247(b,1)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2441	-9.3	20.97	-30.27	0.117	125	-124.883	Pass

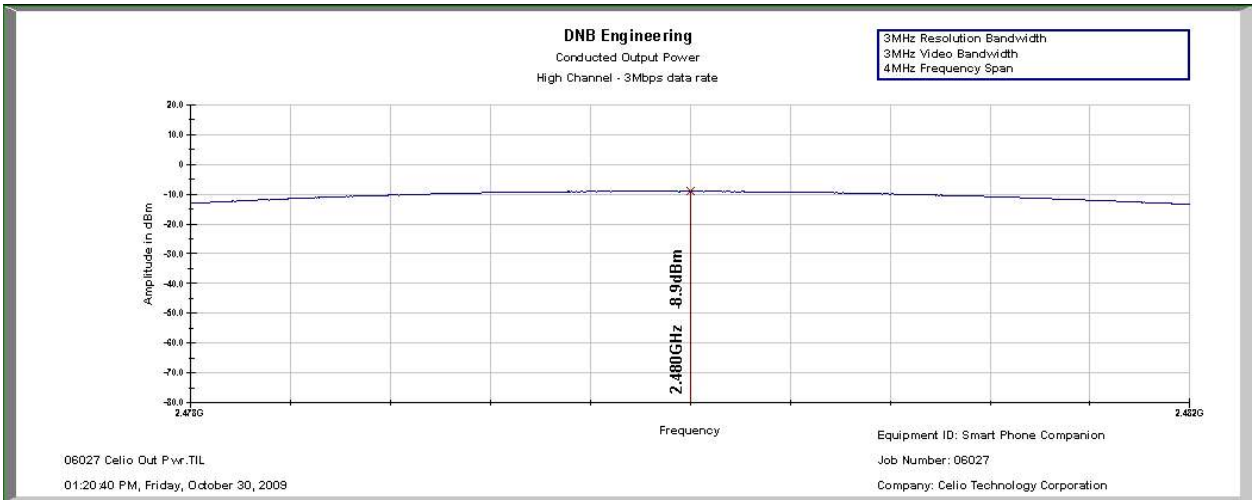


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Peak Output Power** (Cond)	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate - High Channel		**Clause** 15.247(b,1)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Freq MHz	Meas Peak Pwr (dBm)	Limit (dBm)	Delta (dBm)	Meas Peak Pwr (mW)	Limit (mW)	Delta (mW)	Pass/Fail
2480	-8.9	20.97	-29.87	0.129	125	-124.871	Pass



15.247 (d) Conducted Band Edge Measurements and Out of Band Emissions

Band-edge Compliance of RF Conducted Emissions

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the emission operating on the channel closest to the bandedge, as well as any modulation products which fall outside of the authorized band of operation
RBW ≥ 1% of the span
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Allow the trace to stabilize. Set the marker on the emission at the bandedge, or on the highest modulation product outside of the band, if this level is greater than that at the bandedge. Enable the marker-delta function, then use the marker-to-peak function to move the marker to the peak of the in-band emission. The marker-delta value now displayed must comply with the limit specified in this Section. Submit this plot.

Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit. Submit this plot.

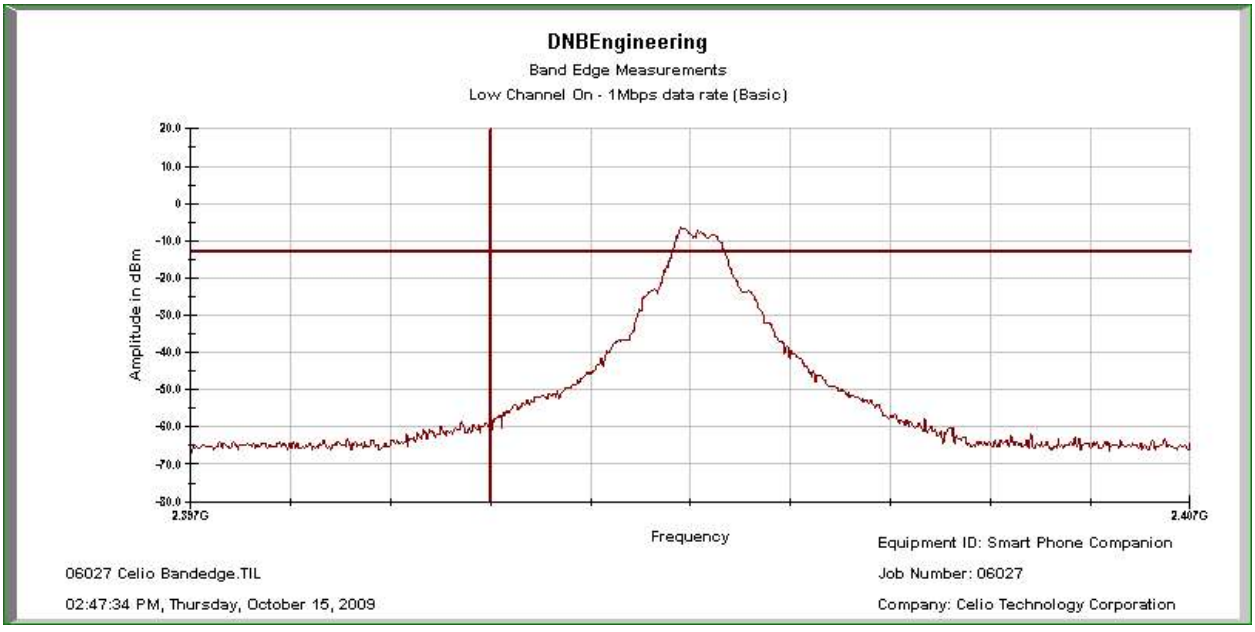
Test Set Up: Same as 15.247 (a,2) 20 dB Emission Bandwidth

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate)		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2400	2401.820		54.0	39.2	-14.8	1.820	Pass



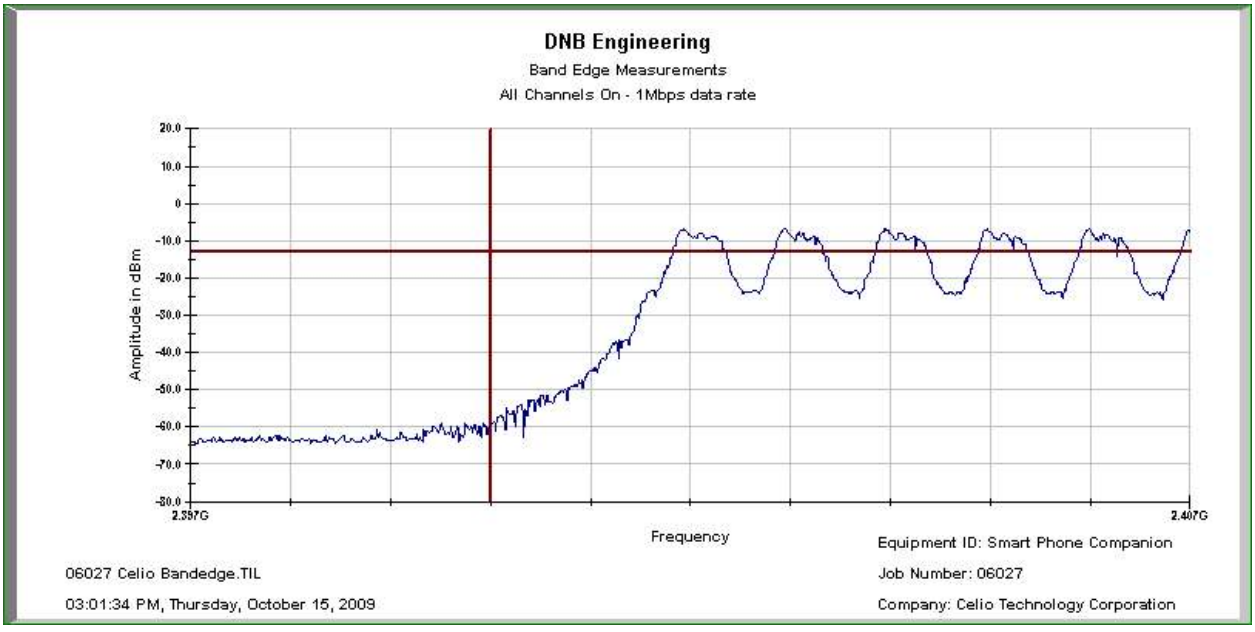
Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate)		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2400	2401.820		54.0	39.4	-14.6	1.820	Pass



Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

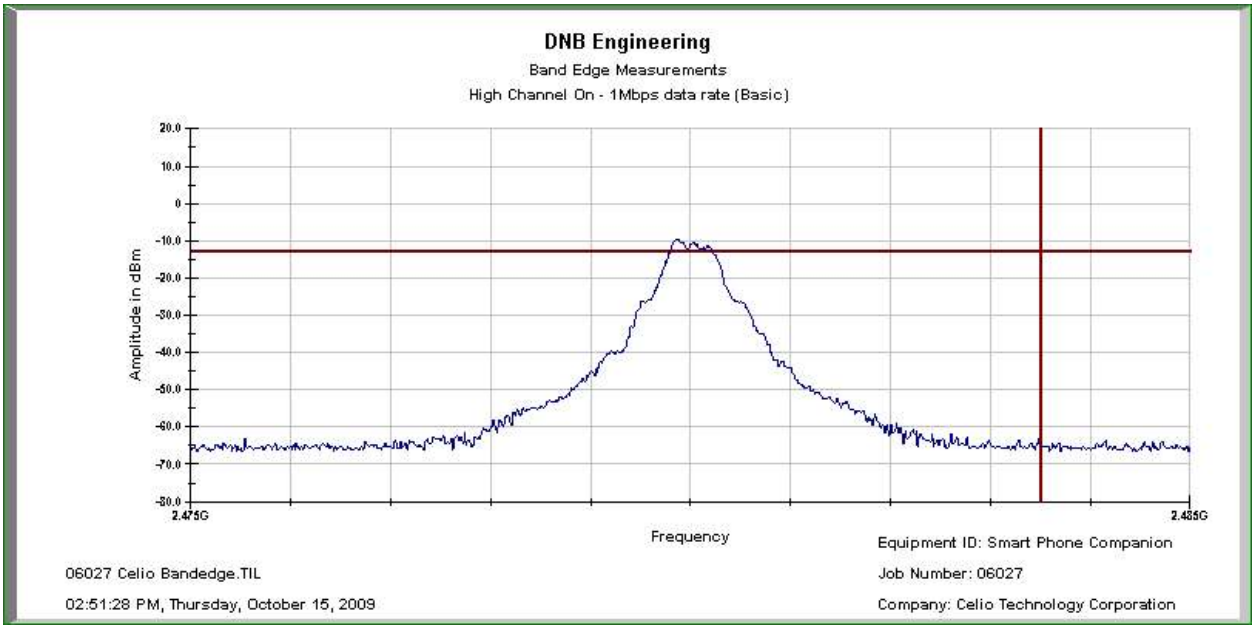
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	

DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate)		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2483.5		2480.250	54.0	38.7	-15.3	3.250	Pass



Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

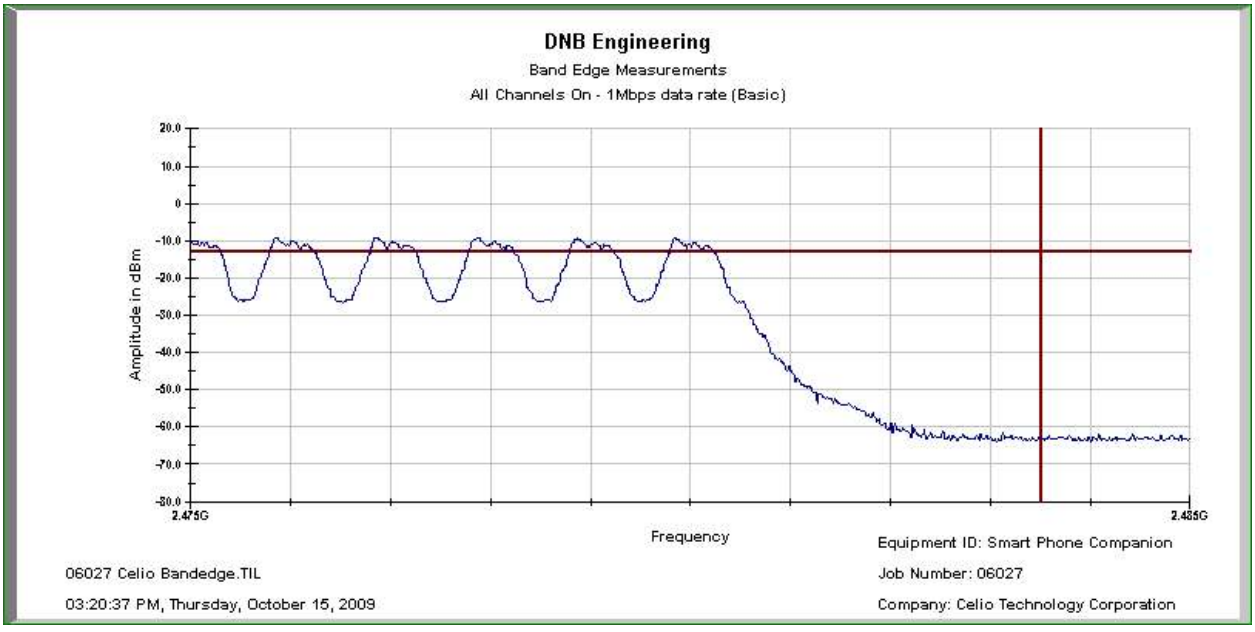
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	

DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate)		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2483.5		2480.270	54.0	39.5	-14.5	3.230	Pass



Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

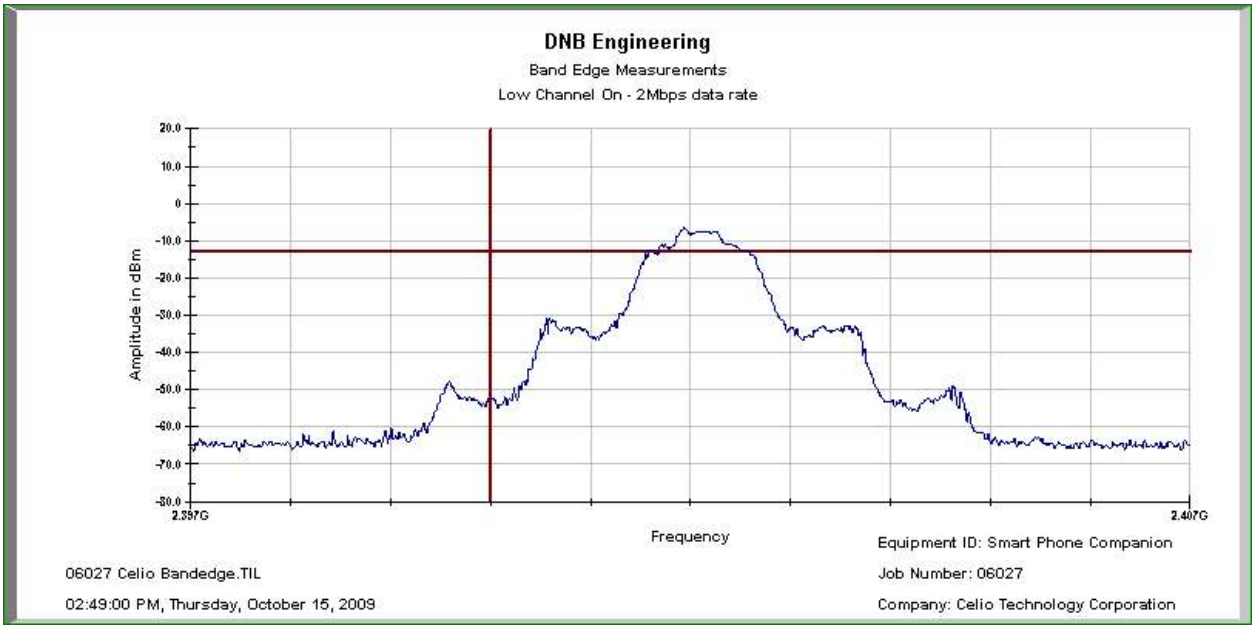
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	

DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2400	2401.156		54.0	38.9	-15.1	1.156	Pass



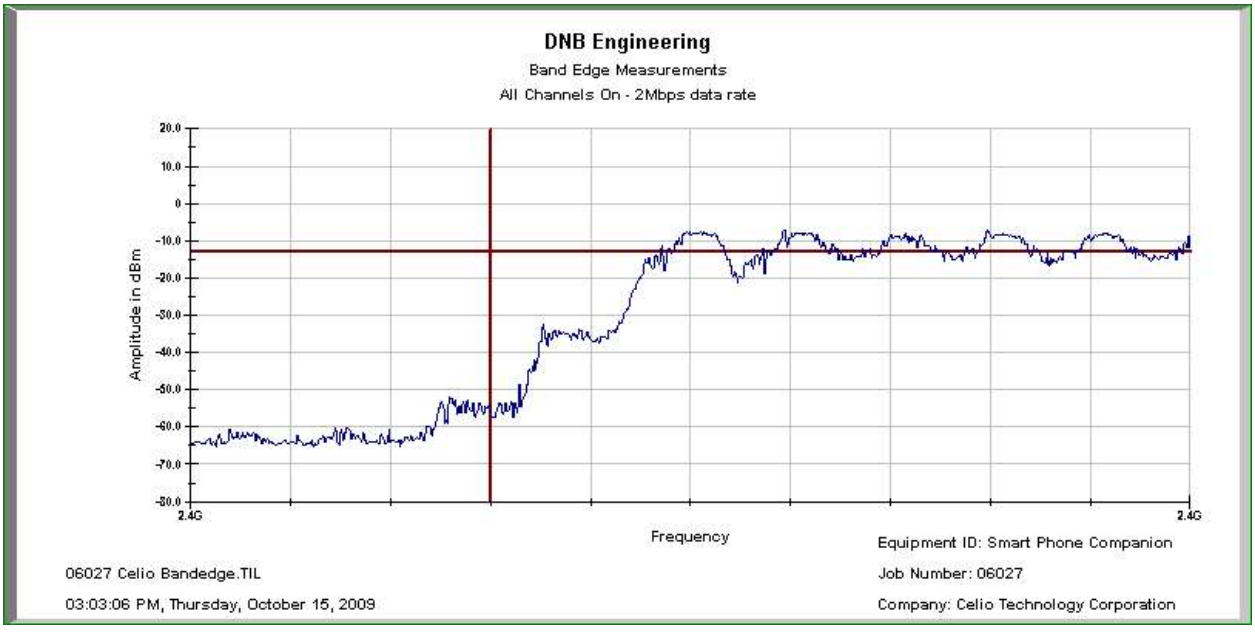
Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2400	2401.660		54.0	39.3	-14.7	1.660	Pass



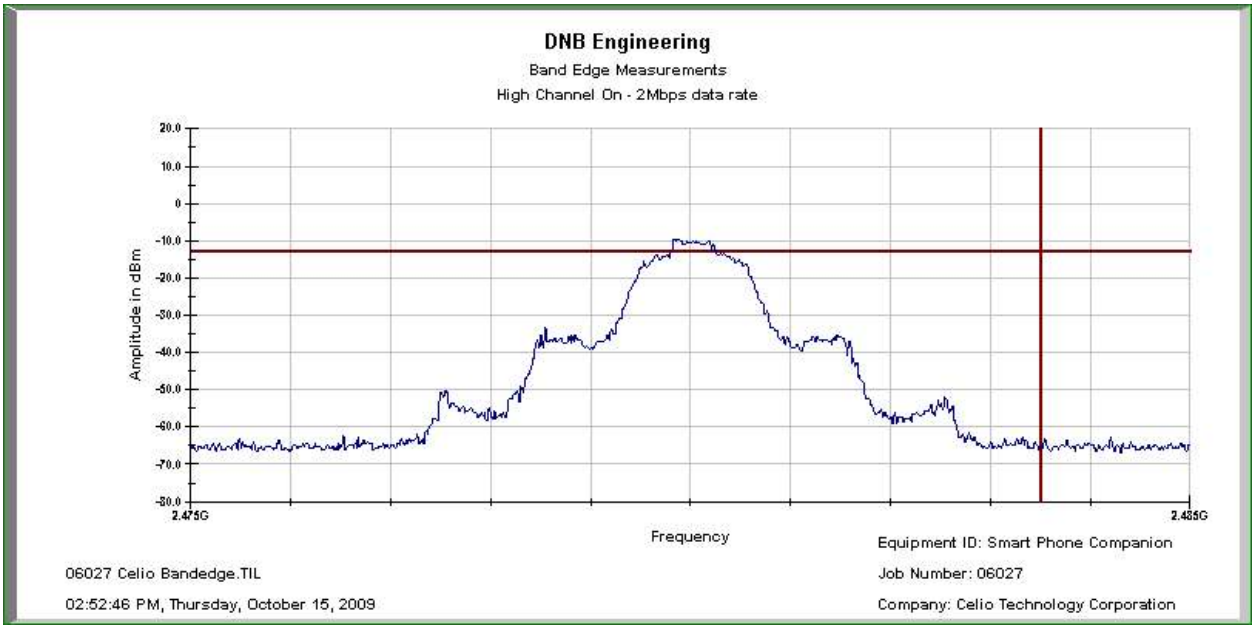
Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2483.5		2480.330	54.0	39.2	-14.8	3.170	Pass



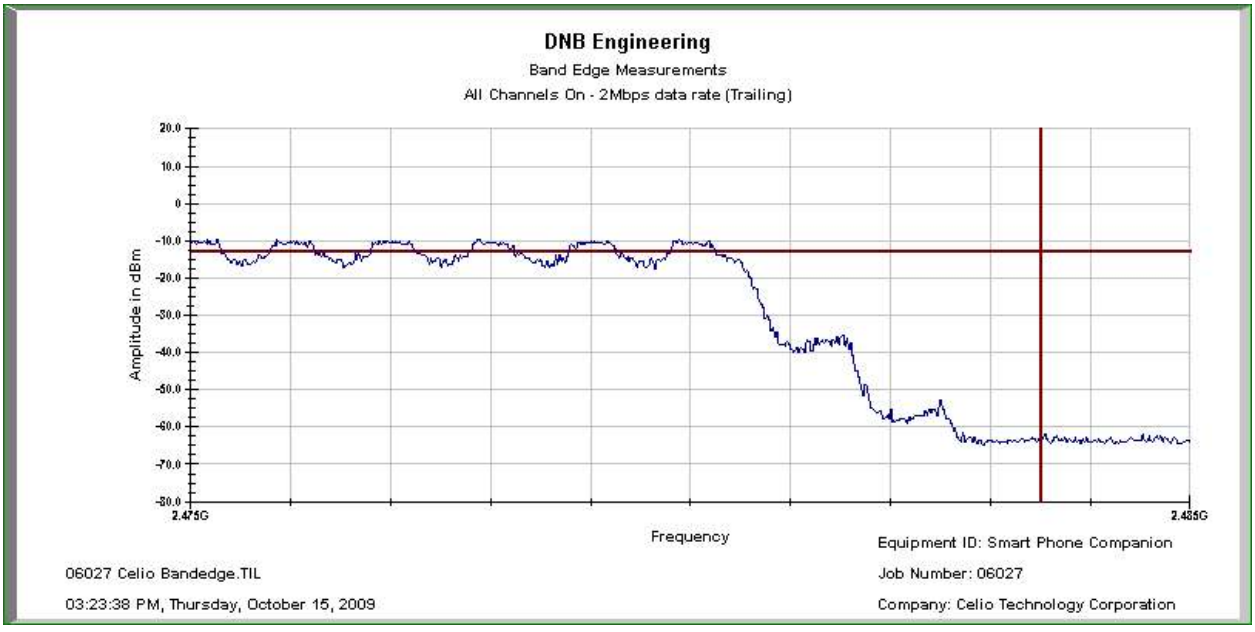
Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2483.5		2480.350	54.0	39.8	-14.2	3.150	Pass



Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

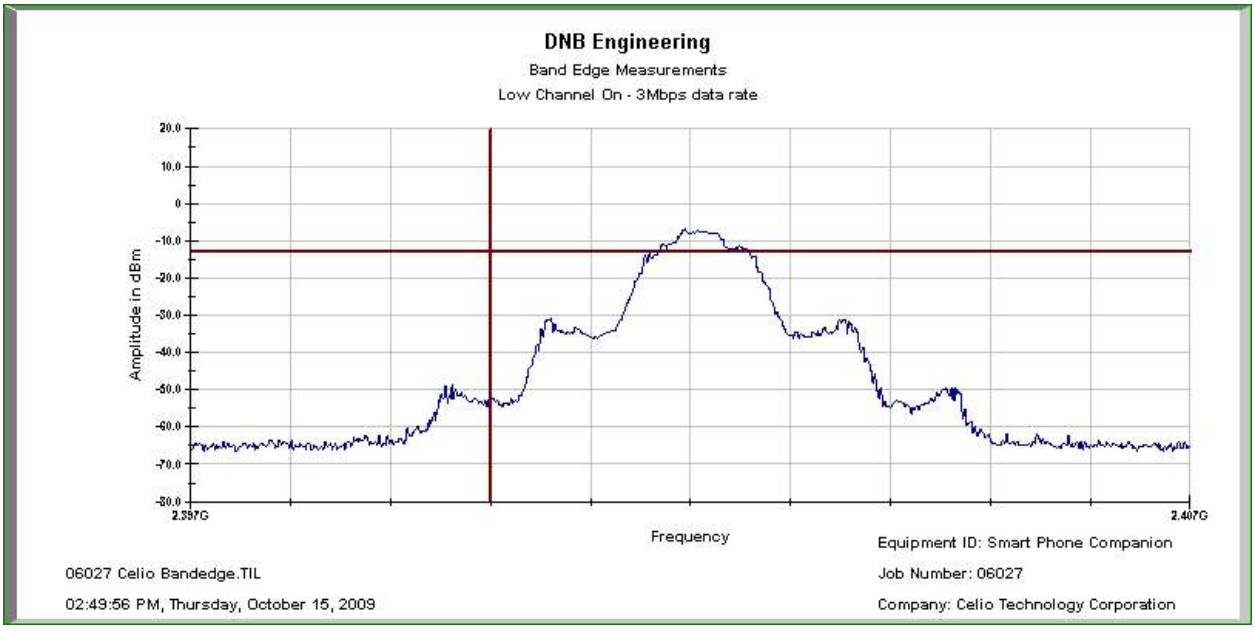
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	

DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2400	2401.540		54.0	39.0	-15	1.540	Pass



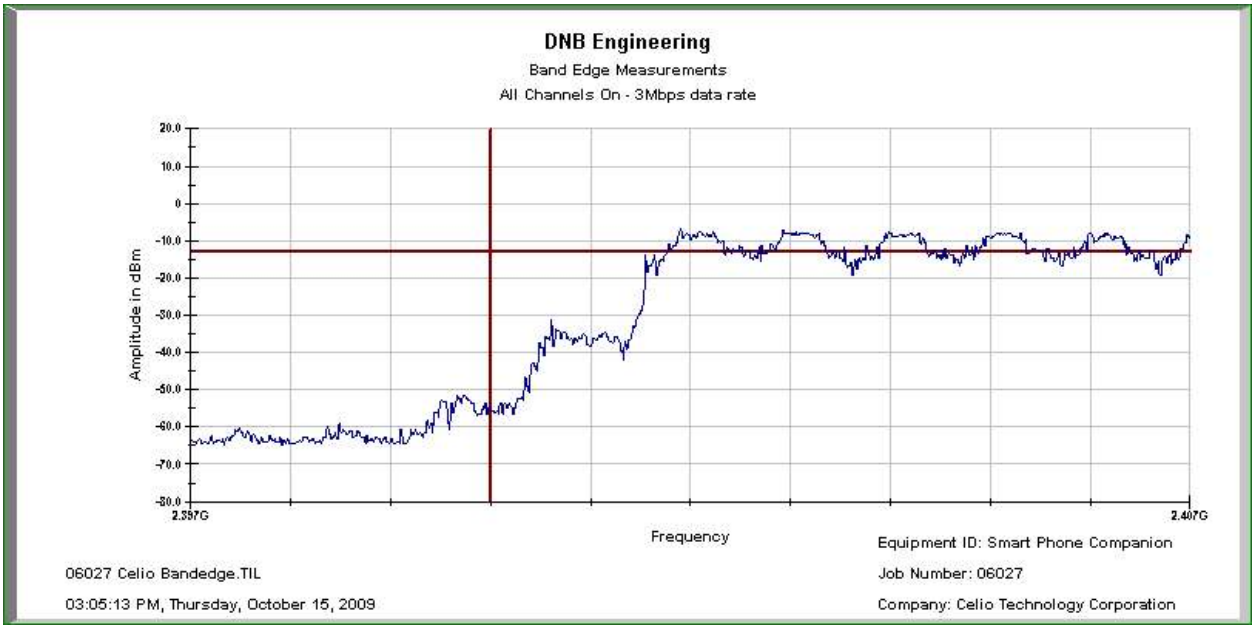
Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2400	2401.640		54.0	39.4	-14.6	1.640	Pass



Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

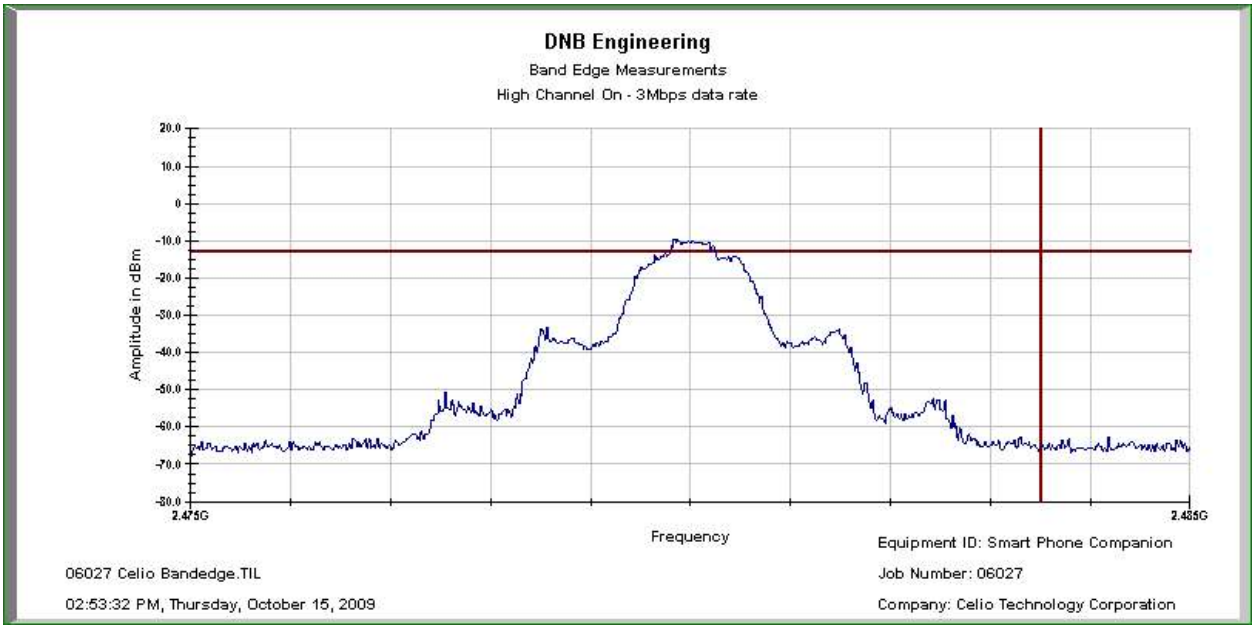
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	

DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard**
Customer:	Celio Technology Corporation		FCC Part 15
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion		**Clause** 15.247(d)
	3Mbps data rate		

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2483.500		2480.250	54.0	38.9	-15.1	3.250	Pass



Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

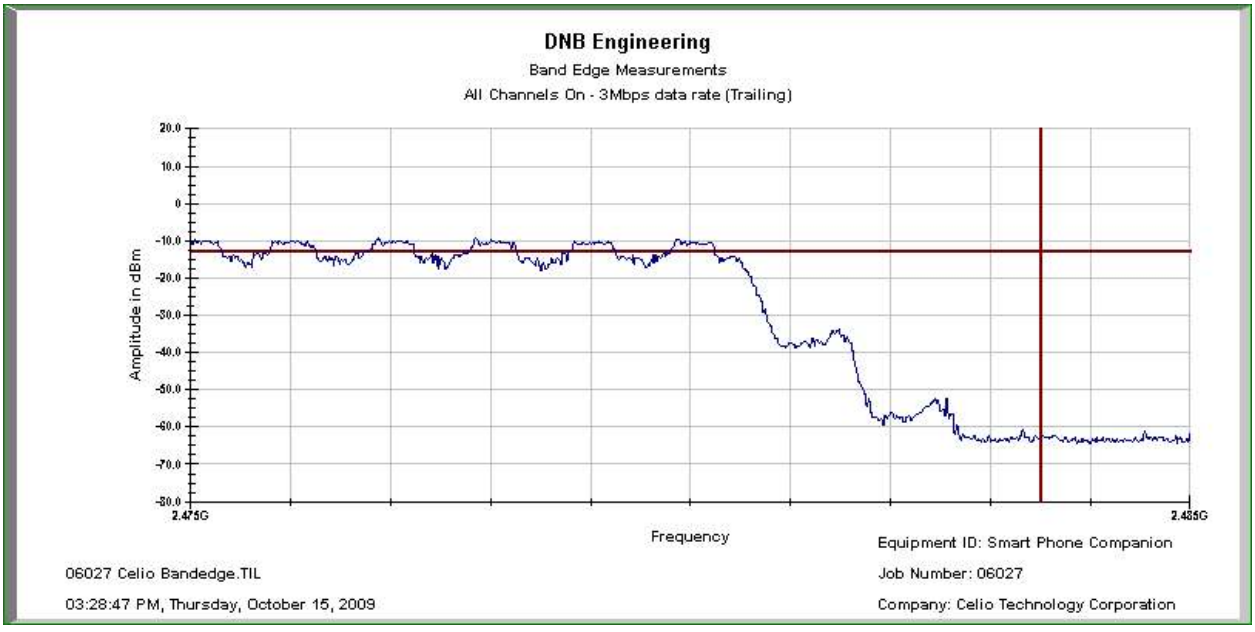
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Band Edge Measurements**	

DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Conducted Band Edge Measurement			Radiated Corrected Edge Measurement			Freq Delta (MHz)	Pass/Fail
Limit	Lower (MHz)	Upper (MHz)	AVE Limit (dBuV/m)	Measured (Peak) (dBuV/m)	Delta (dBuV)		
2483.500		2480.250	54.0	39.2	-14.8	3.250	Pass



Frequency Span = 10 MHz
Resolution Bandwidth = 100 kHz = 1% of the Frequency Span
Video Bandwidth = 300 kHz

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion		**Clause** 15.247(d)
	Test Procedure		

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Spurious RF Conducted Emissions

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic. Typically, several plots are required to cover this entire span.
RBW = 100 kHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section. Submit these plots.

