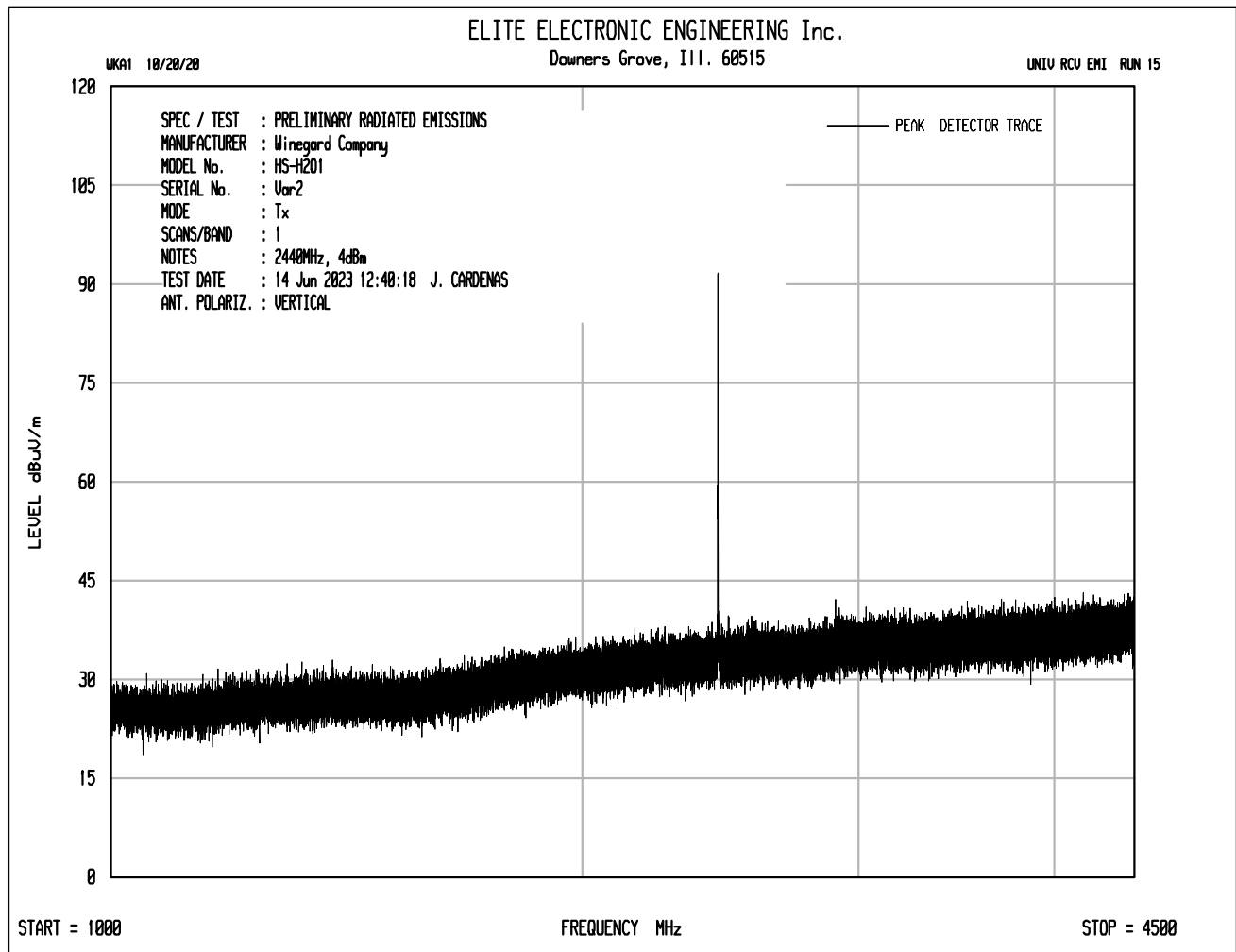
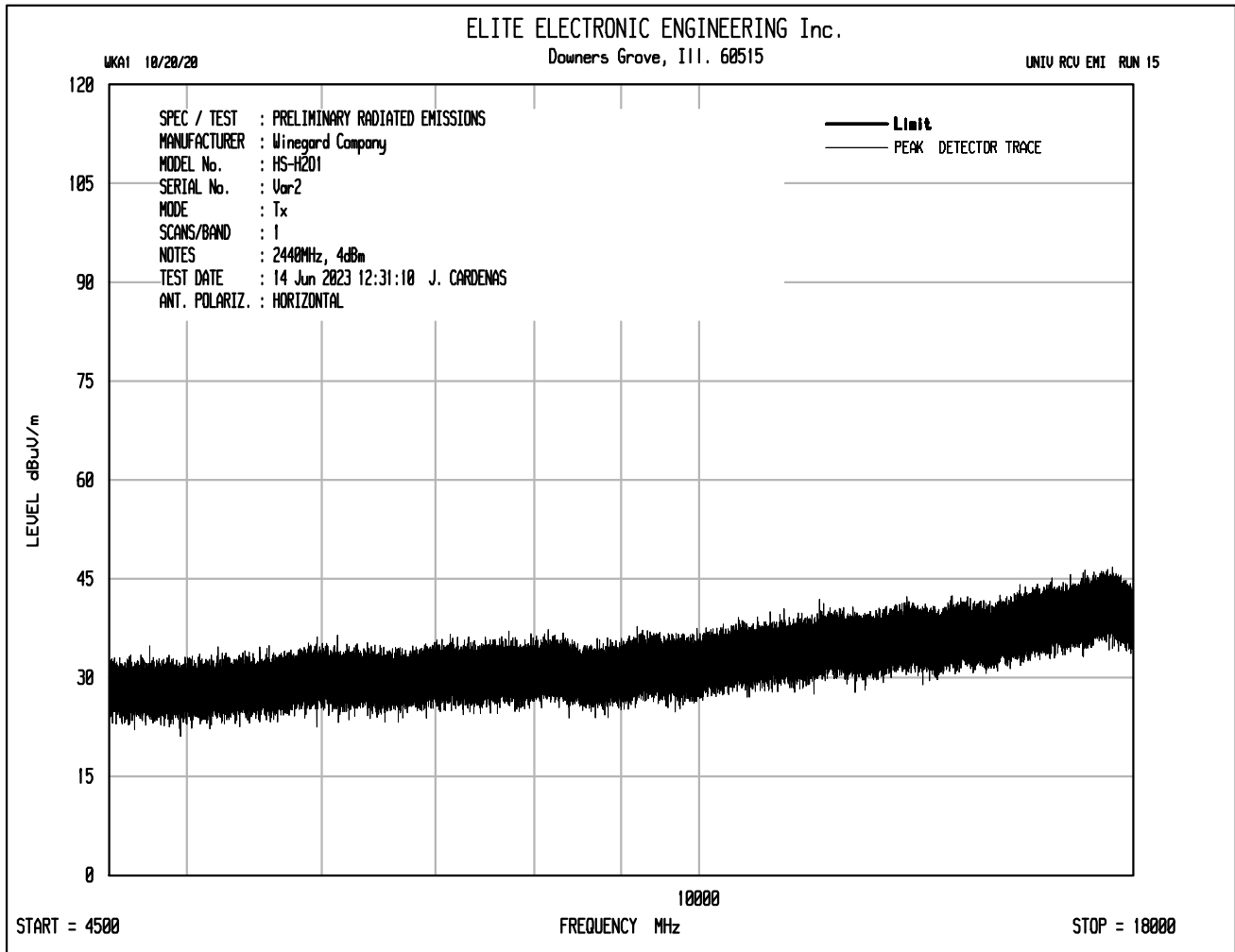
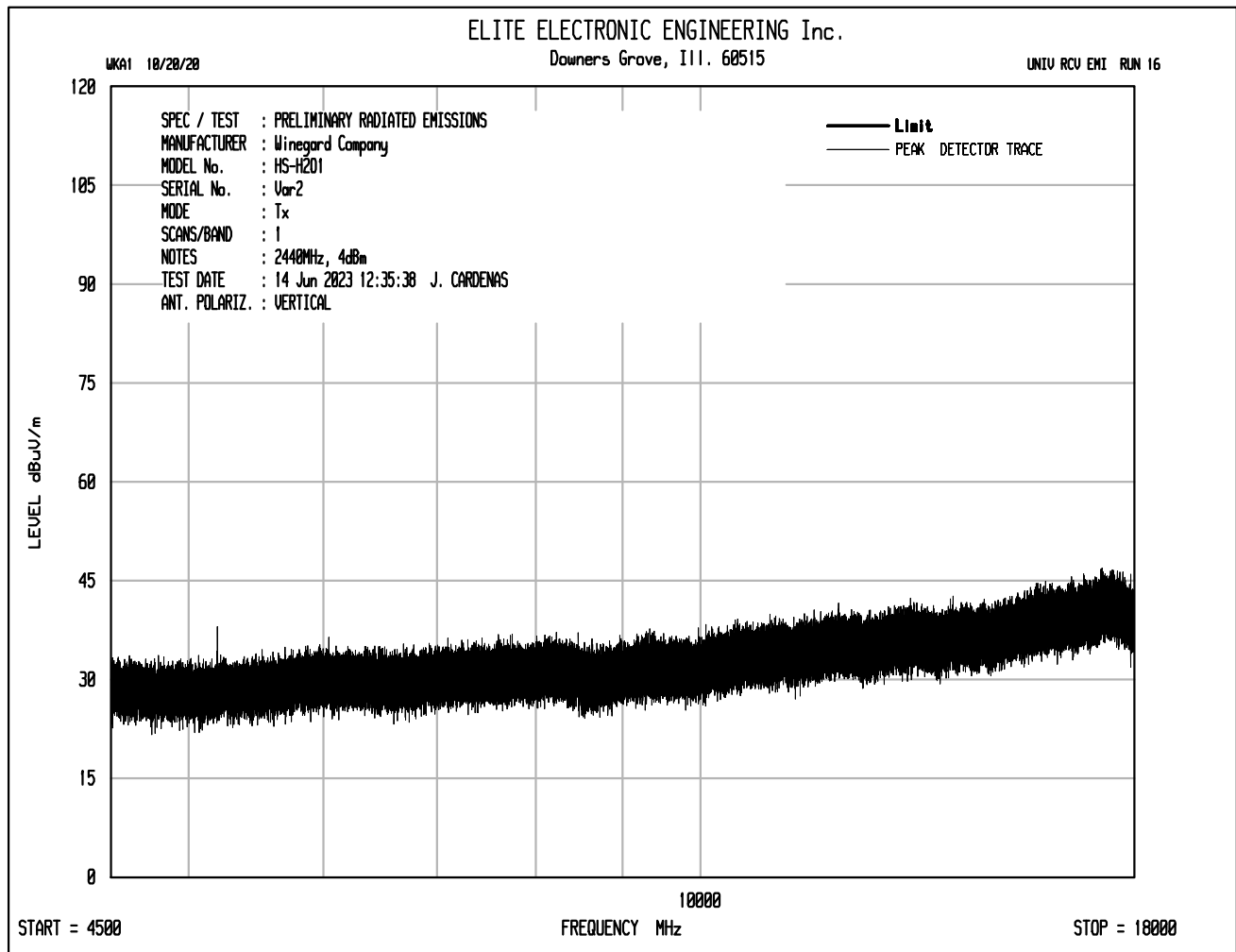
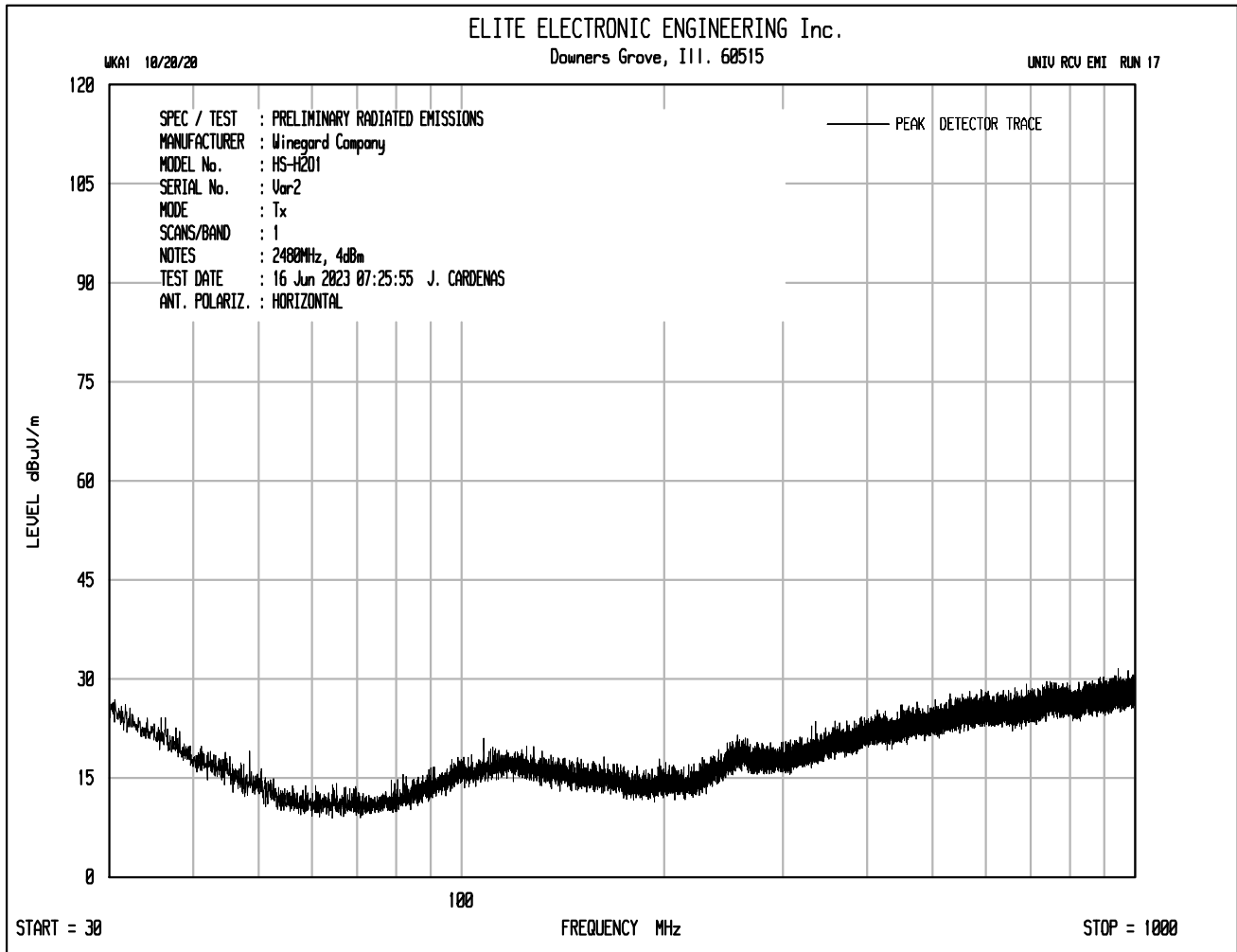
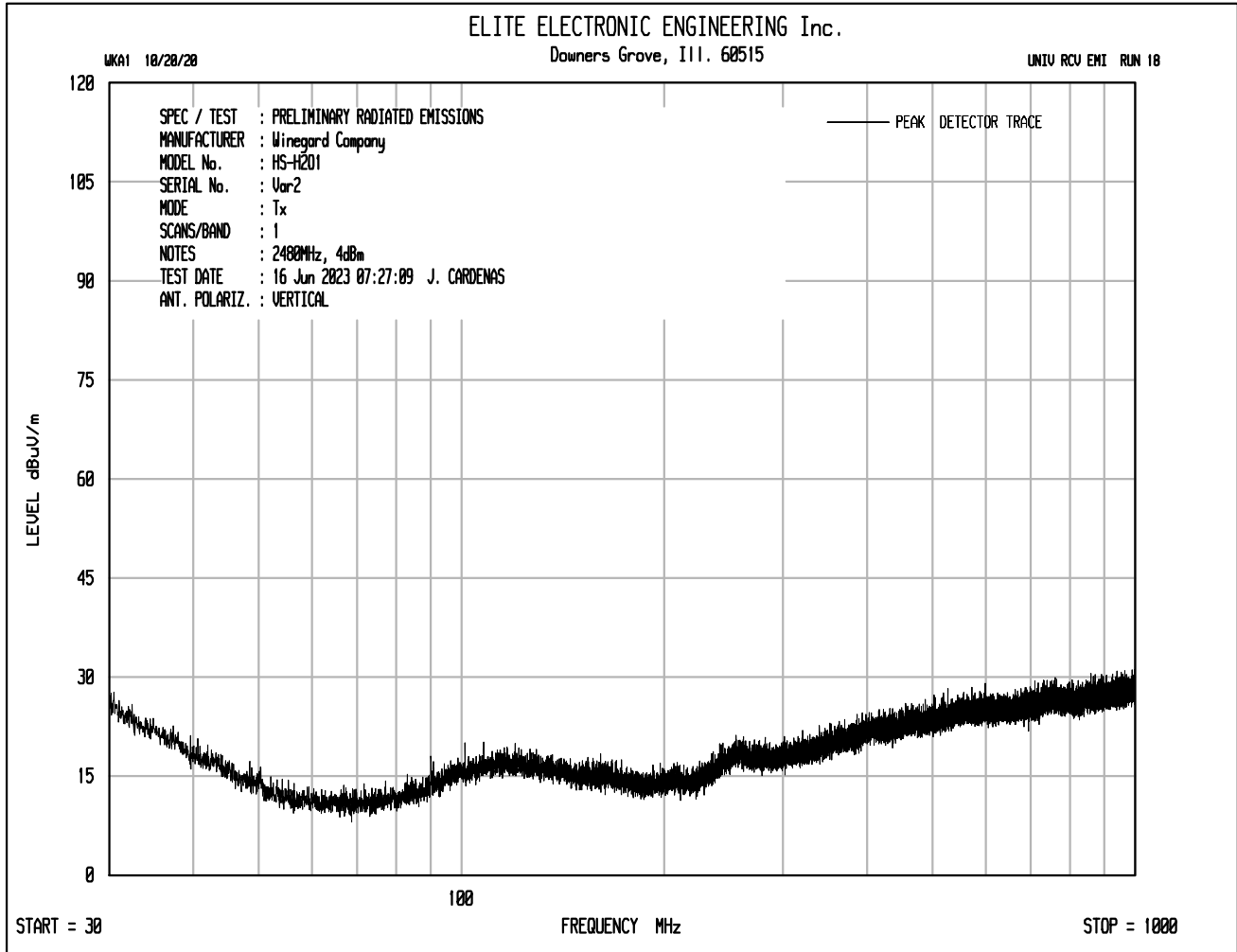


