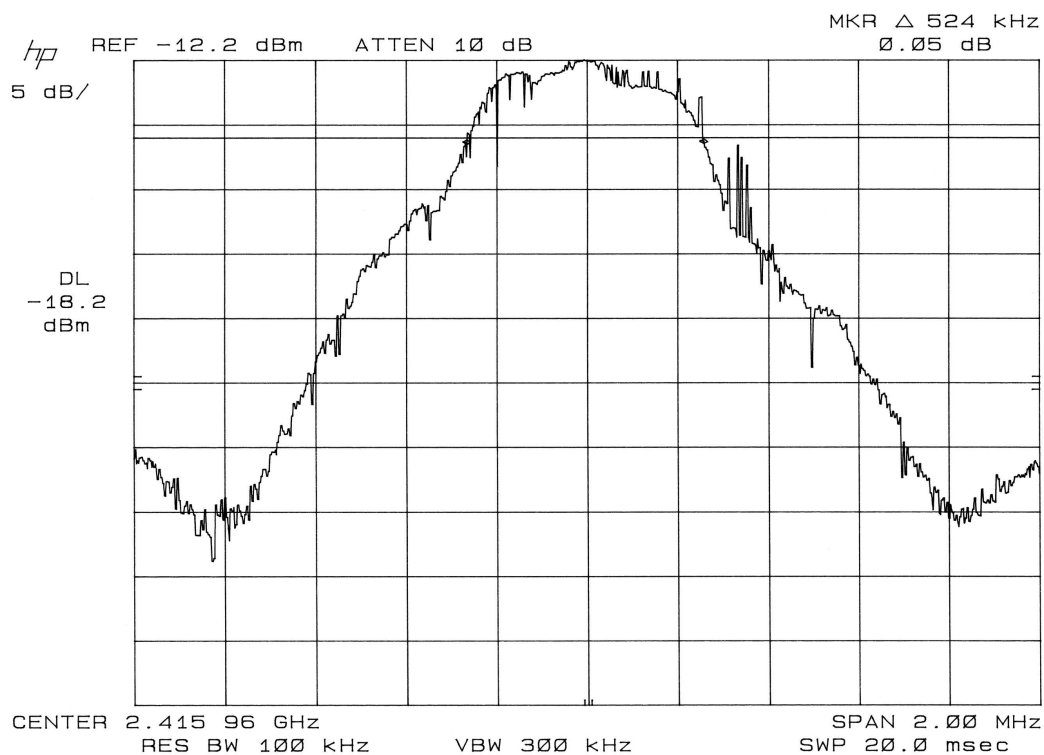
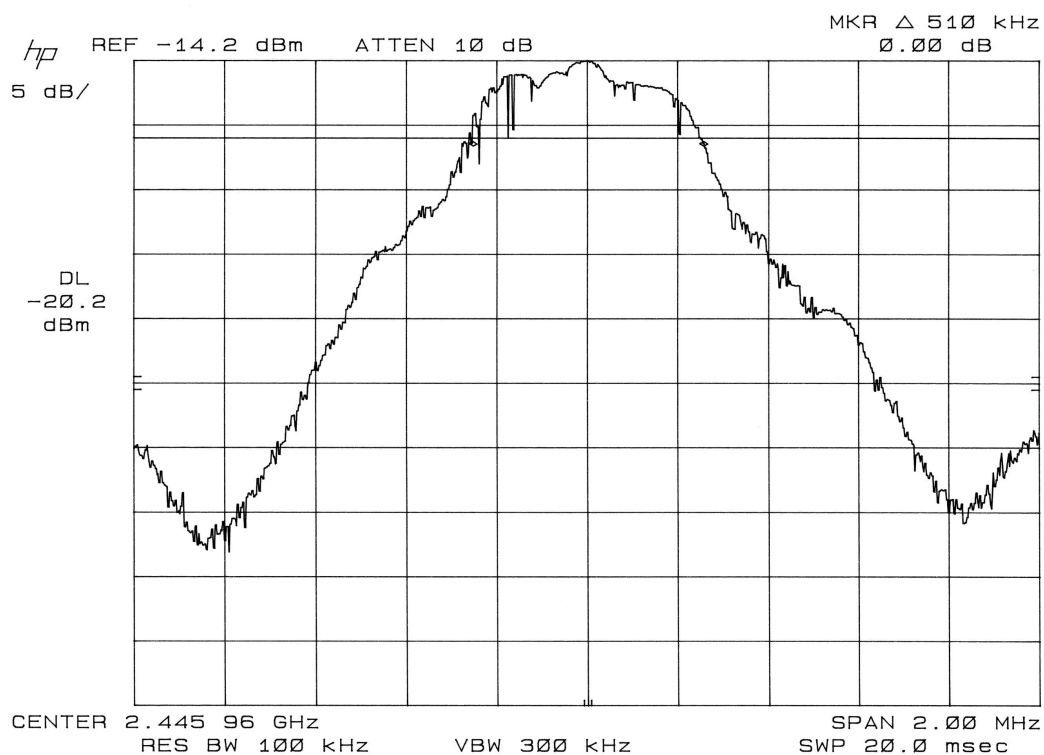