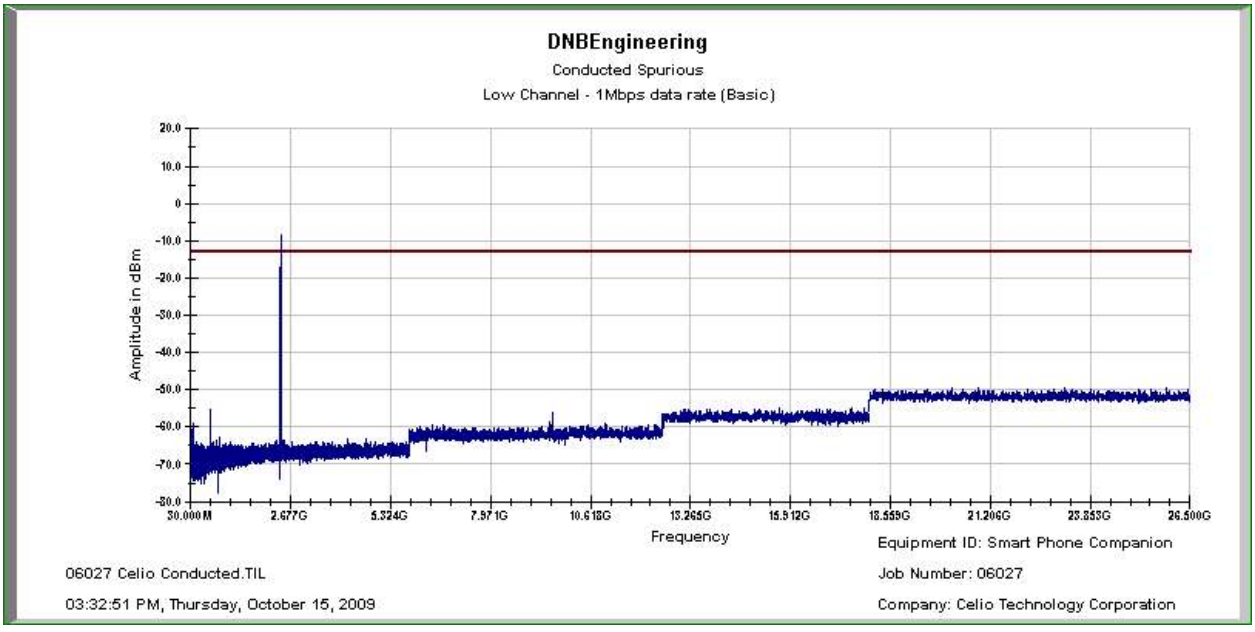
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate) - Low Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-8.5 dBm	-8.1 dBm	-28.1 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



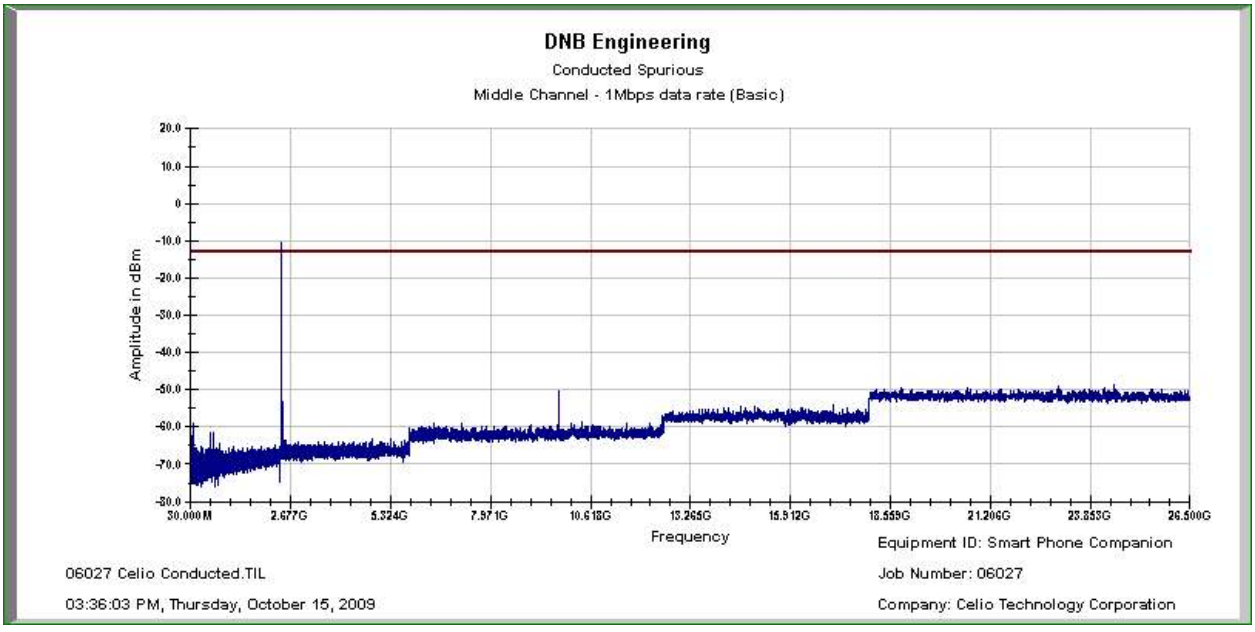
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate) - Mid Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-9.3 dBm	-10.5 dBm	-30.5 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



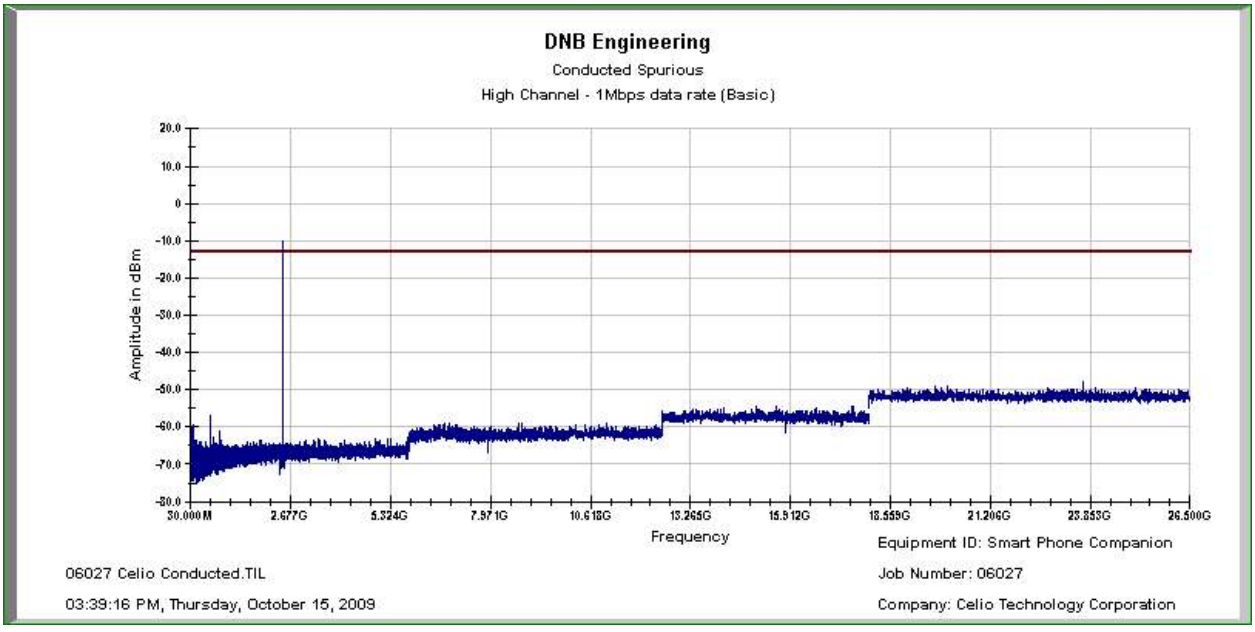
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate) - High Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-8.9 dBm	-10.1 dBm	-30.1 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



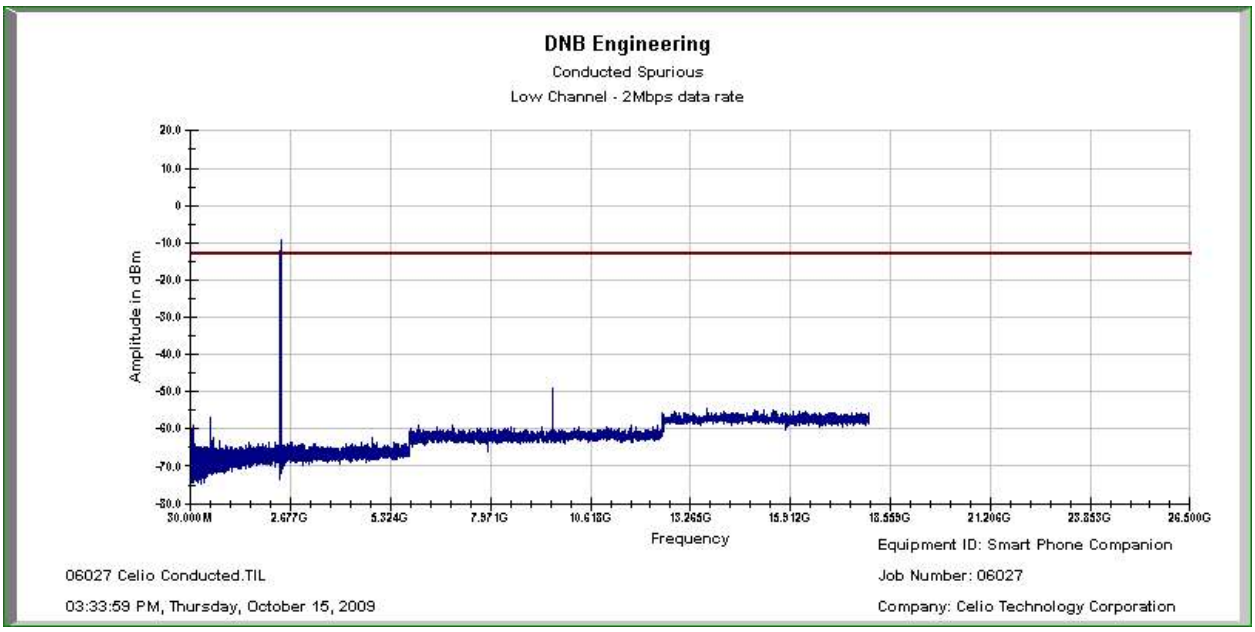
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate - Low Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-8.5 dBm	-8.95 dBm	-28.9 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