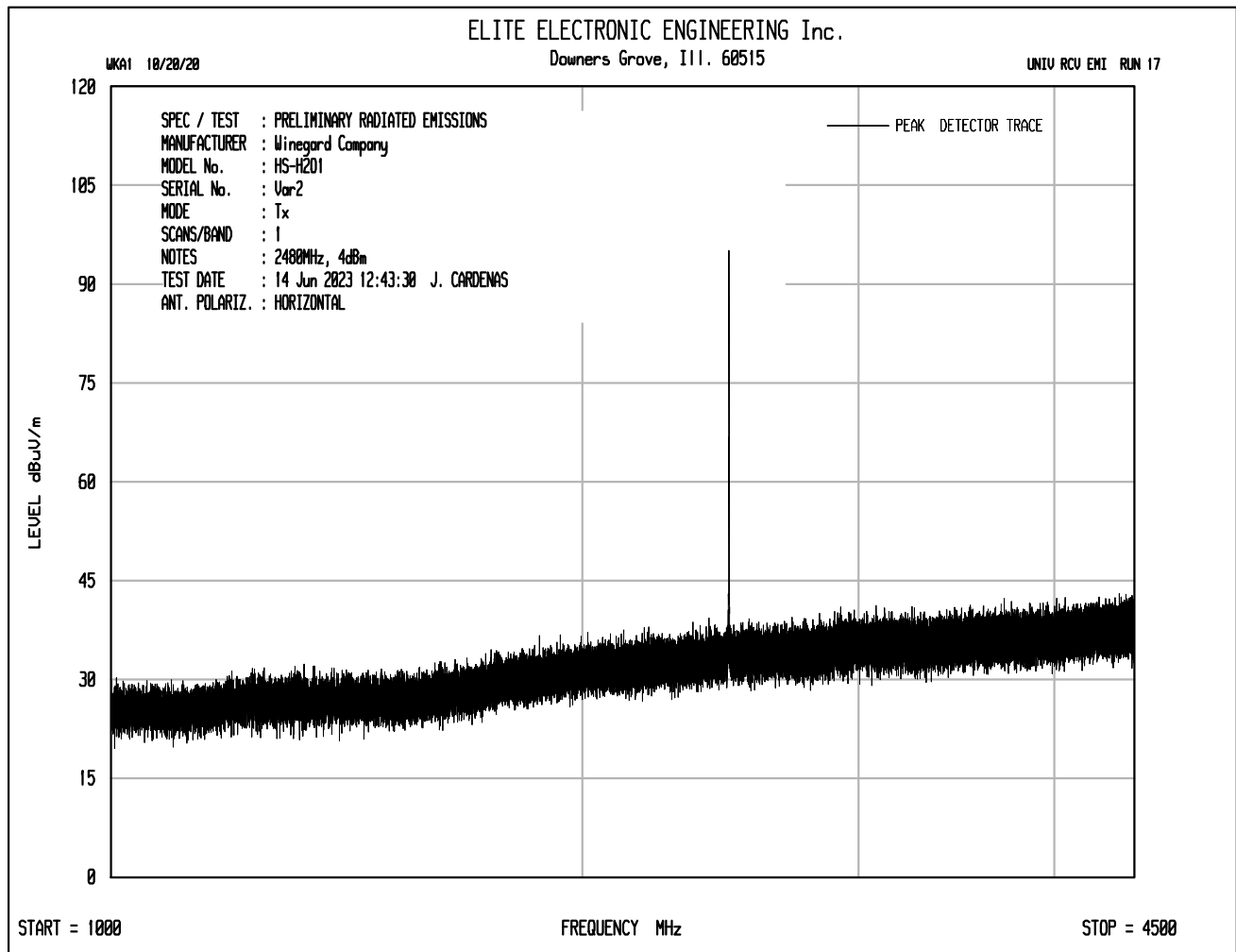


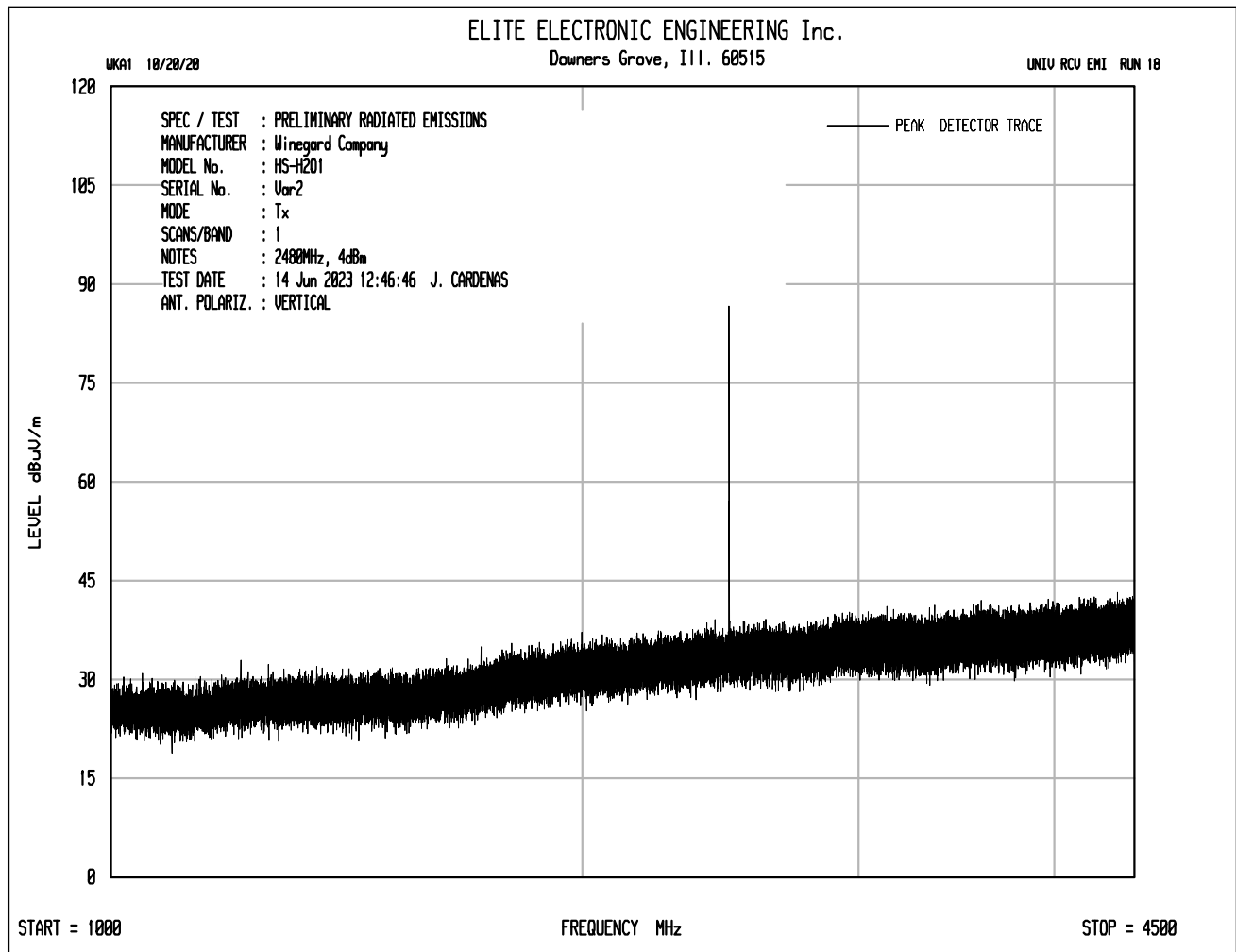


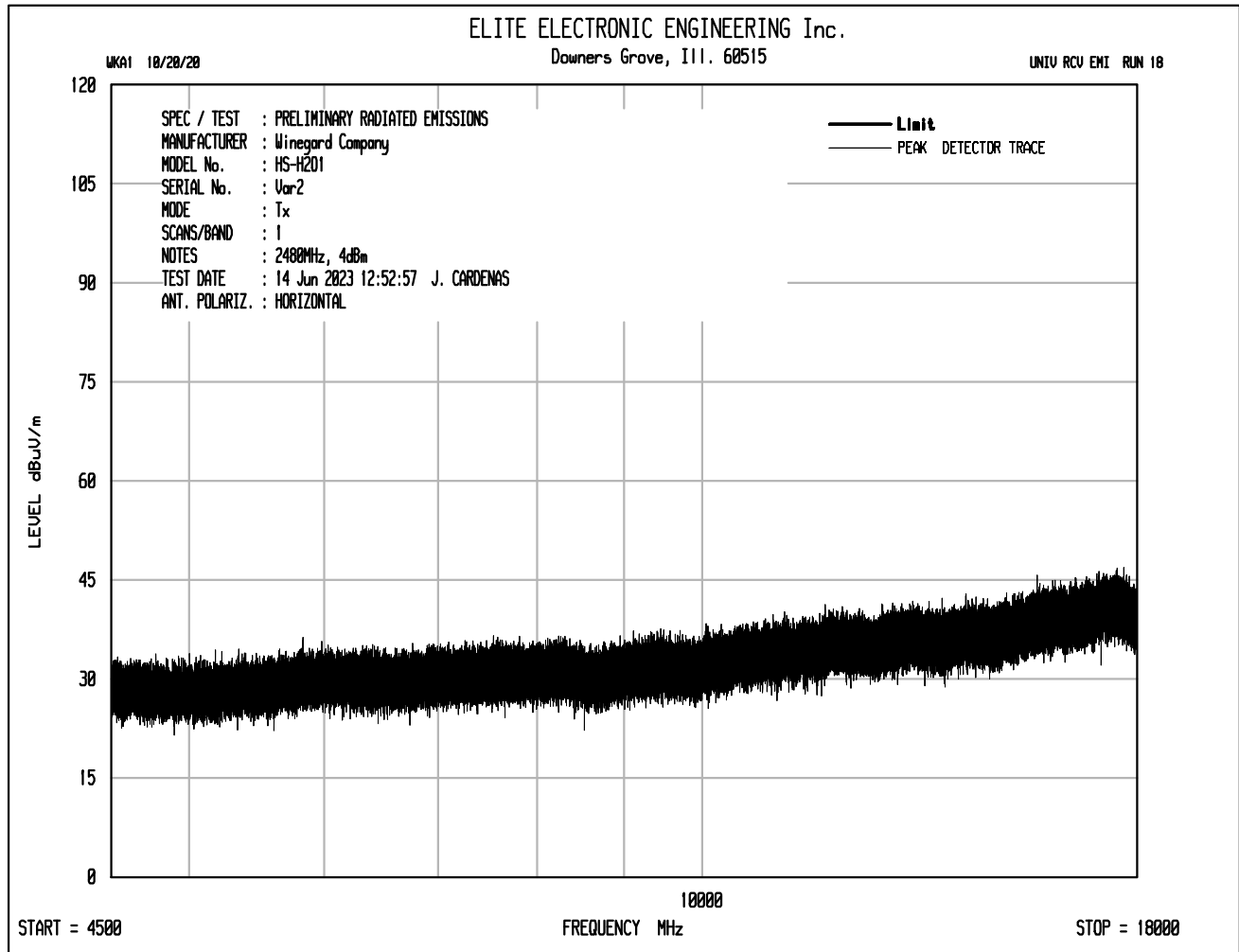


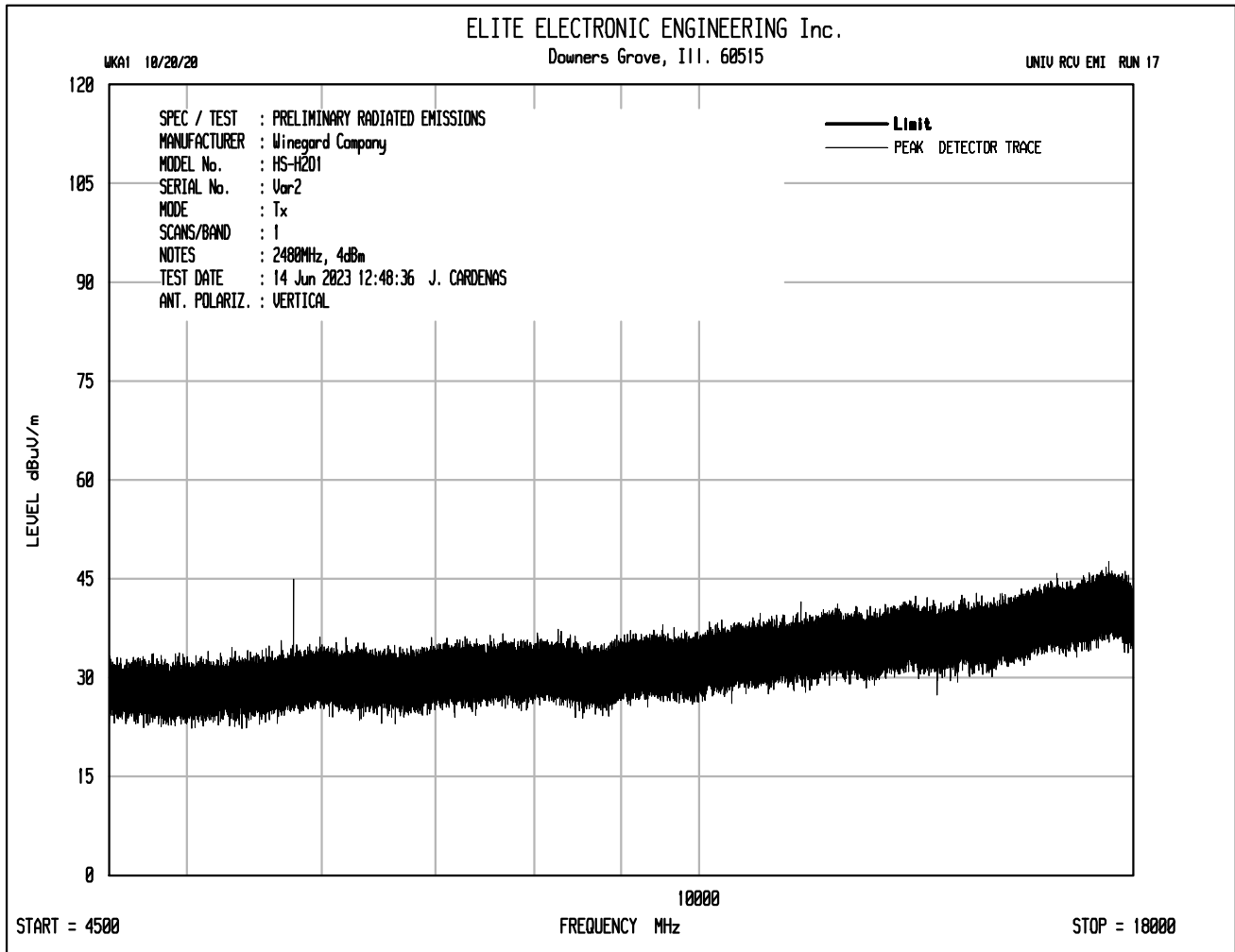












Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2402MHz
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4804.00	H	47.4	*	3.7	34.3	-39.7	45.7	192.5	5000.0	-28.3
	V	47.5	*	3.7	34.3	-39.7	45.8	194.5	5000.0	-28.2
12010.00	H	47.1	*	6.1	38.8	-39.0	53.0	449.1	5000.0	-20.9
	V	48.0	*	6.1	38.8	-39.0	53.9	496.4	5000.0	-20.1