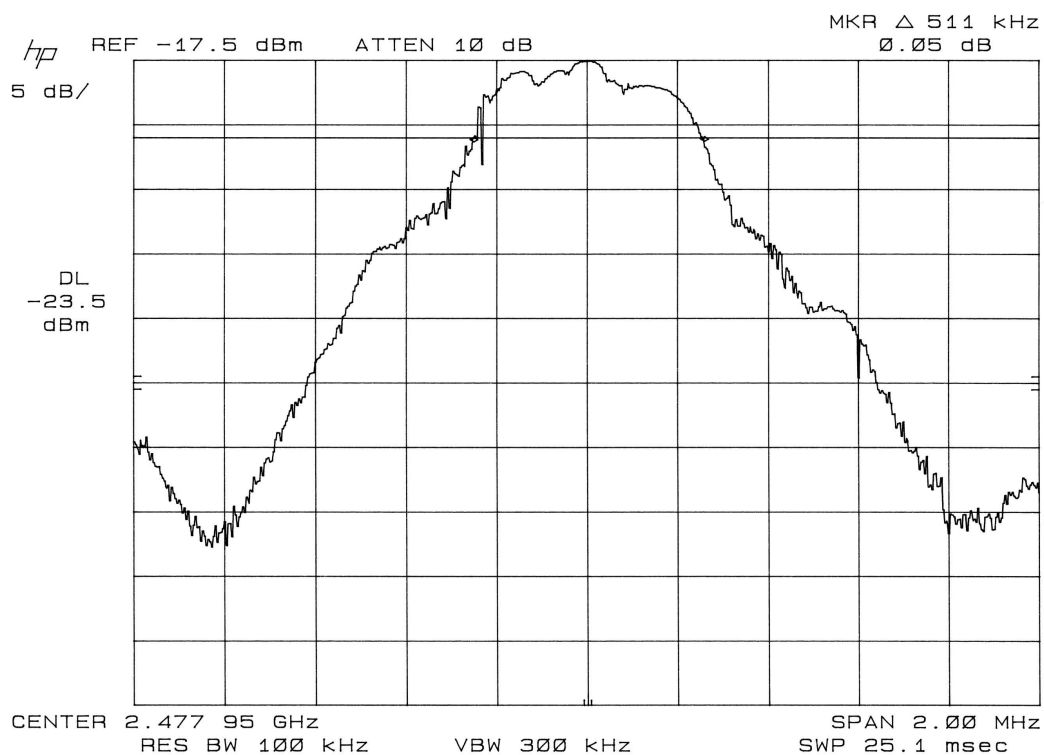
		5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		6 dB Emission Bandwidth	
DNB Job Number:		58074		Date: 22 Nov 2004	
Customer:		Leica Geosystems, Inc.			
Model Number:		GS20 (SR20)		Serial Number: Proto	
Description:		GPS Positioning System			
Conformance Standard FCC Part 15 Clause 15.247(a,2)					
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
22 °C		30 %		102.4 kPa	
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Les Payne</i>					
Channel	Chl Freq (MHz)	6dB BW (MHz)	Min Lim (MHz)	Pass/Fail	
1	2415.96	0.524	0.500	Pass	