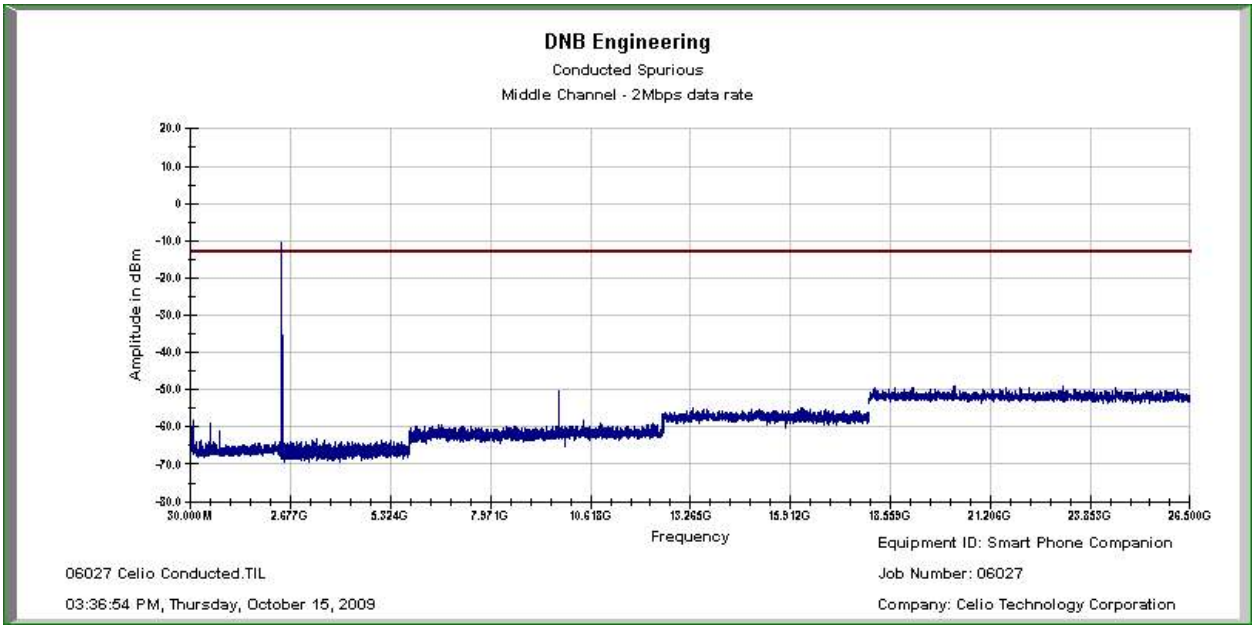
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate - Mid Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-9.3 dBm	-10.5 dBm	-30.5 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**

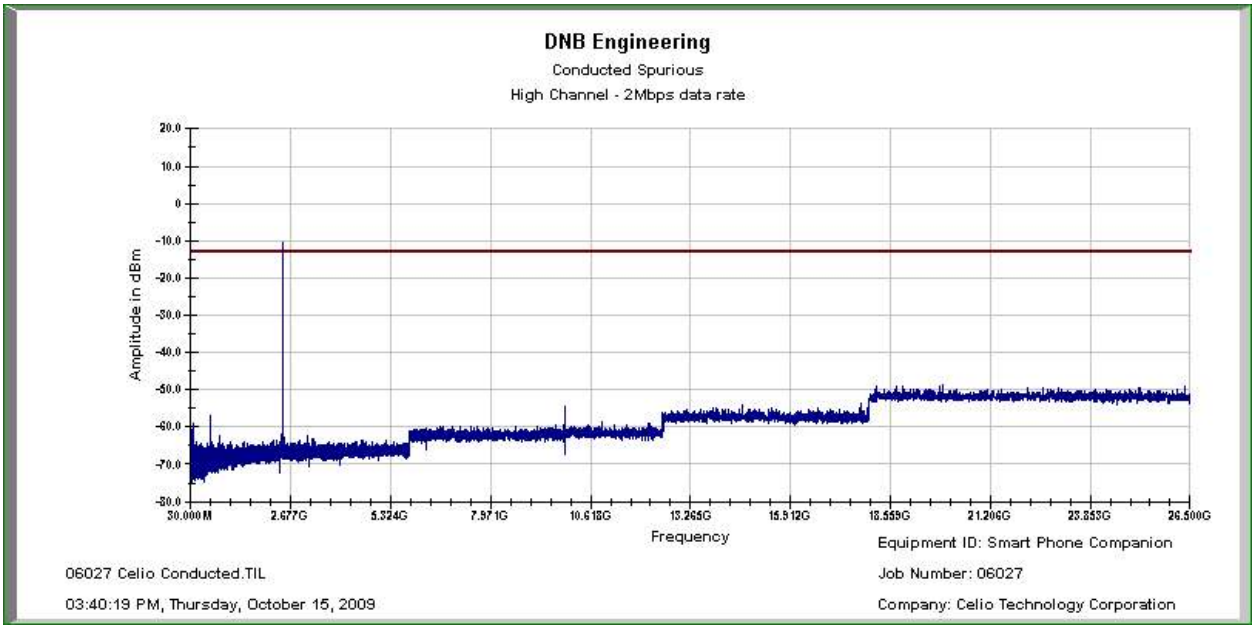
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate - High Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-8.9 dBm	-10.5 dBm	-30.5 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



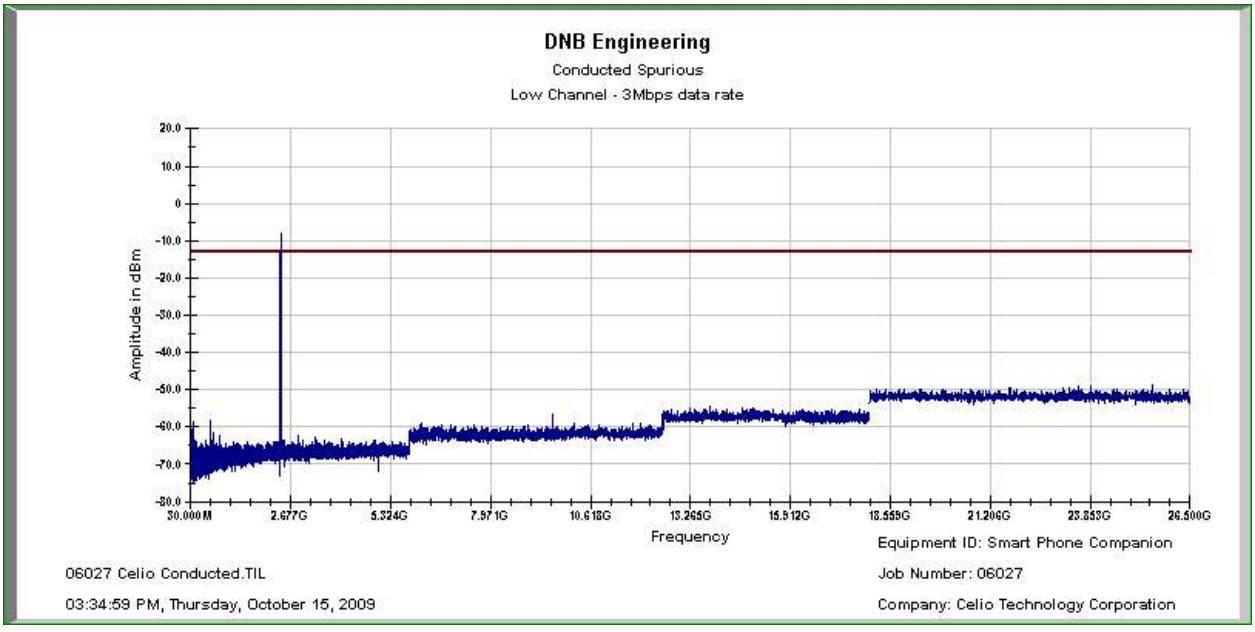
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate - Low Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-6.5 dBm	-7.7 dBm	-27.7 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



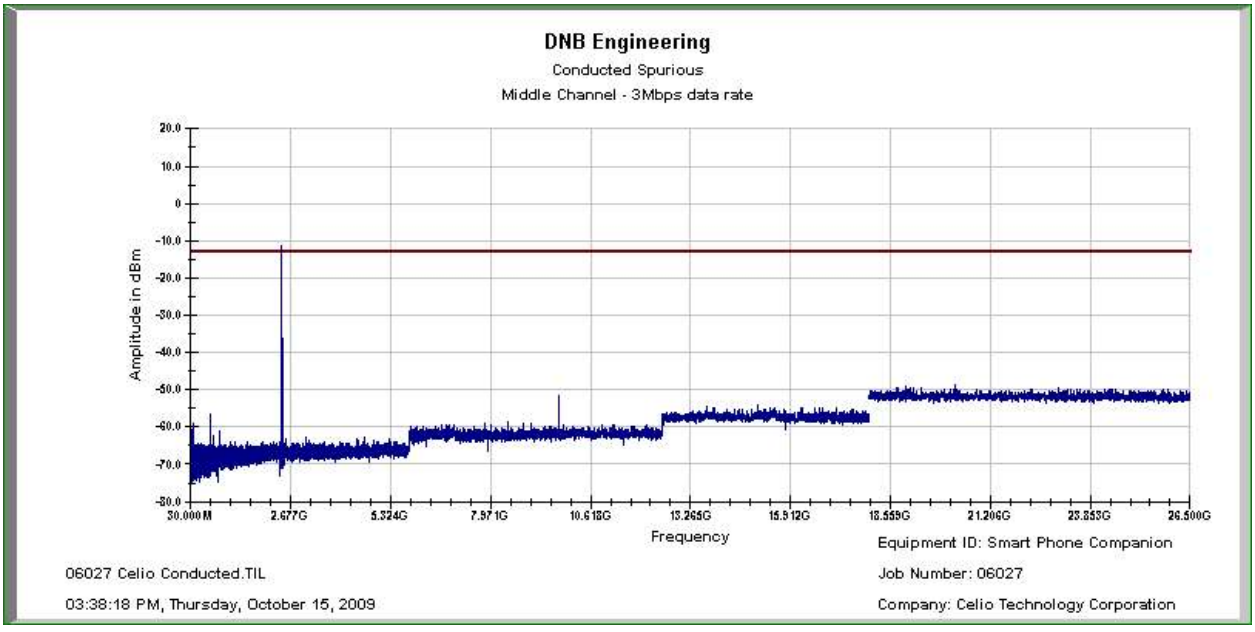
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate - Mid Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-9.3 dBm	-11.3 dBm	-31.3 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



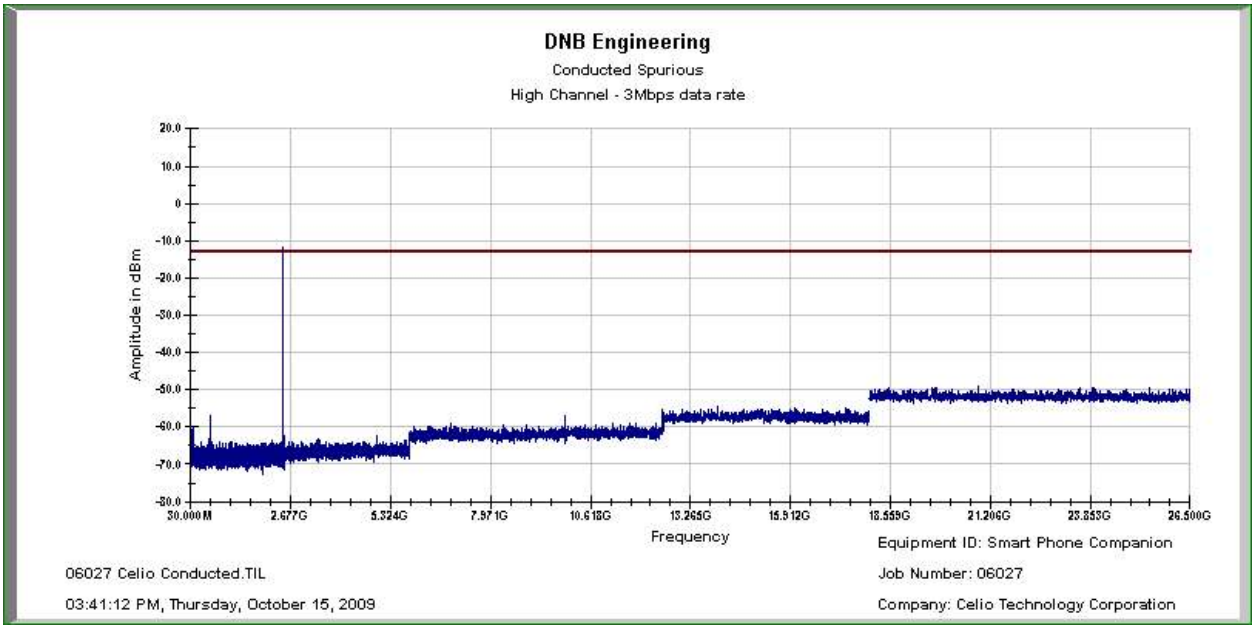
	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Conducted Spurious**	
DNB Job Number:	06027	Date: 15 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate - High Channel		**Clause** 15.247(d)

Ambient Temperature	Relative Humidity	Barometric Pressure
19 °C	28 %	101.8 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Peak Output Power	Reading	-20dBc	Pass/Fall
-8.9 dBm	-11.7 dBm	-31.7 dBm	Pass

Resolution Bandwidth = 100 kHz
Video Bandwidth = 300 kHz



15.247(d): Power spectral density(PSD).