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2402MHz
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4804.00	H	34.41	*	3.7	34.3	-39.7	0.0	32.7	43.1	500.0	-21.3
	V	34.32	*	3.7	34.3	-39.7	0.0	32.6	42.7	500.0	-21.4
12010.00	H	34.62	*	6.1	38.8	-39.0	0.0	40.5	106.2	500.0	-13.5
	V	34.66	*	6.1	38.8	-39.0	0.0	40.6	106.7	500.0	-13.4

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2402MHz
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2402.00	H	64.69		2.6	32.6	0.0	99.9	98583.4	NA	NA
	V	59.97		2.6	32.6	0.0	95.2	57253.7	NA	NA
7206.00	H	38.75		4.6	36.3	-39.7	40.0	100.2	9858.3	-39.9
	V	38.61		4.6	36.3	-39.7	39.9	98.6	9858.3	-40.0
9608.00	H	37.96		5.2	37.1	-39.3	41.0	111.8	9858.3	-38.9
	V	37.50		5.2	37.1	-39.3	40.5	106.0	9858.3	-39.4

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2440MHz
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4880.00	H	48.4	*	3.7	34.2	-39.6	46.7	216.8	5000.0	-27.3
	V	49.0	*	3.7	34.2	-39.6	47.2	230.2	5000.0	-26.7
7320.00	H	48.0	*	4.7	36.3	-39.6	49.3	291.8	5000.0	-24.7
	V	48.6	*	4.7	36.3	-39.6	50.0	315.2	5000.0	-24.0
12200.00	H	48.4	*	6.1	38.9	-38.9	54.4	527.0	5000.0	-19.5
	V	48.6	*	6.1	38.9	-38.9	54.6	539.9	5000.0	-19.3

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2440MHz
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4880.00	H	34.64	*	3.7	34.2	-39.6	0.0	32.9	44.3	500.0	-21.1
	V	34.53	*	3.7	34.2	-39.6	0.0	32.8	43.7	500.0	-21.2
7320.00	H	34.74	*	4.7	36.3	-39.6	0.0	36.1	63.6	500.0	-17.9
	V	34.52	*	4.7	36.3	-39.6	0.0	35.9	62.0	500.0	-18.1
12200.00	H	34.03	*	6.1	38.9	-38.9	0.0	40.1	100.9	500.0	-13.9
	V	34.10	*	6.1	38.9	-38.9	0.0	40.1	101.7	500.0	-13.8

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2440MHz
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2440.00	H	64.66		2.6	32.6	0.0	99.9	99140.4	NA	NA
	V	60.50		2.6	32.6	0.0	95.8	61411.6	NA	NA
9760.00	H	37.43		5.2	37.2	-39.3	40.6	107.4	9914.0	-39.3
	V	37.54		5.2	37.2	-39.3	40.7	108.7	9914.0	-39.2

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2480MHz
Notes	Peak Measurements in the Restricted Bands

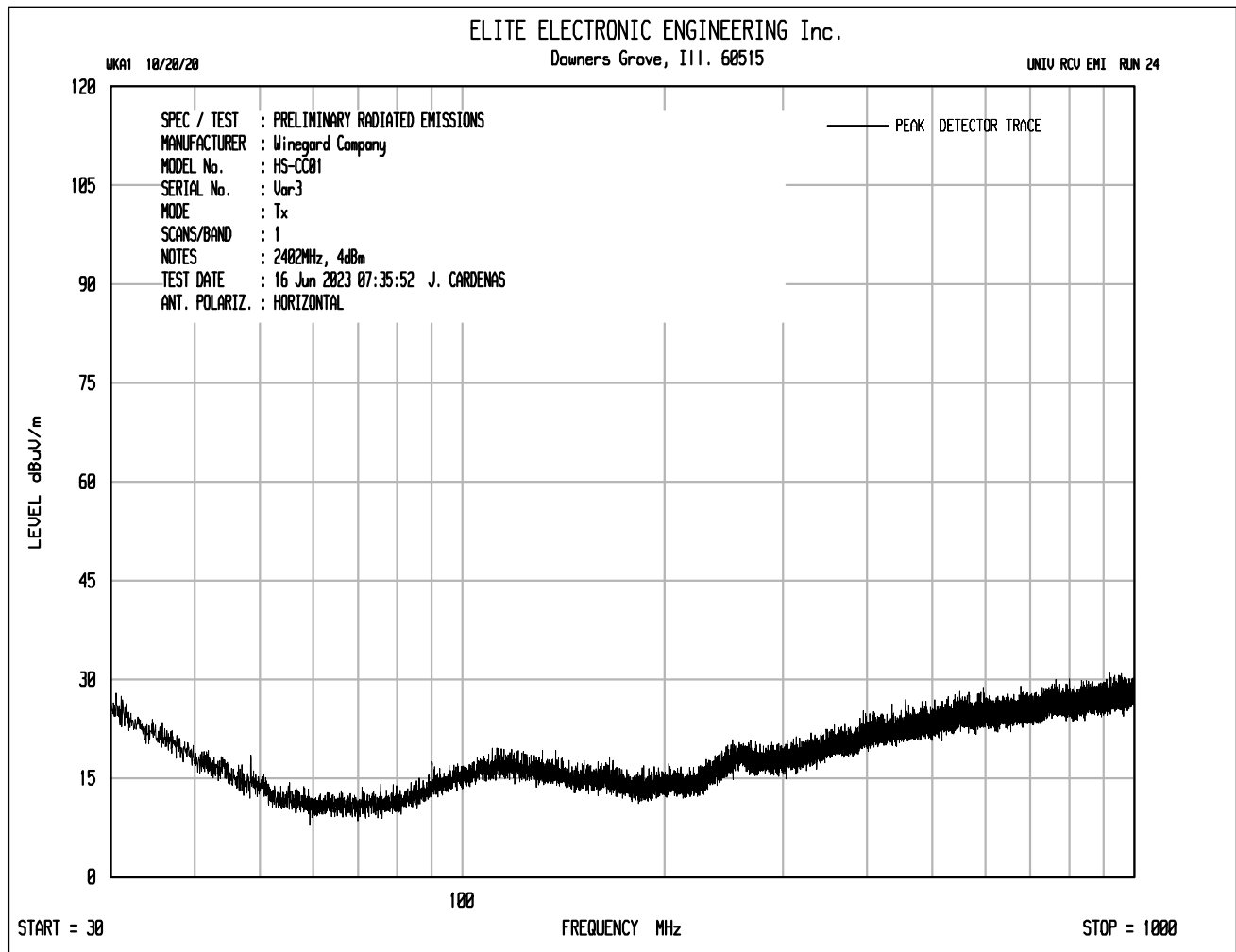
Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4960.00	H	47.9	*	3.7	34.1	-39.6	46.1	201.8	5000.0	-27.9
	V	48.0	*	3.7	34.1	-39.6	46.2	205.0	5000.0	-27.7
7440.00	H	47.5	*	4.7	36.3	-39.6	49.0	282.0	5000.0	-25.0
	V	47.3	*	4.7	36.3	-39.6	48.8	275.0	5000.0	-25.2
12400.00	H	47.5	*	6.1	38.9	-38.8	53.7	486.1	5000.0	-20.2
	V	46.9	*	6.1	38.9	-38.8	53.1	451.6	5000.0	-20.9

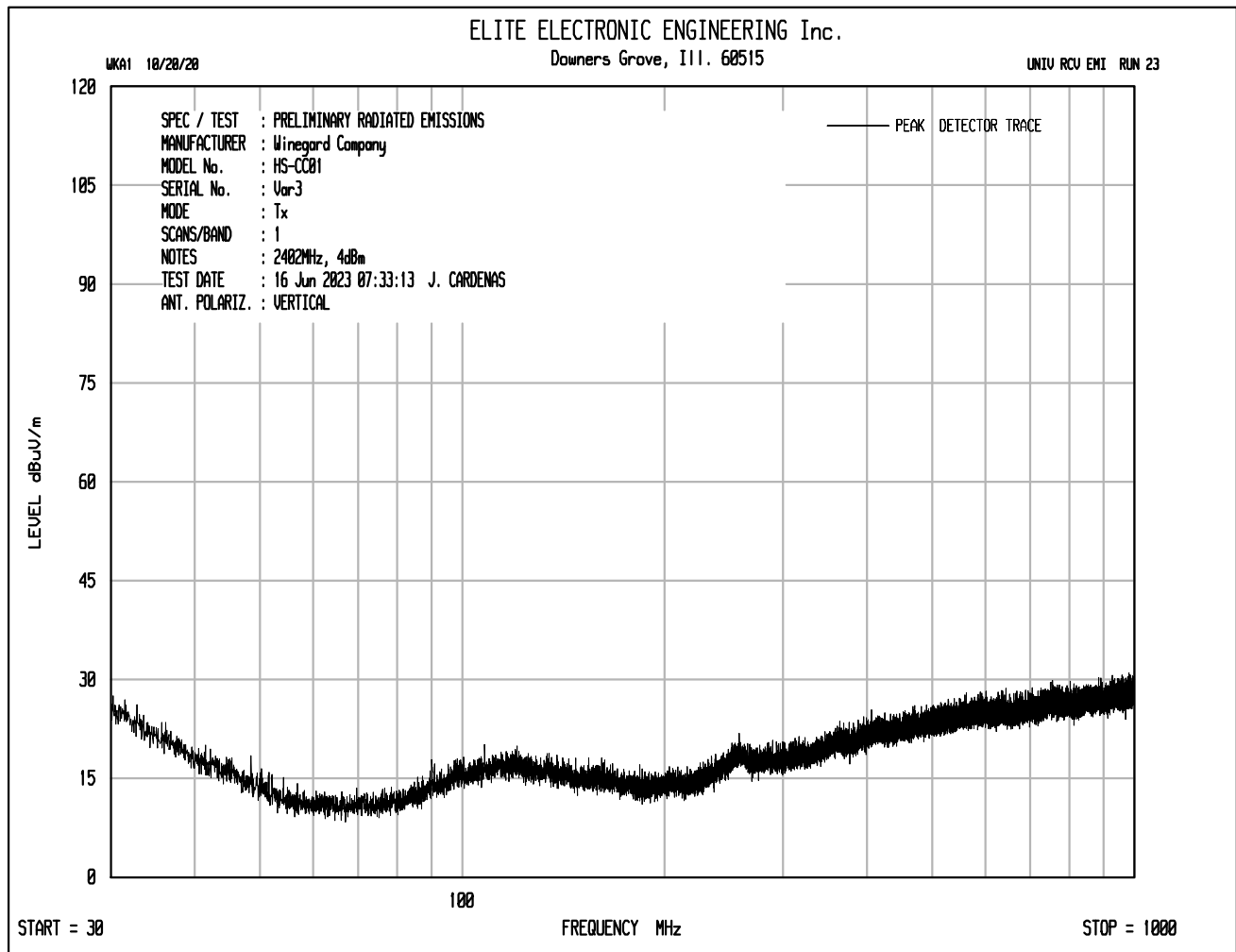
Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2480MHz
Notes	Average Measurements in the Restricted Bands