		5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		6 dB Emission Bandwidth	
DNB Job Number:	58074	Date:	22 Nov 2004	Conformance Standard FCC Part 15	
Customer:	Leica Geosystems, Inc.				
Model Number:	GS20 (SR20)	Serial Number:	Proto	Clause 15.247(a,2)	
Description:	GPS Positioning System				
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
22 °C		30 %		102.4 kPa	
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Les Payne</i>					
Channel	Chl Freq (MHz)	6dB BW (MHz)	Min Lim (MHz)	Pass/Fail	
16	2445.96	0.510	0.500	Pass	



		5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		6 dB Emission Bandwidth	
DNB Job Number:	58074	Date:	22 Nov 2004	Conformance Standard FCC Part 15	
Customer:	Leica Geosystems, Inc.				
Model Number:	GS20 (SR20)	Serial Number:	Proto		
Description:	GPS Positioning System			Clause 15.247(a,2)	
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
22 °C		30 %		102.4 kPa	
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Les Payne</i>					
Channel	Chl Freq (MHz)	6dB BW (MHz)	Min Lim (MHz)	Pass/Fail	
32	2477.95	0.511	0.500	Pass	



15.247 (b,1) Maximum Peak Output Power (Conducted)

Test Procedure:

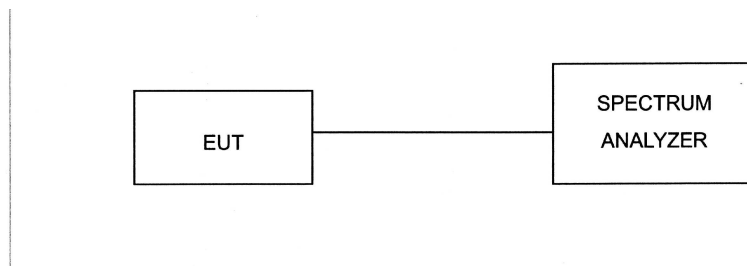
The transmitter output was connected to a spectrum analyzer with a resolution bandwidth of 300kHz and a video bandwidth of 3 MHz.

Requirement: The maximum peak output power shall not exceed 0.125W (21dBm)

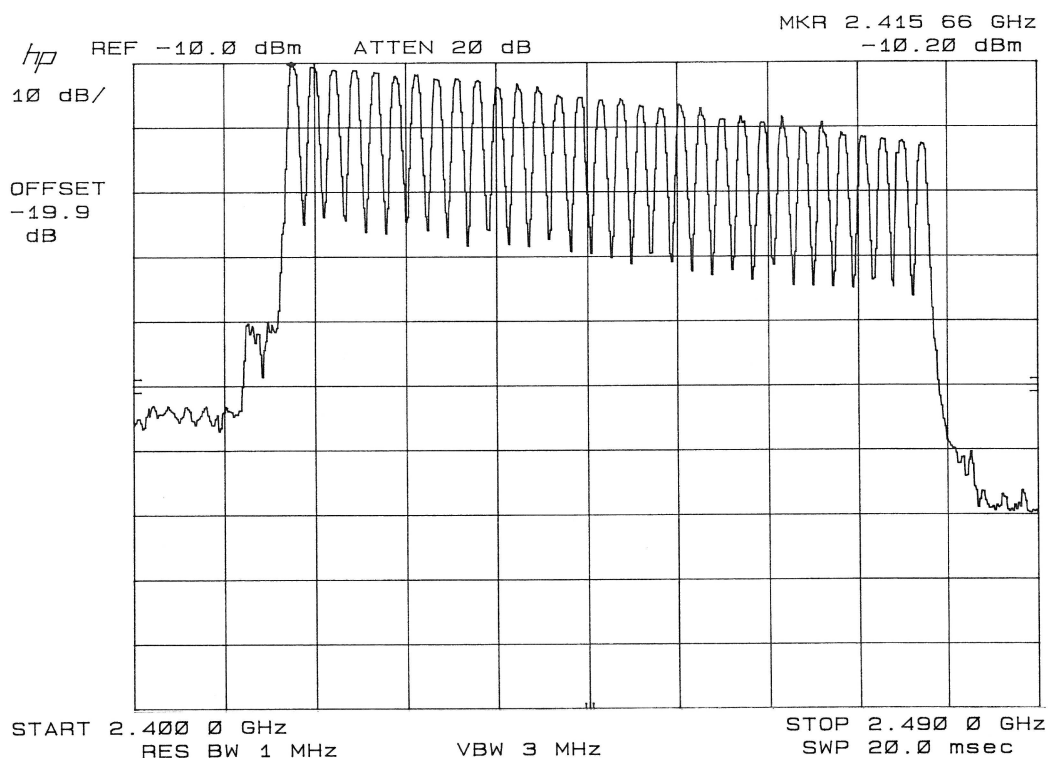
EUT operating conditions:

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

Test Set Up:



		5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		Peak Output Power (Cond)	
DNB Job Number:		58074		Date: 22 Nov 2004	
Customer:		Leica Geosystems, Inc.			
Model Number:		GS20 (SR20)		Serial Number: Proto	
Description:		GPS Positioning System			
Conformance Standard FCC Part 15 Clause 15.247(b,1)					
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
22 °C		30 %		102.4 kPa	
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Tom Elders</i>					
Frequency Span		Conducted Power		Limit	
2400 - 2490		96 (uW) -10.2 dBm		125 mW (21dBm)	
				Pass/Fail	
				Pass	



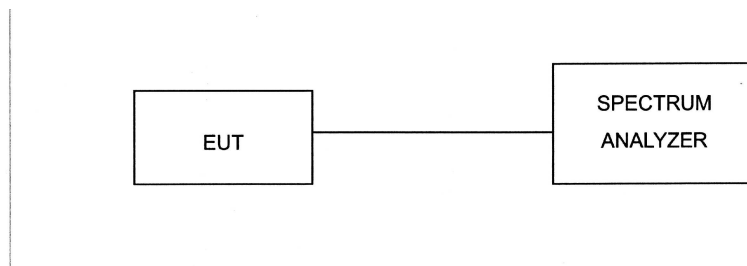
15.247 (c) Conducted Spurious Measurements

The antenna was disconnected and a fifty ohm load was installed. The signal was then directly coupled into a spectrum analyzer. The output signal from 2.400 to 2.480 GHz was transmitted so that the fundamental frequency could be observed.

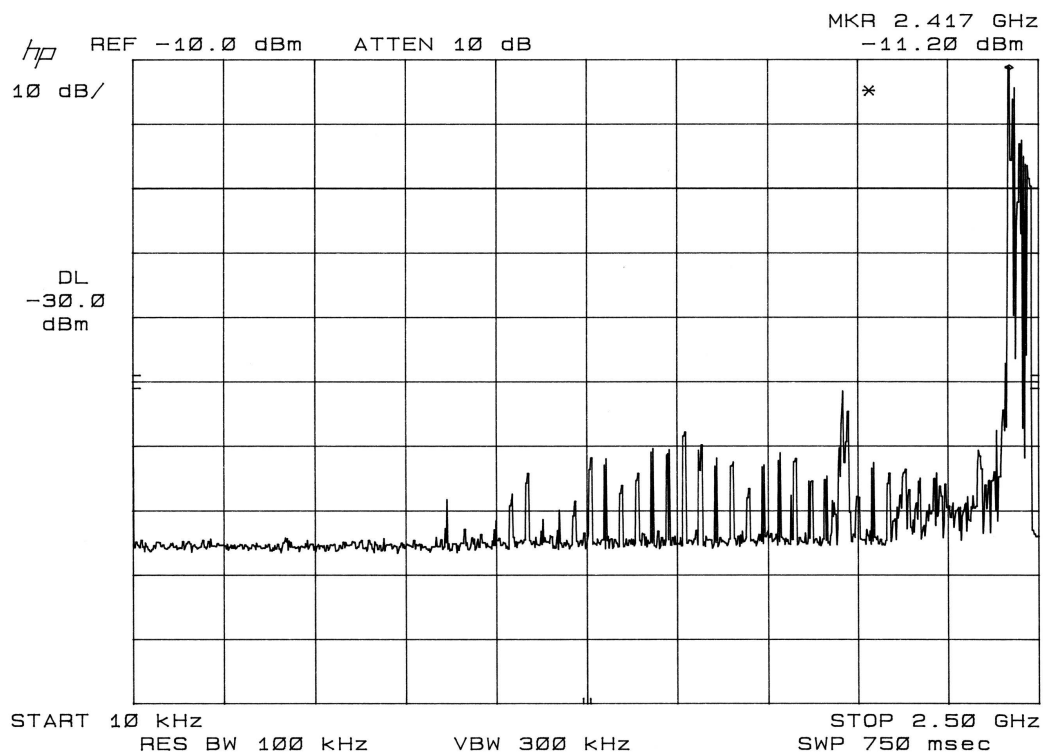
Requirement: In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.