The same method of determining the conducted output power shall be used to determine the power spectral density.

If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

Locate and zoom in on emission peak(s) within the passband.
Set RBW = 3 kHz,
VBW > RBW,
Sweep= (SPAN/3 kHz) e.g., for a span of 1.5 MHz,
the sweep should be $1.5 \times 10^6 \; 8 \; 3 \times 10^3 = 500$ seconds.

The peak level measured must be no greater than + 8 dBm. If external attenuation is used, don`t forget to add this value to the reading. Use the following guidelines for modifying the power spectral density measurement procedure when necessary.

For devices with spectrum line spacing greater than 3 kHz no change is required.

For devices with spectrum line spacing equal to or less than 3 kHz, the resolution bandwidth must be reduced below 3kHz until the individual lines in the spectrum are resolved. The measurement data must then be normalized to 3 kHz by summing the power of all the individual spectral lines within a 3kHz band (in linear power units) to determine compliance.

If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 35dB for correction to 3 kHz.

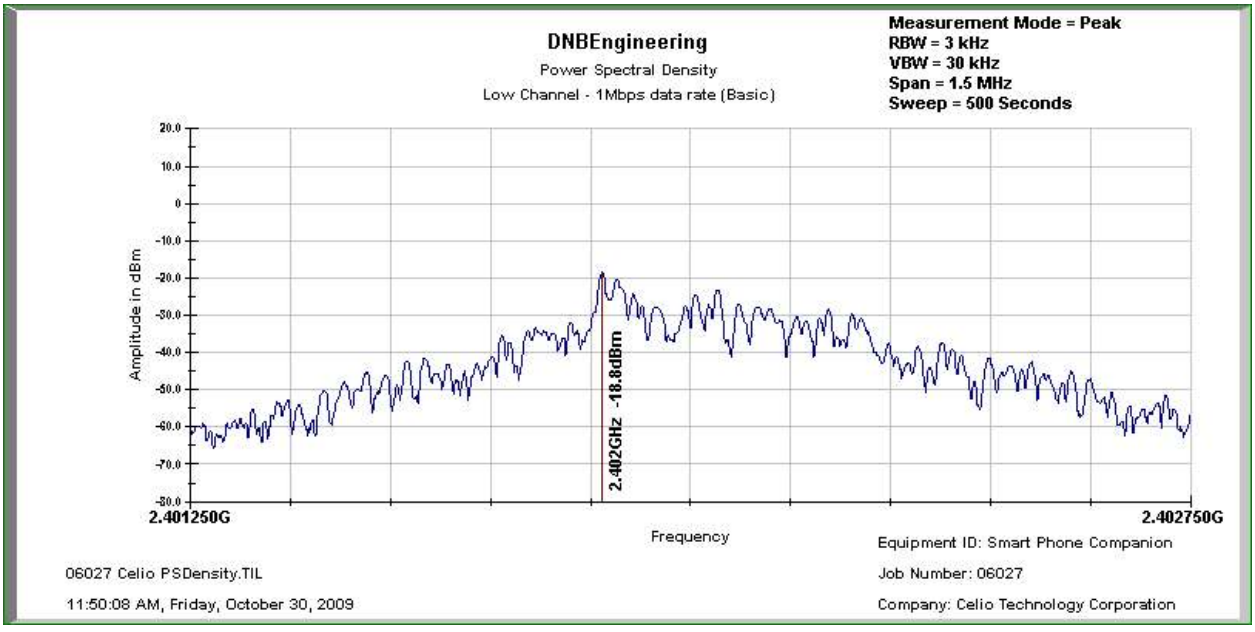
Should all the above fail or any controversy develop regarding accuracy of measurement, the Laboratory will use the HP 89440A Vector Signal Analyzer for final measurement unless a clear showing can be made for a further alternate.

	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate)		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Low	2401.867	-18.8	8.0	-26.8	Pass

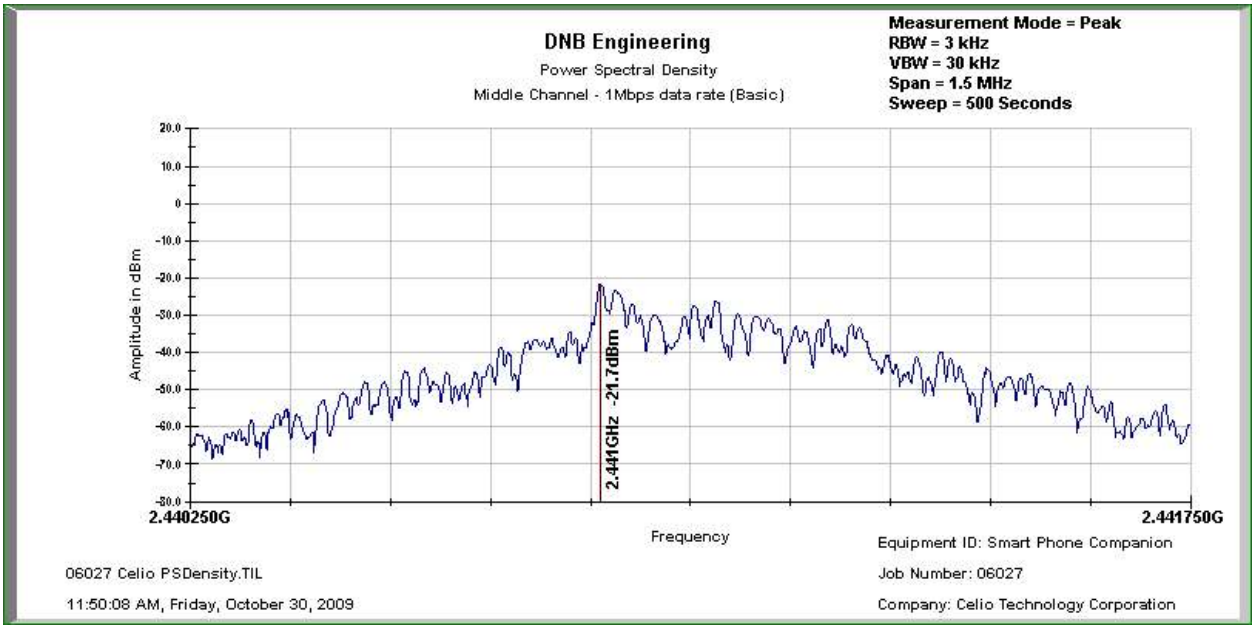


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate)		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Middle	2440.864	-21.7	8.0	-29.7	Pass

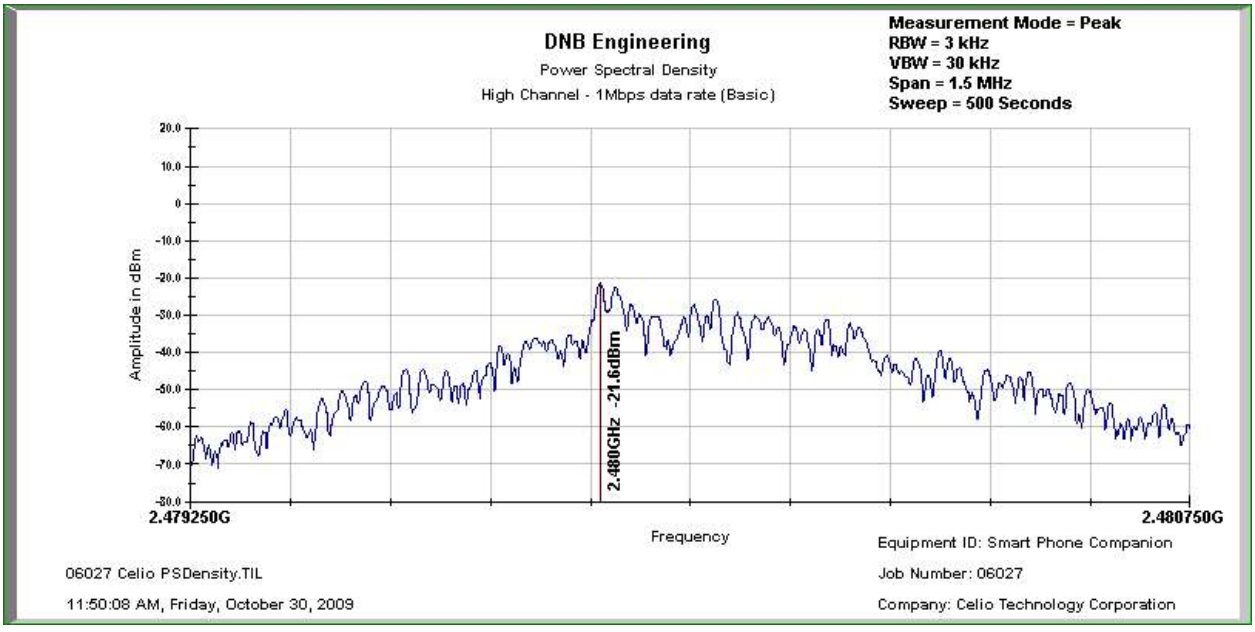


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 1Mbps data rate (Basic data rate)		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
High	2479.864	-21.6	8.0	-29.6	Pass

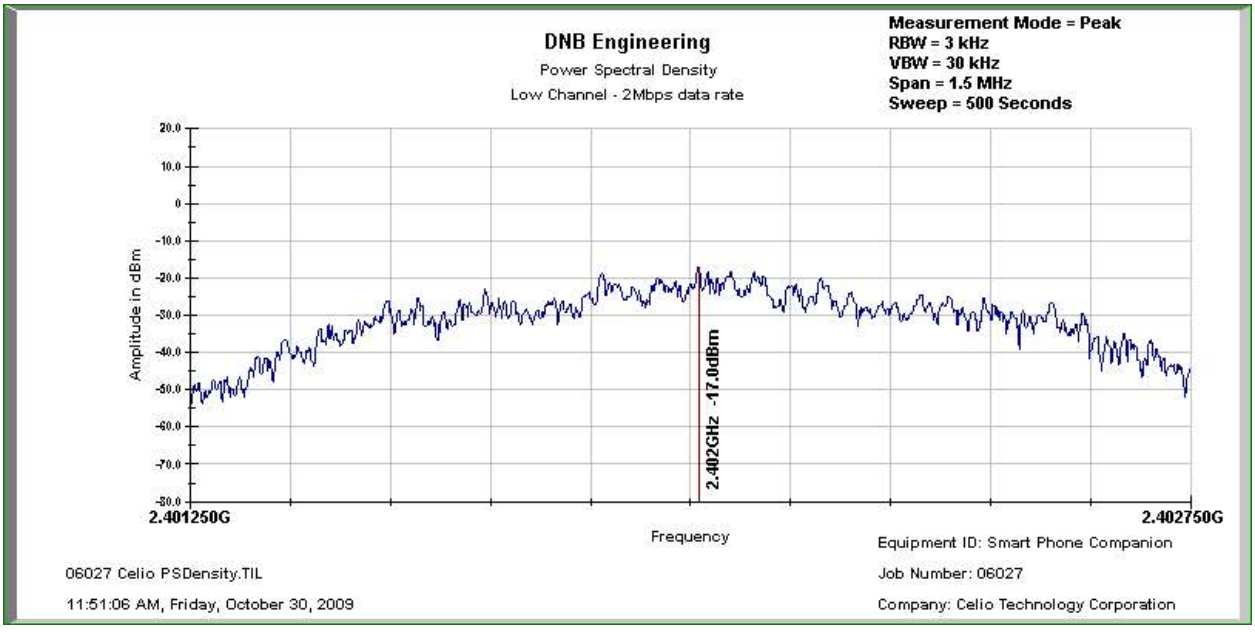


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Low	2402.012	-17.0	8.0	-25.0	Pass