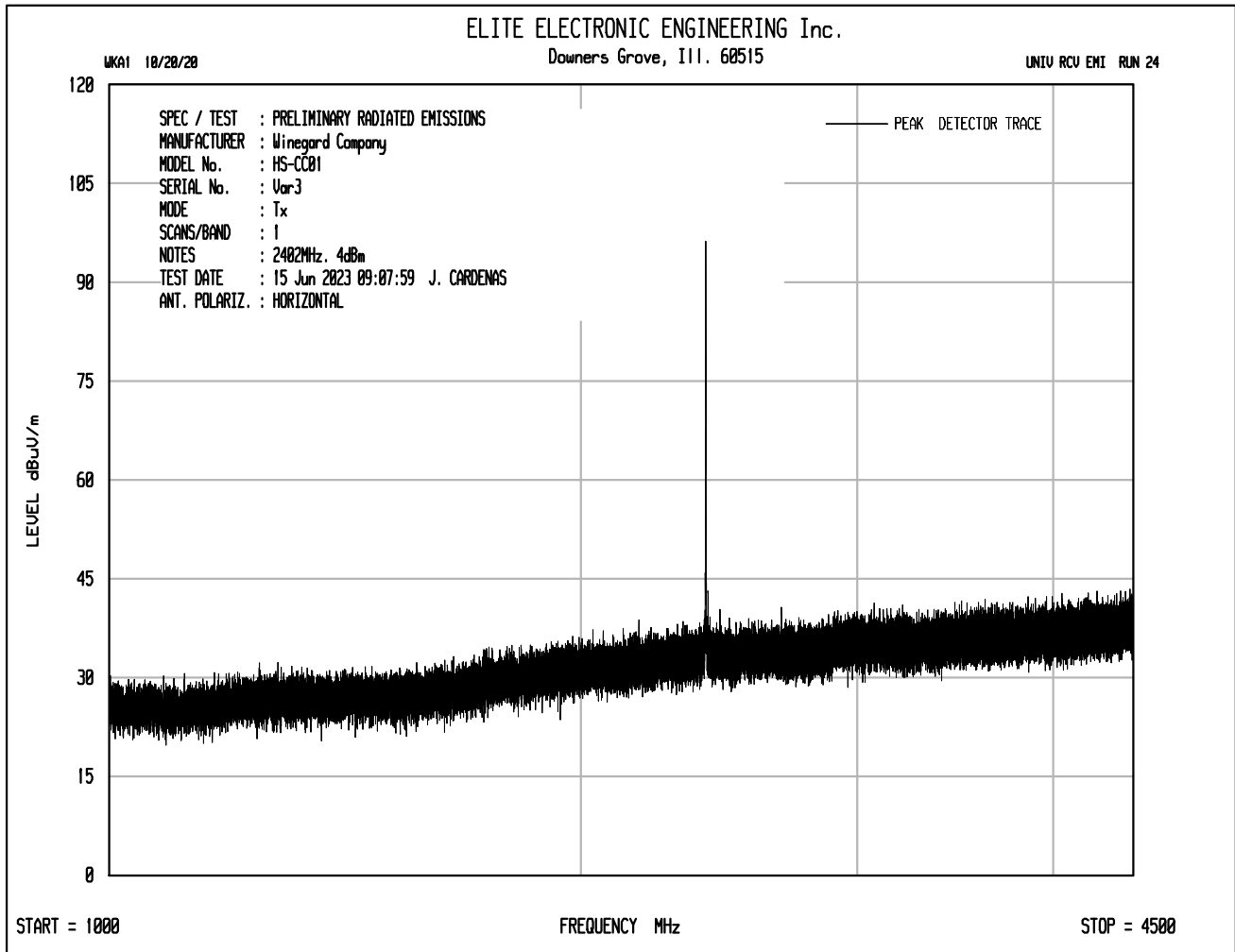
Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4960.00	H	34.54	*	3.7	34.1	-39.6	0.0	32.8	43.5	500.0	-21.2
	V	34.41	*	3.7	34.1	-39.6	0.0	32.6	42.8	500.0	-21.3
7440.00	H	34.32	*	4.7	36.3	-39.6	0.0	35.8	61.7	500.0	-18.2
	V	35.05	*	4.7	36.3	-39.6	0.0	36.5	67.1	500.0	-17.4
12400.00	H	33.71	*	6.1	38.9	-38.8	0.0	39.9	99.0	500.0	-14.1
	V	33.84	*	6.1	38.9	-38.8	0.0	40.0	100.5	500.0	-13.9

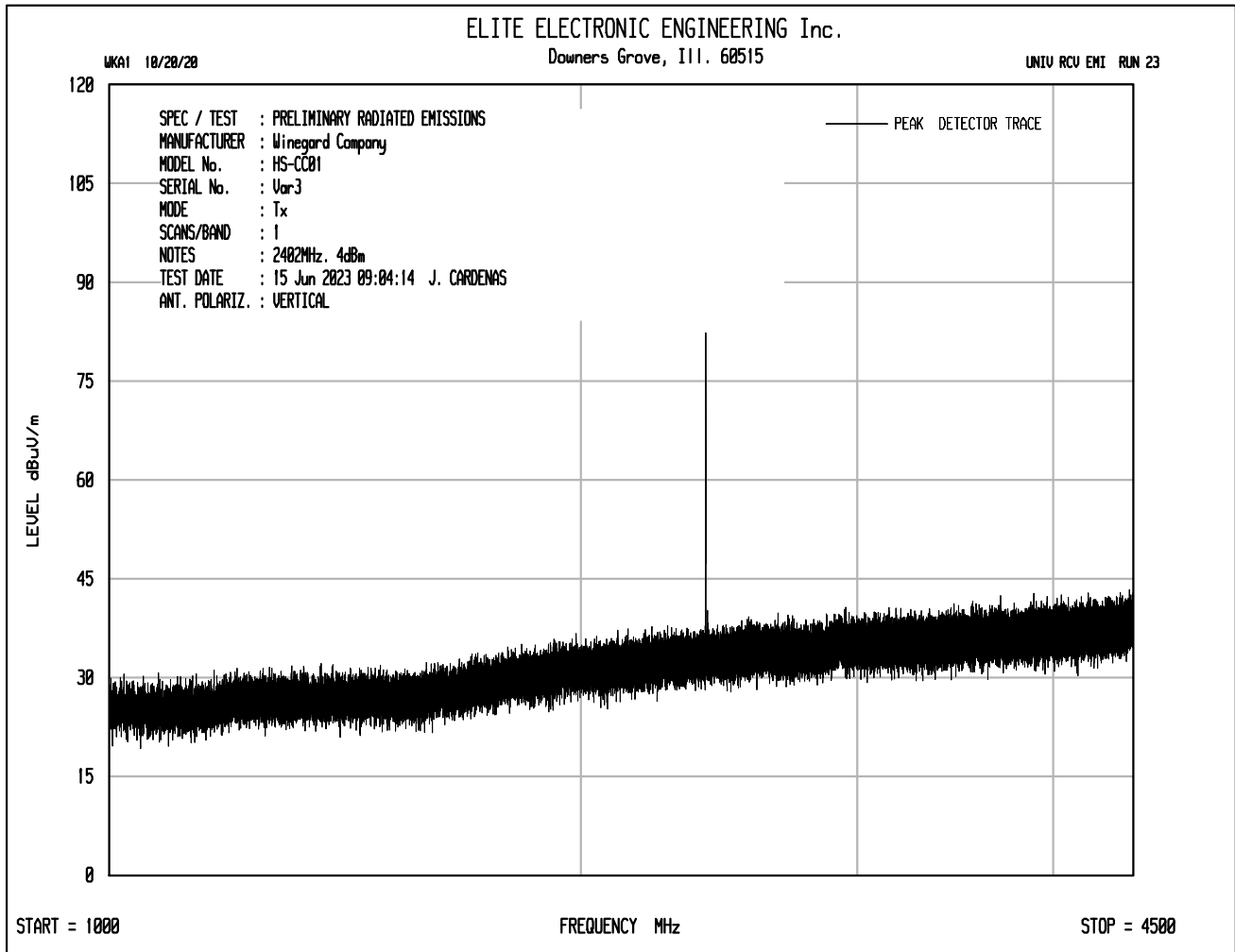
Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-H2O1
Serial No.	Var2
Mode	Tx
Frequency Tested	2480MHz
Notes	Peak Measurements in Non-Restricted Bands