DL = -20dB down point

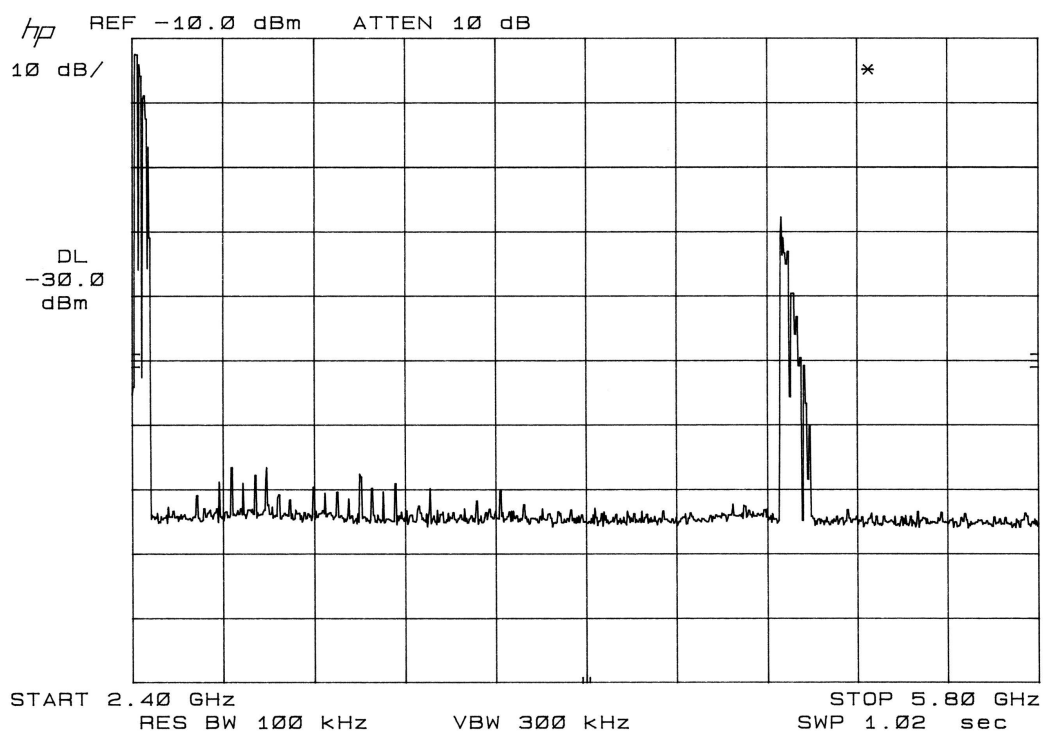
Test Set Up:



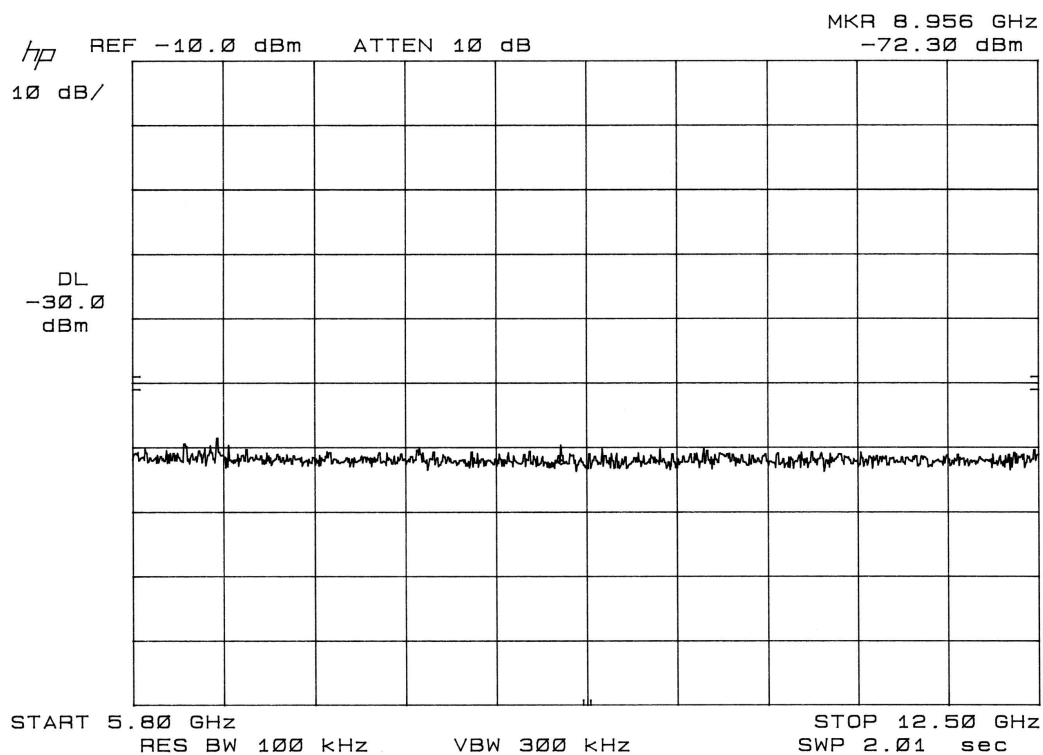
		5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		Conducted Spurious	
DNB Job Number:		58074		Date: 22 Nov 2004	
Customer:		Leica Geosystems, Inc.			
Model Number:		GS20 (SR20)		Serial Number: Proto	
Description:		GPS Positioning System			
Ambient Temperature		Relative Humidity		Barometric Pressure	
22 °C		30 %		102.4 kPa	
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Tom Elders</i>					
Freq Span (MHz)		Reading		-20dBc	
0.010 - 2500		less than -60dBm		-21.2dBm	
				Pass/Fail	
				Pass	