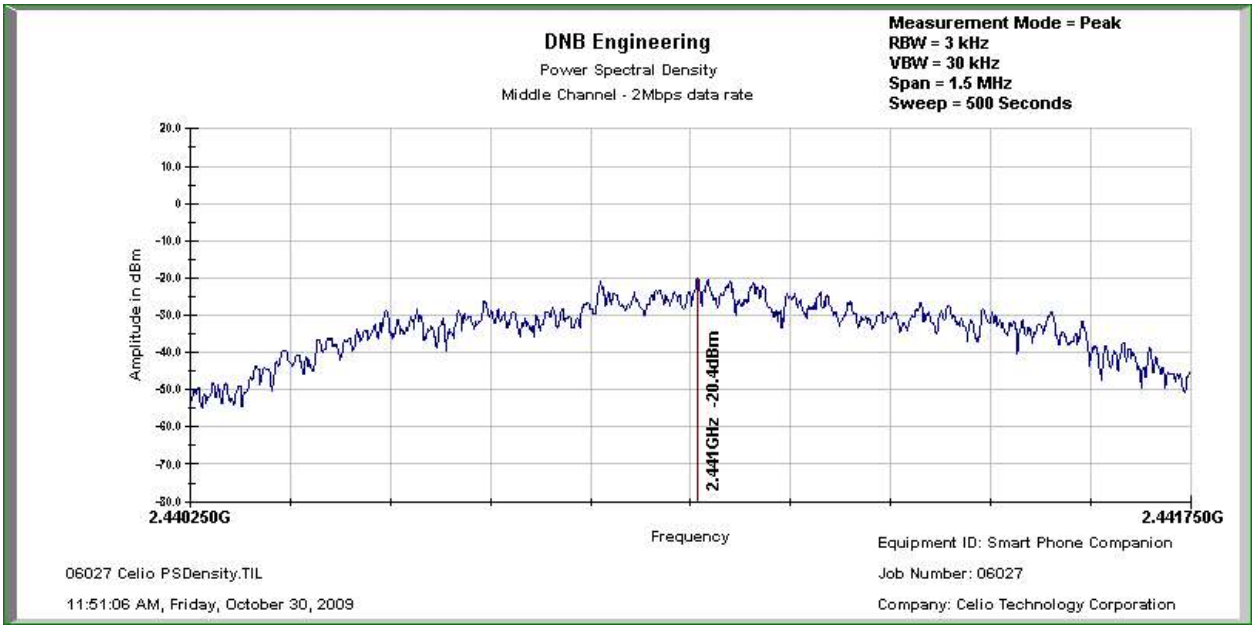


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Middle	2441.011	-20.4	8.0	-28.4	Pass

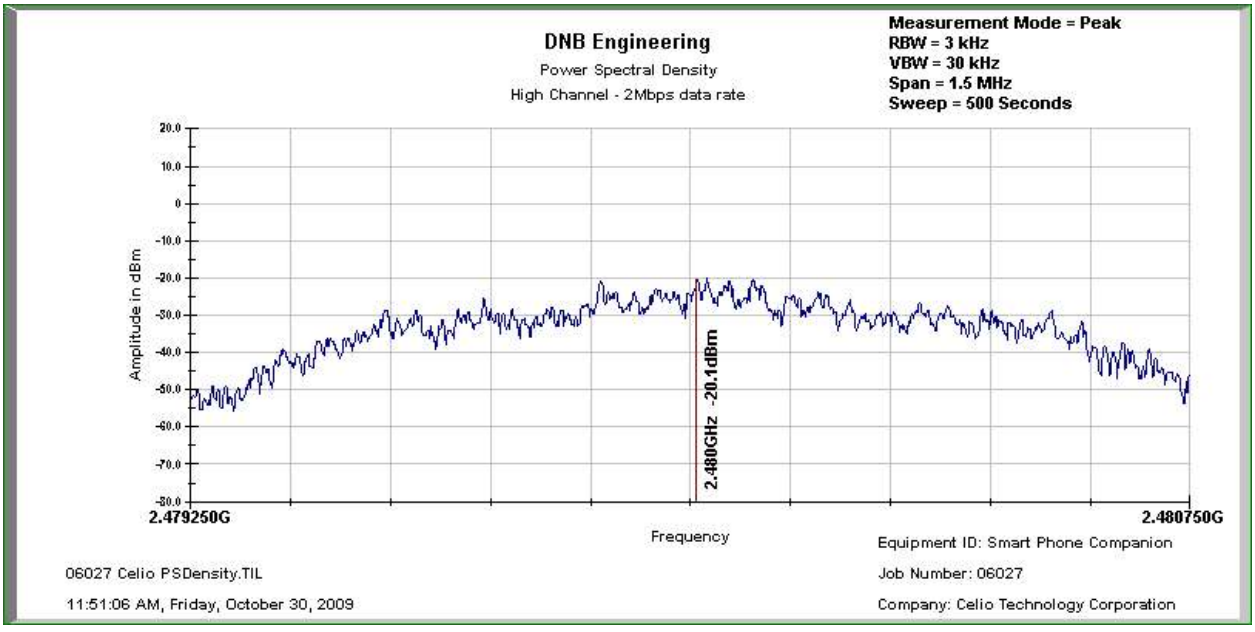


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 2Mbps data rate		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
High	2480.009	-20.1	8.0	-28.1	Pass

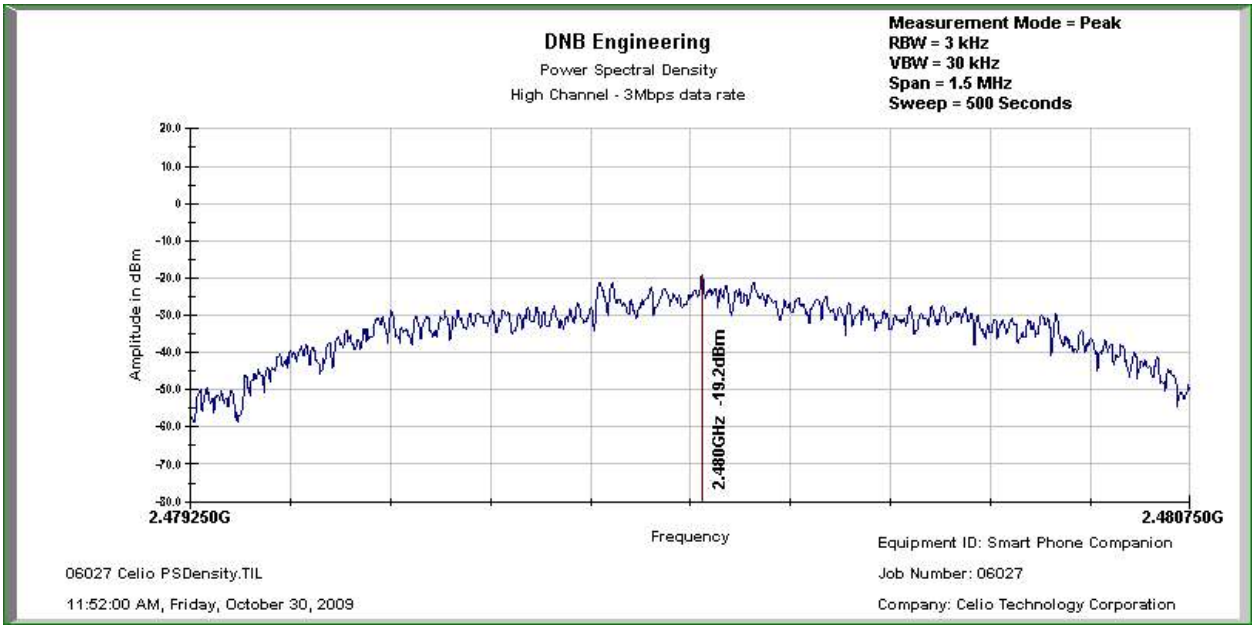


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Low	2402.018	-16.8	8.0	-24.8	Pass

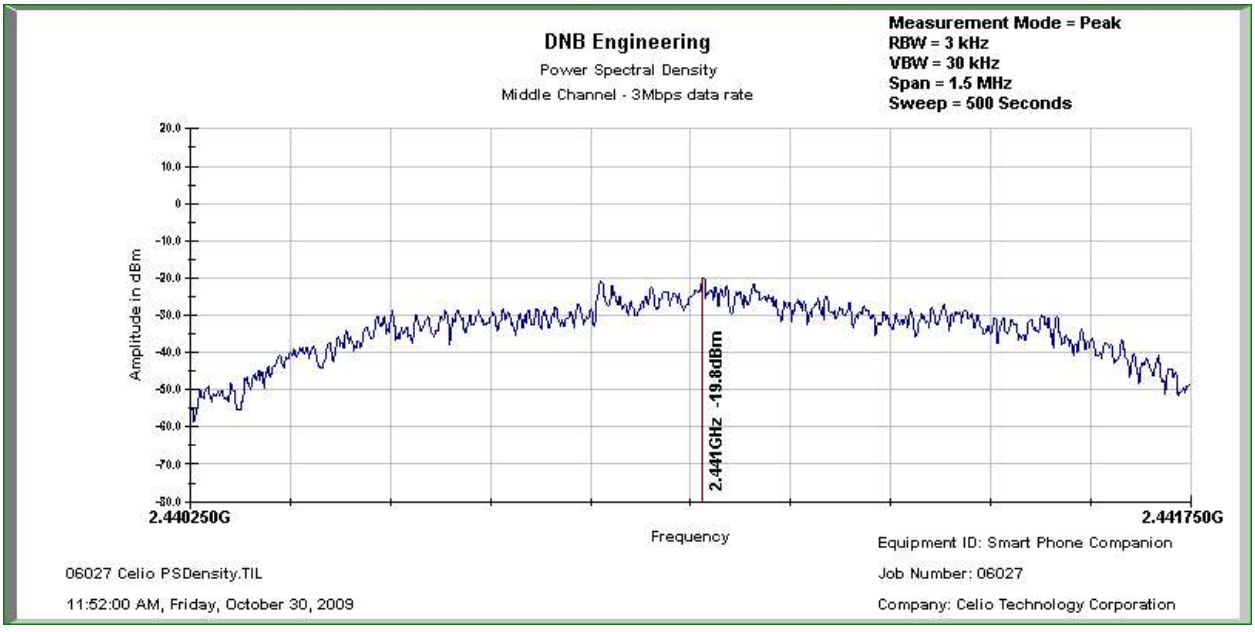


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
Middle	2441.018	-19.8	8.0	-27.8	Pass