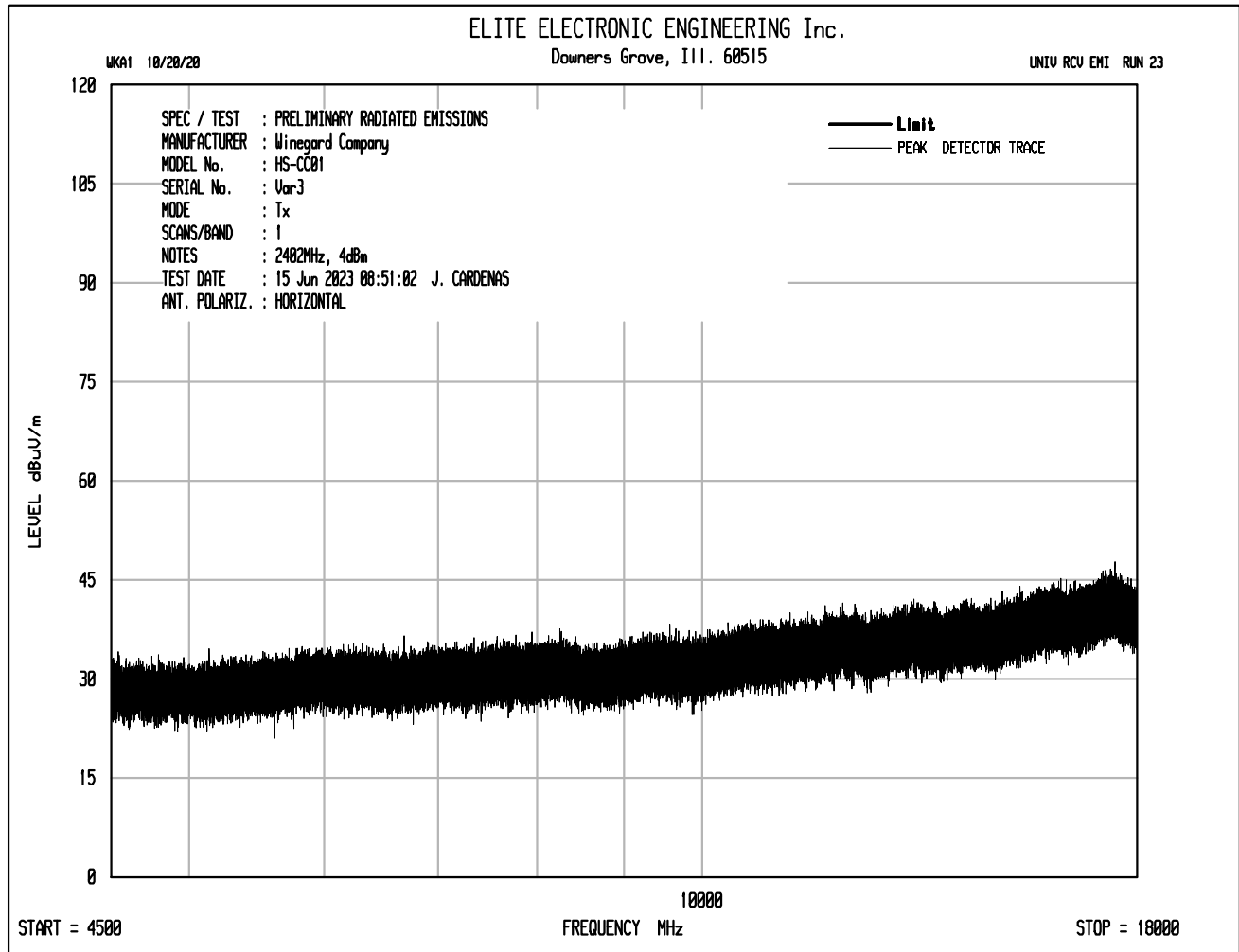
Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2480.00	H	64.33		2.7	32.7	0.0	99.7	96583.6	NA	NA
	V	62.43		2.7	32.7	0.0	97.8	77607.5	NA	NA
9920.00	H	36.24	*	5.3	37.2	-39.2	39.5	94.0	9658.4	-40.2
	V	36.90	*	5.3	37.2	-39.2	40.1	101.5	9658.4	-39.6