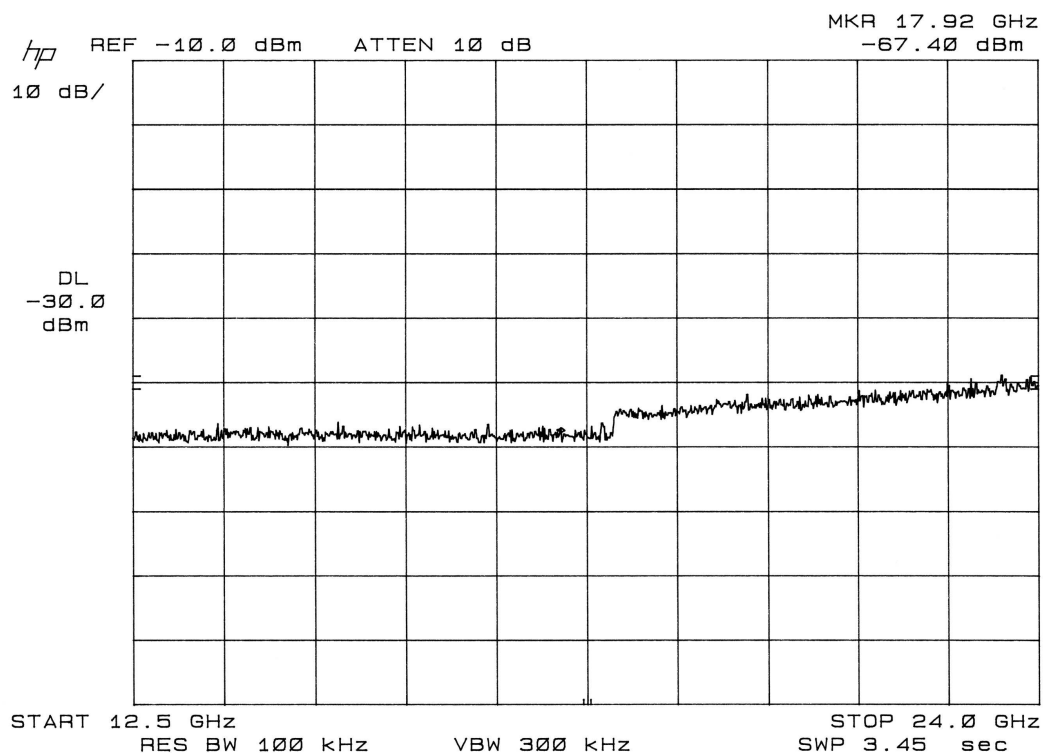
	5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		Conducted Spurious	
DNB Job Number:	58074	Date:	22 Nov 2004	Conformance Standard
Customer:	Leica Geosystems, Inc.			
Model Number:	GS20 (SR20)	Serial Number:	Proto	FCC Part 15
Description:	GPS Positioning System			Clause 15.247(c)
Ambient Temperature		Relative Humidity		Barometric Pressure
22 °C		30 %		102.4 kPa
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Tom Elders</i>				
Freq Span (MHz)	Reading	-20dBc		Pass/Fall
2400 - 5800	-33 dBm	-21.2dBm		Pass



		5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		Conducted Spurious	
DNB Job Number:		58074		Date: 22 Nov 2004	
Customer:		Leica Geosystems, Inc.			
Model Number:		GS20 (SR20)		Serial Number: Proto	
Description:		GPS Positioning System			
Ambient Temperature		Relative Humidity		Barometric Pressure	
22 °C		30 %		102.4 kPa	
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Tom Elders</i>					
Freq Span (MHz)		Reading		-20dBc	
5800 -12500		less than -60dBm		-21.2dBm	
				Pass/Fail	
				Pass	



		5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		Conducted Spurious	
DNB Job Number:		58074		Date: 22 Nov 2004	
Customer:		Leica Geosystems, Inc.			
Model Number:		GS20 (SR20)		Serial Number: Proto	
Description:		GPS Positioning System			
Ambient Temperature		Relative Humidity		Barometric Pressure	
22 °C		30 %		102.4 kPa	
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Tom Elders</i>					
Freq Span (MHz)		Reading		-20dBc	
12500 - 24000		less than -60dBm		-21.2dBm	
				Pass/Fail	
				Pass	



15.247 (d) Peak Power Spectral Density

Test Procedure:

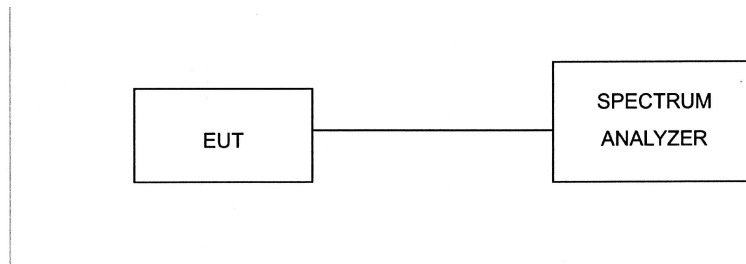
The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 10kHz VBW. Sweep time was set so that the sweep time = frequency span/3kHz. The sweep time shall be such that it was greater than the span/3KHz for a full response of the mixer in the spectrum analyzer.