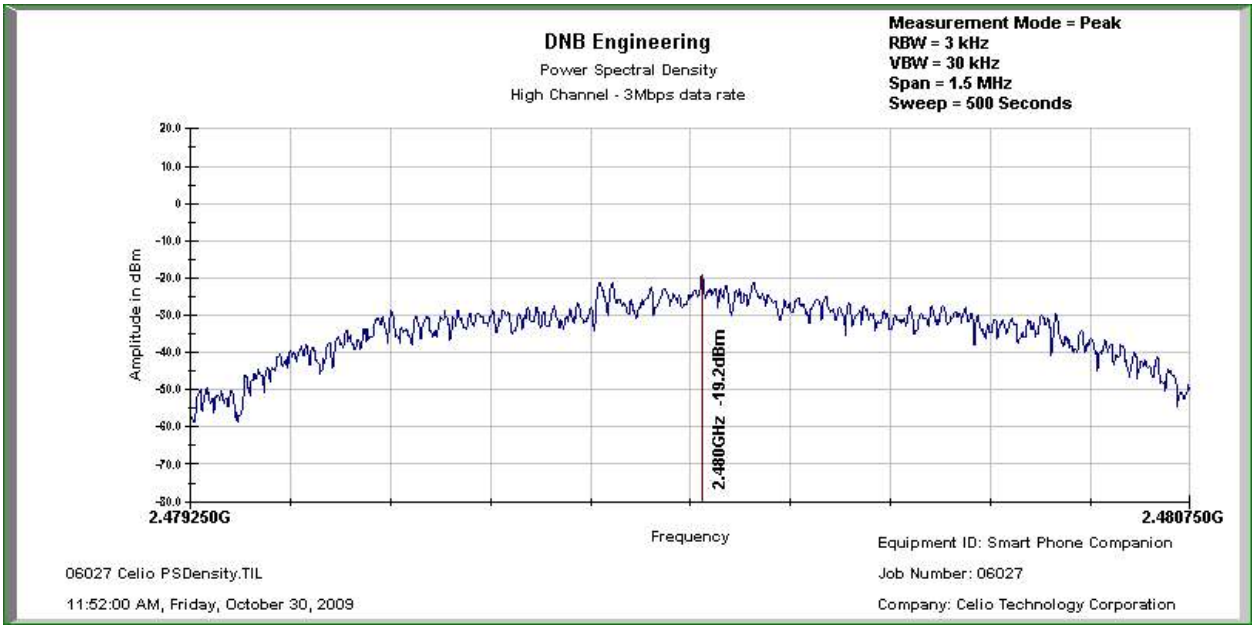


	1100 E Chalk Creek Road Coalville, UT 84017 (435) 336-4433 FAX (435) 336-4436	**Power Spectral Density**	
DNB Job Number:	06027	Date: 30 Oct 2009	**Conformance Standard** FCC Part 15
Customer:	Celio Technology Corporation		
Model Number:	CRF-C8N2/CRF-C8v (Inclusive of CRF-C7B)		
Description:	Smart Phone Companion 3Mbps data rate		**Clause** 15.247(e)

Environmental Conditions		
Ambient Temperature	Relative Humidity	Barometric Pressure
21 °C	25 %	101.2 kPa

EUT performed within the requirements of the applicable standard [X] Yes [ ] No *Les Payne*

Channel	Freq MHz	Meas PSD (dBm)	Limit (dBm)	Delta (dBm)	Pass/Fail
High	2480.017	-19.2	8.0	-27.2	Pass



2.1033 (b) (7) Equipment Photographs

Photo 1	Internal	Top of PCB
Photo 2	Internal	Bottom of PCB
Photo 3	Internal	Close up of Bluetooth Radio Section
Photo 4	External	Front of Unit - Closed
Photo 5	External	Front of Unit - Opened
Photo 6	External	Back of Unit - Opened
Photo 7	External	Bottom of Unit - Label Location

Photo 1 Internal Top of PCB

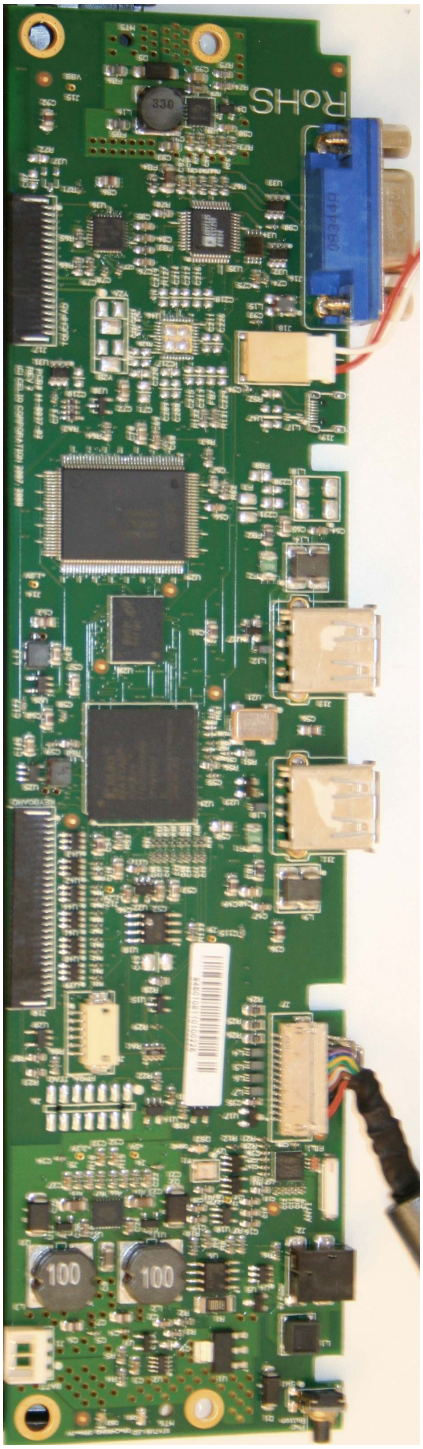


Photo 2 Internal Bottom of PCB

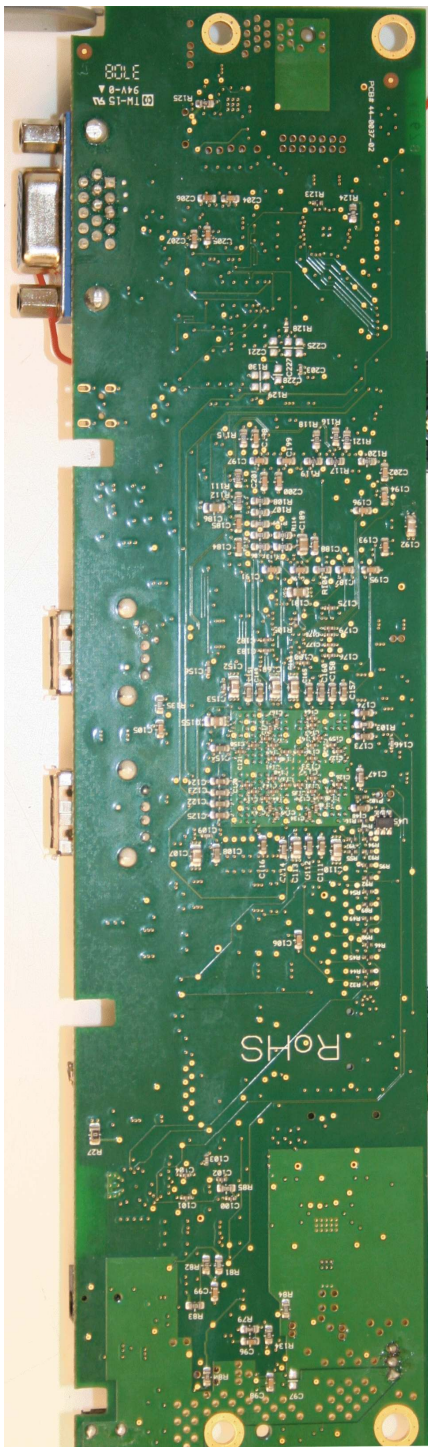


Photo 3 Internal Close up of Bluetooth Radio Section

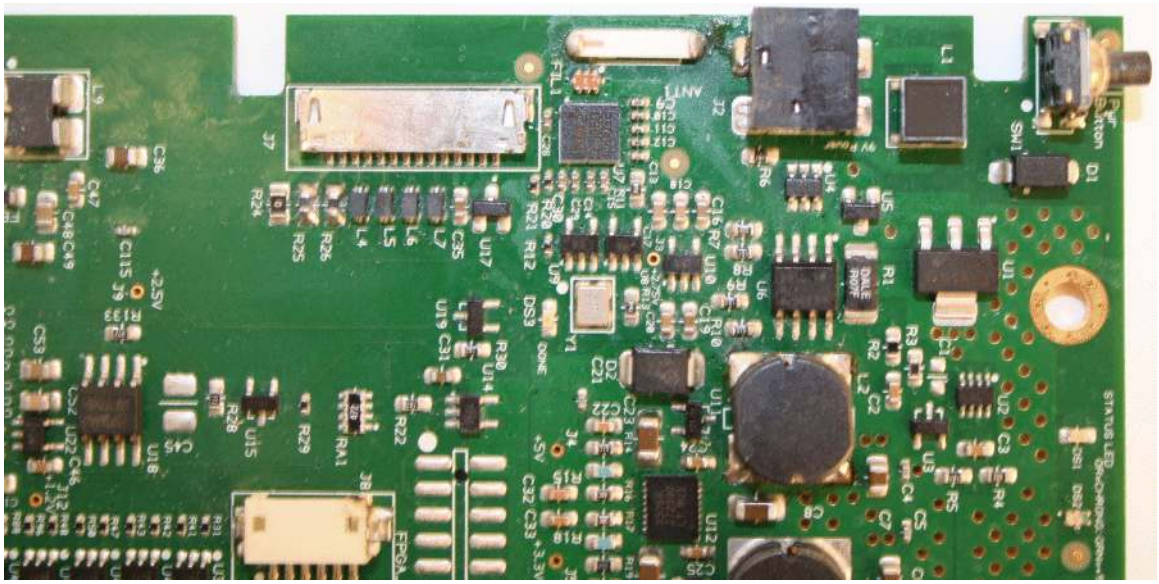


Photo 4 External Front of Unit - Closed

Photo 5 External Front of Unit - Opened

Photo 6 External Back of Unit - Opened

Photo 7 External Bottom of Unit - Label Location

RF Exposure Requirements 15.247 (b)(5)

RF Safety Calculations for Mobile Device:

EIRP = 0.447mW (Using a 3dB Gain Antenna)
Conducted Output Power = 0.224mW

Maximum allowed = $60/f_{GHZ} = 60/2.441.75 = 24.57W$

Per evaluation above this device is considered as having no quantitative effect on RF Exposure.

RF Exposure – MPE Calculations (2400-2483.5 MHz Band) (Portable Device Information Only)

Transmitter Power: 0.224 mW
Antenna Gain: 3 dB
Cable loss: 0 dB
Frequency range: 2400 - 2483.5 MHz

Assumptions
1. A single ¼ wavelength radiating antenna is assumed.
2. Closest exposure distance is assumed to be 20 cm

Calculations

The following results shall be assumed to be accurate for the far-field only. These predictions will over-estimate power density in the near–field. Based on the use of a ¼ wavelength radiator, a distance of 20 cm is considered to be in the far-field for all cases.

$S = PG/4*PI*R^2$

P is 0.224 mW
G is 3 dB (Antenna gain – loss) or $10^{(3/10)}$ or 1.995
R is 20 cm

$S = 0.000089$ mW/cm^2

For Occupational/Controlled Exposure
From 1,500 to 100,000 MHz, power density limit is **5 mW/cm^2 for 6 minutes**

For General Population/Uncontrolled Exposure
From 1,500 to 100,000 MHz, power density limit is **1 mW/cm^2 for 30 minutes**

Conclusion: ***Meets MPE limits***

End of Report