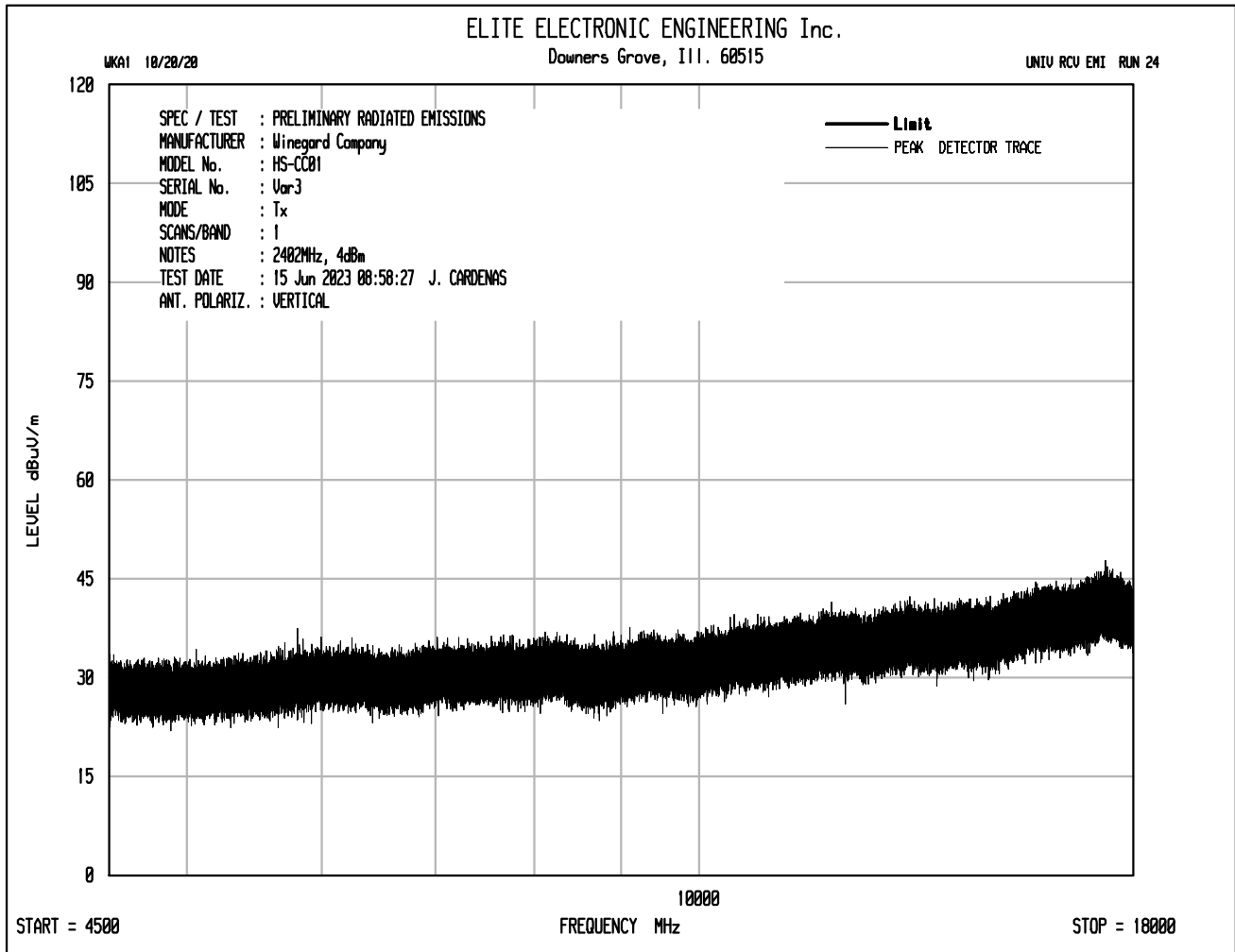


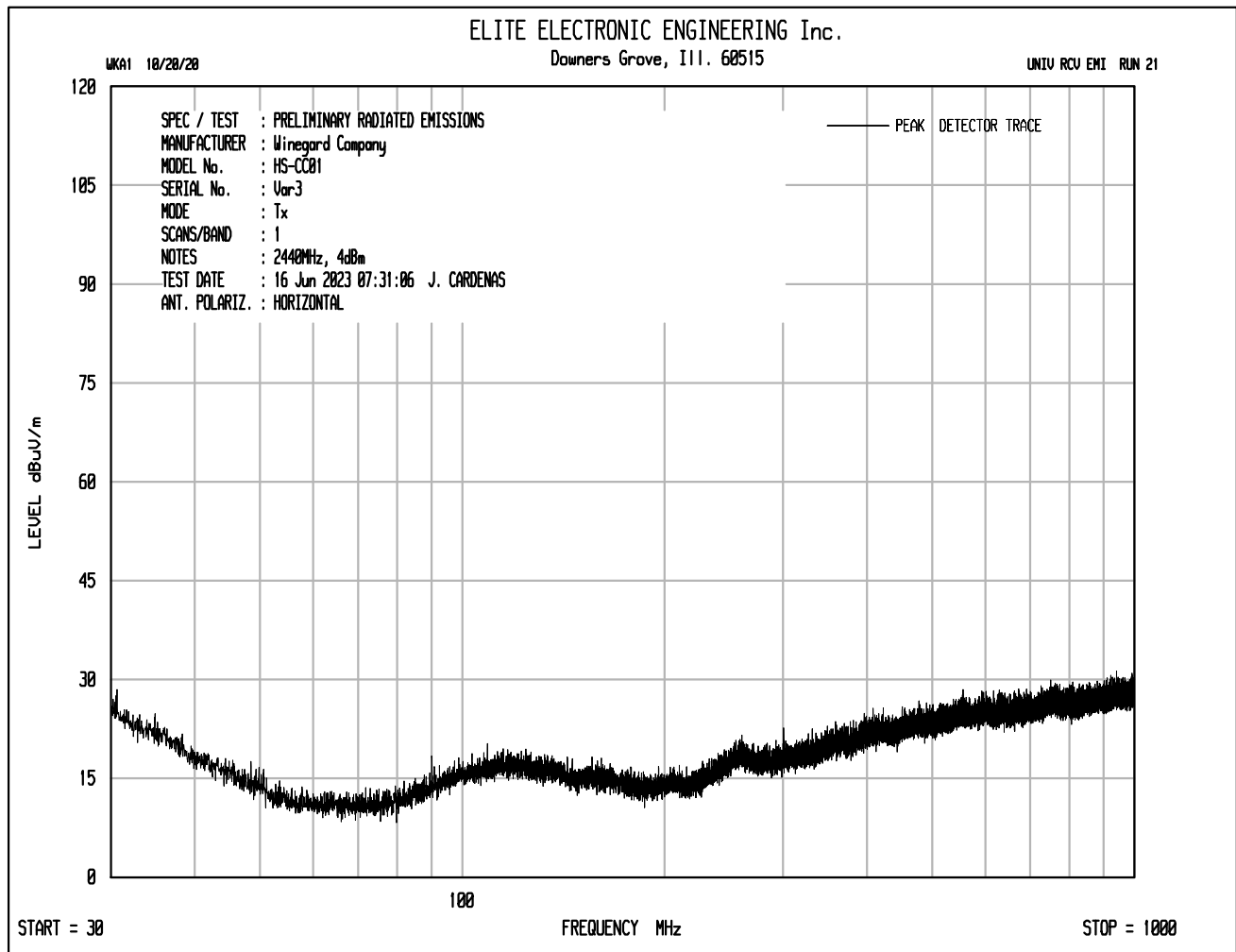


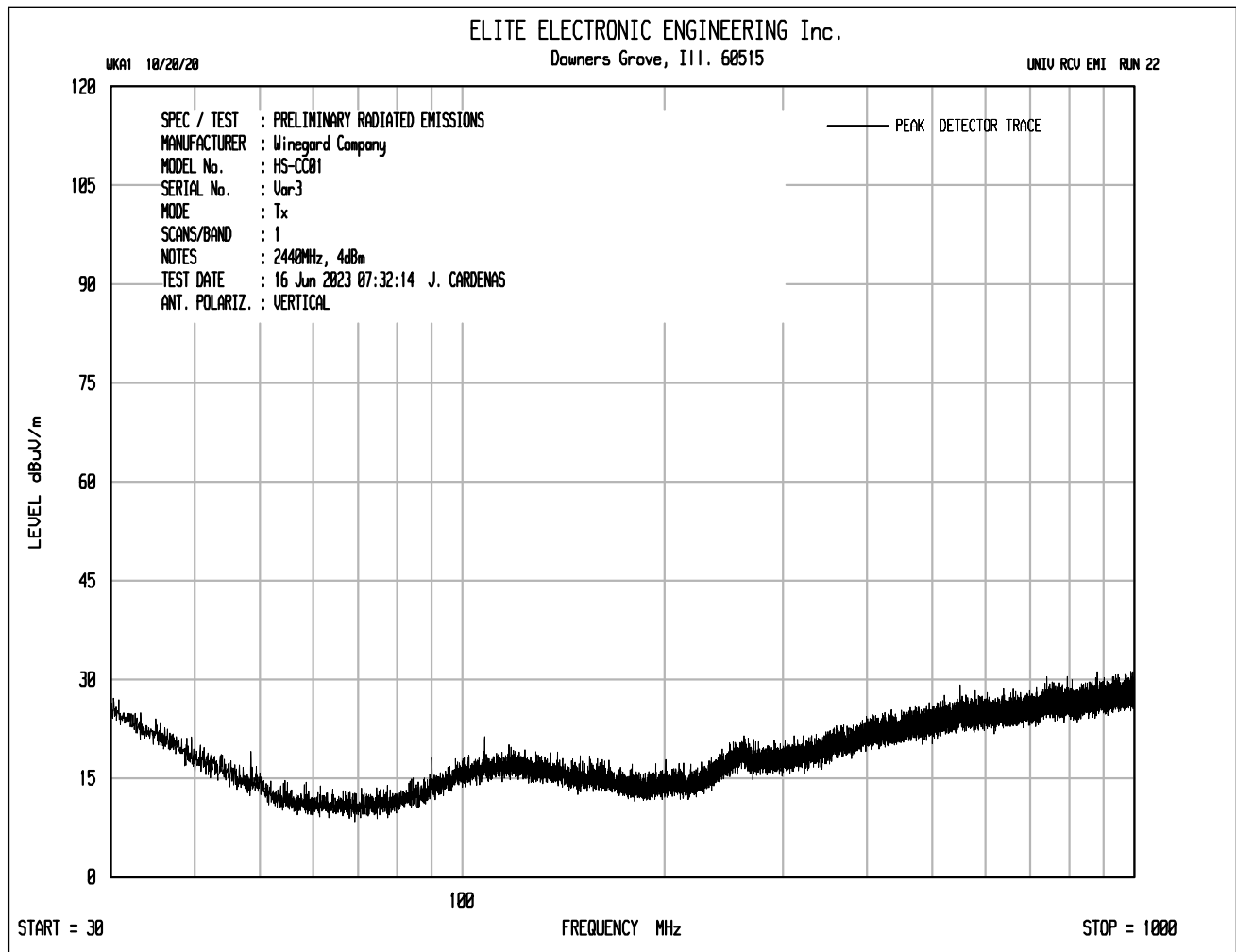