Requirement: The maximum power density shall not exceed 8dBm

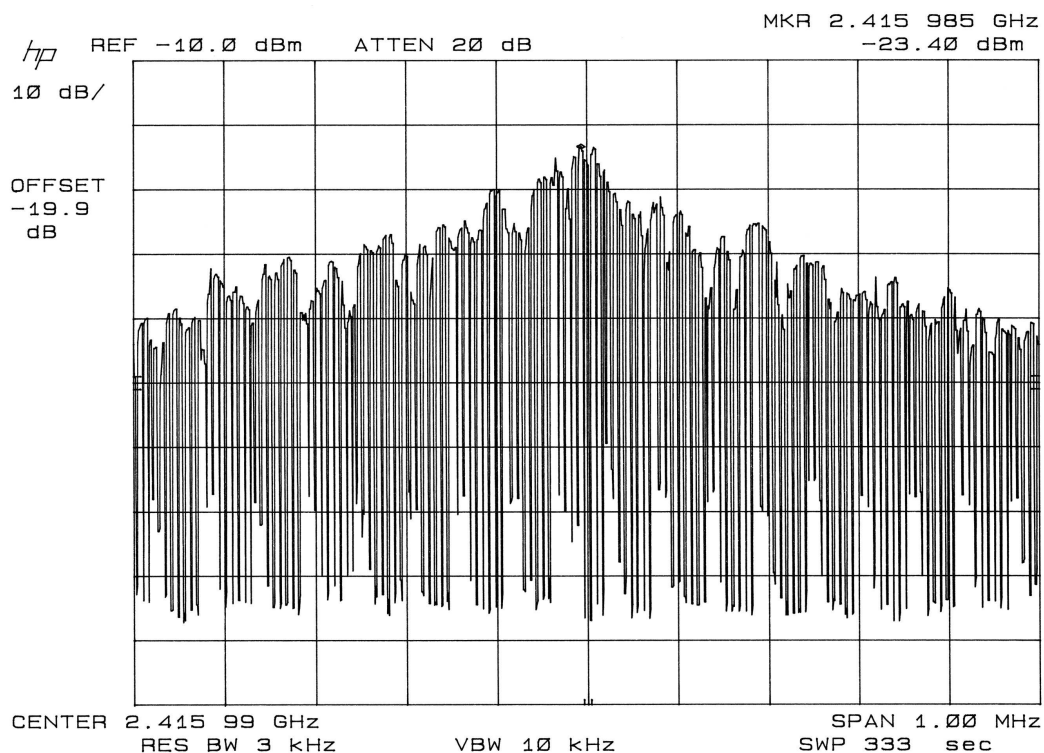
EUT operating conditions:

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

Test Set Up:



		5969 Robinson Avenue Riverside, CA 92503 (951) 637-2630 FAX (951) 637-2704		Peak Power Spectral Density	
DNB Job Number:	58074	Date:	22 Nov 2004	Conformance Standard FCC Part 15	
Customer:	Leica Geosystems, Inc.				
Model Number:	GS20 (SR20)	Serial Number:	Proto		
Description:	GPS Positioning System			Clause 15.247(d)	
Environmental Conditions					
Ambient Temperature		Relative Humidity		Barometric Pressure	
22 °C		30 %		102.4 kPa	
EUT performed within the requirements of the applicable standard ☒ Yes ☐ No <i>Tom Elders</i>					
Center Frequency	Chl Freq (MHz)	3kHz BW (MHz)	Limit in dBm	Pass/Fail	
1	2415.99	-23.4 dBm	8.0	Pass	



RF Exposure Requirements

DNB Report No: RV58074A

FCC ID: QOHSR20

RF Exposure – SAR Calculations (2402-2480 MHz Band)

Note: No SAR evaluation is required if the power is below the FCC threshold:

Tunable Range		Center of tunable range (GHz)	SAR Limitation 60/f (mW)
Freq (Low) GHz	Freq (High) GHz		
2.402	2.480	2.441	24.58

Maximum measured transmitter power			
Pout - Conducted (mW)	Pout - Conducted (dBm)	Maximum Antenna Gain (dBi)	Pout EIRP (mW)
.096	-10.2	2.7	0.178

Comparison to SAR requirements				
Maximum Tx power		SAR Limit	Delta	SAR evaluation required
Conducted	0.096 mW	24.58mW	-24.484mW	No below threshold
EIRP	0.178 mW	24.58mW	-24.402mW	No below threshold

Conclusion: ***No SAR evaluation is required since the maximum Transmitter Pout (both conducted and EIRP) are below the FCC threshold.***

End of Report