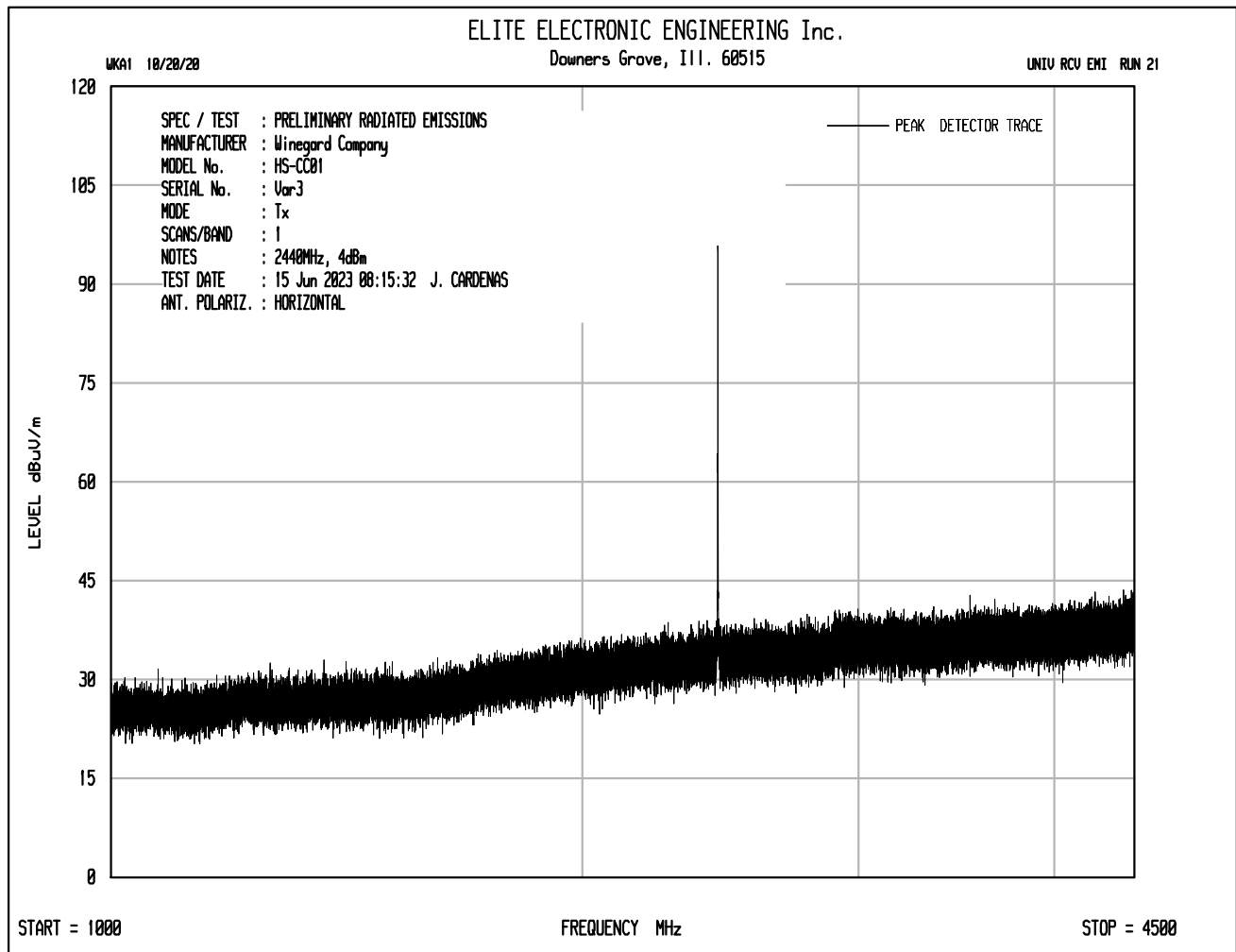


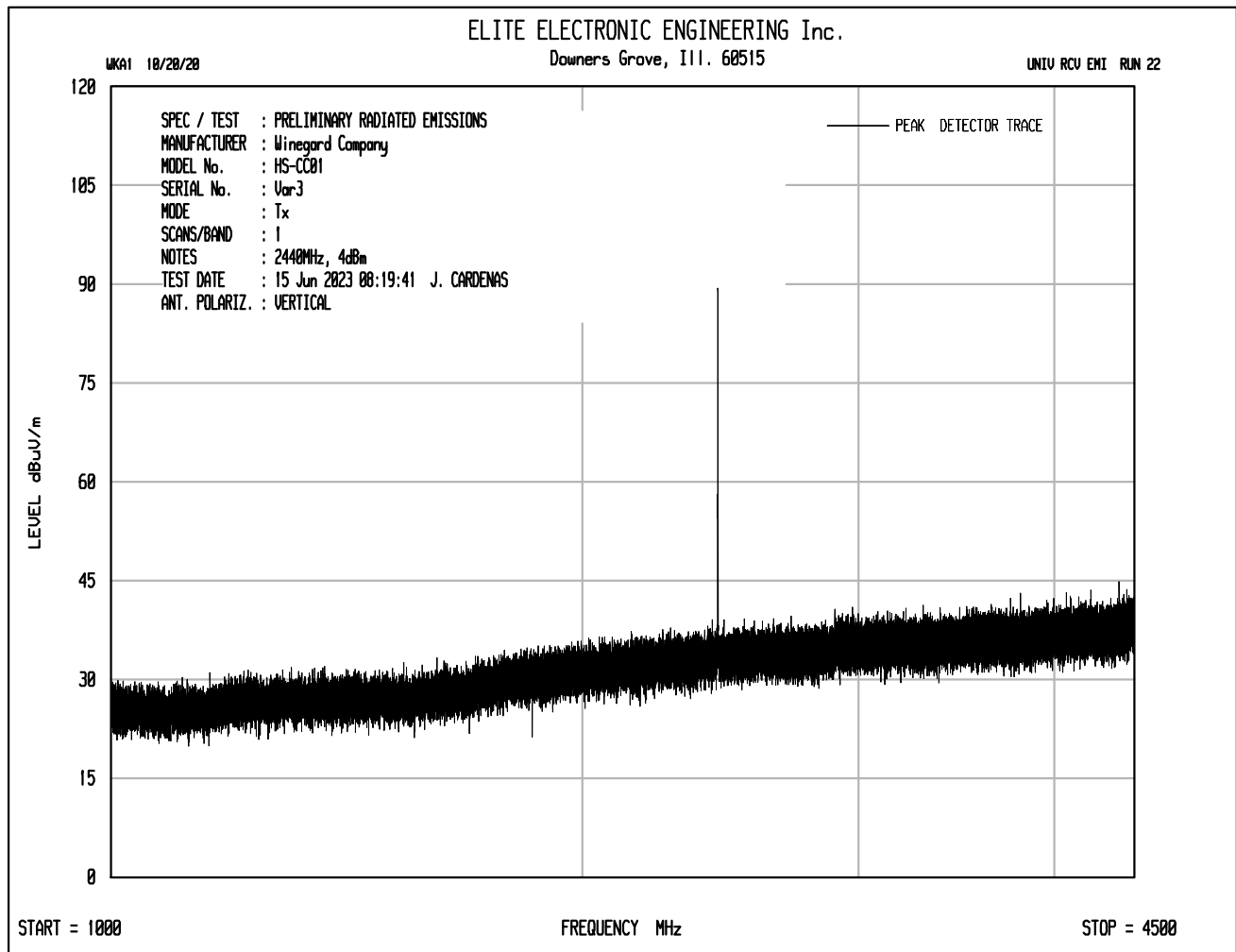


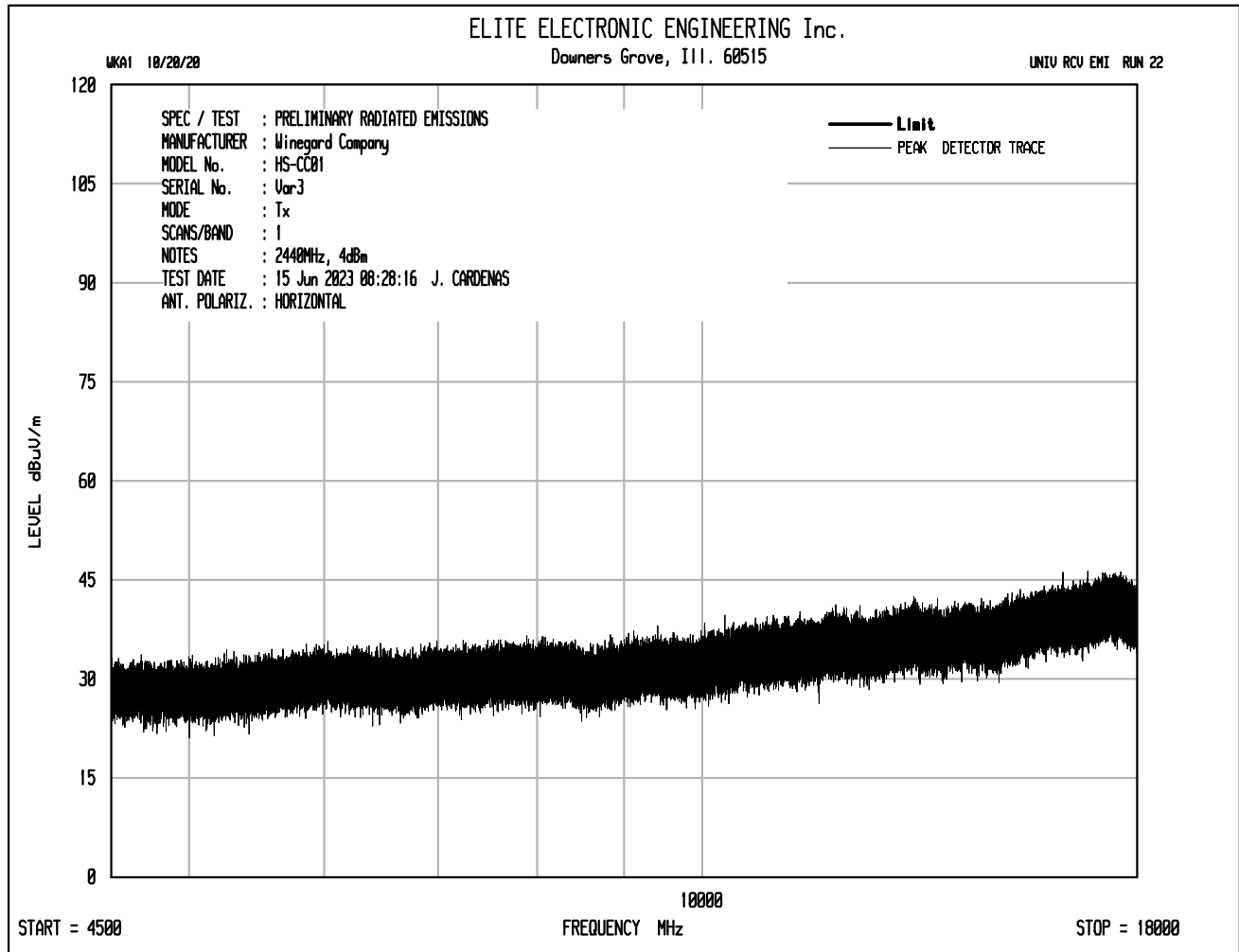


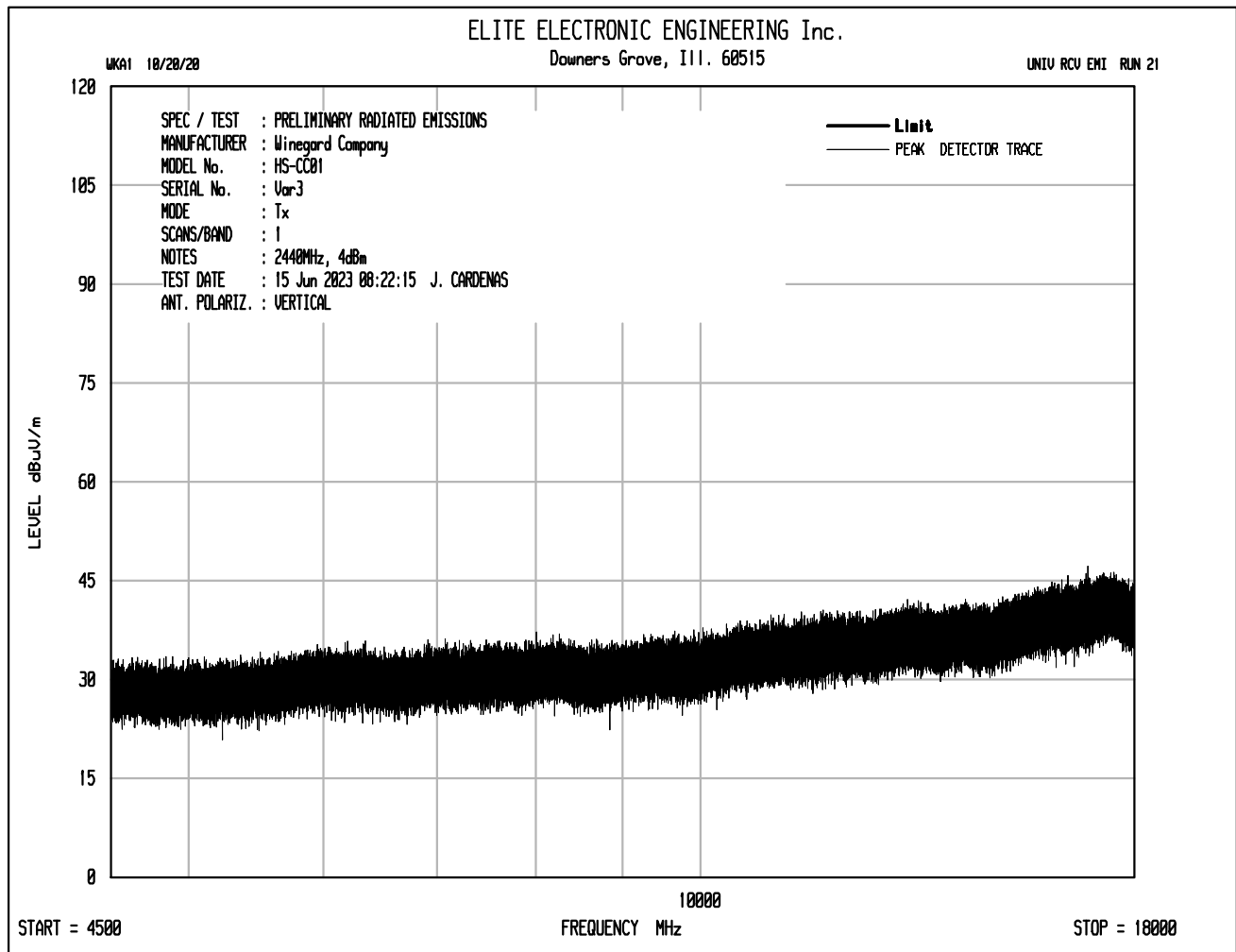


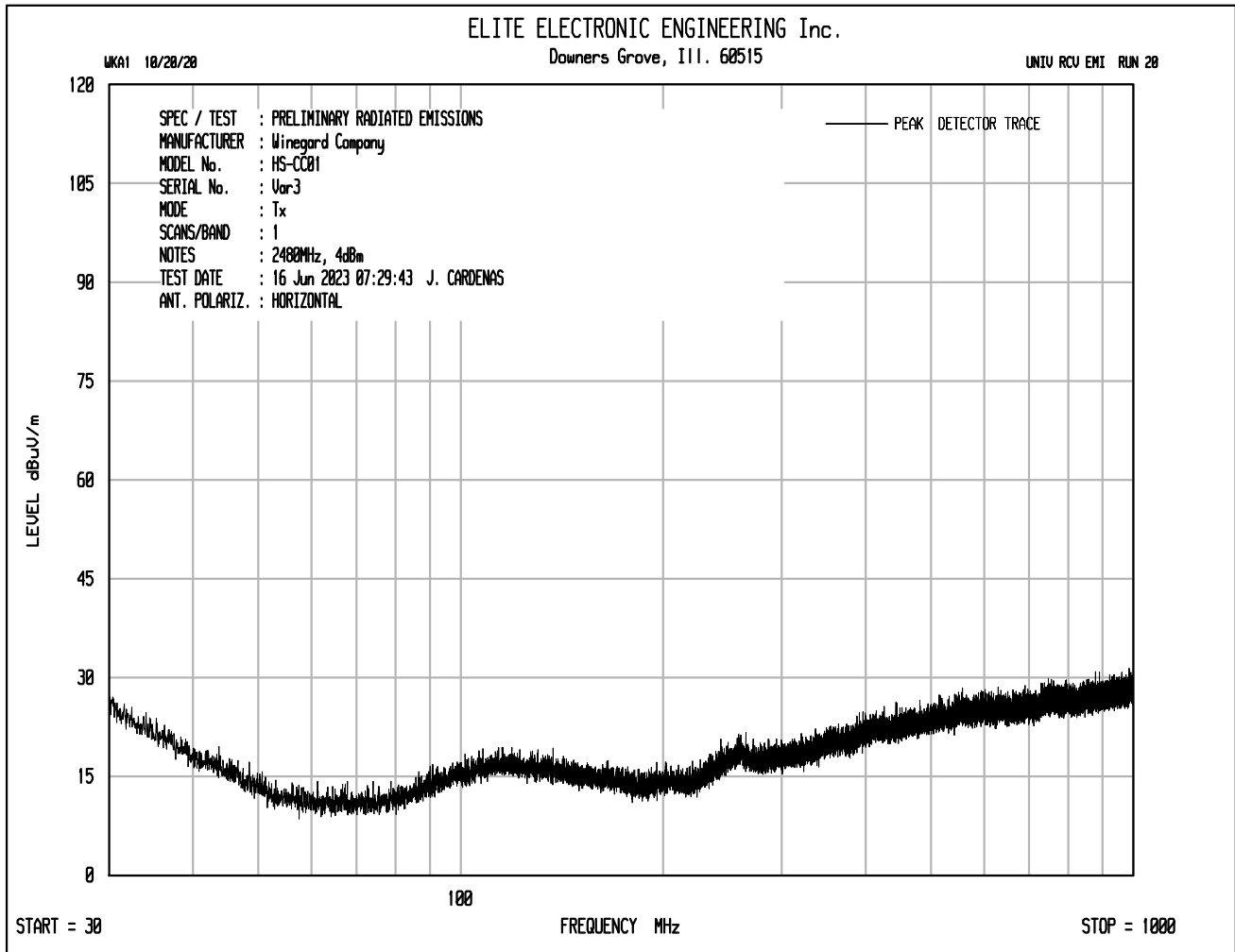


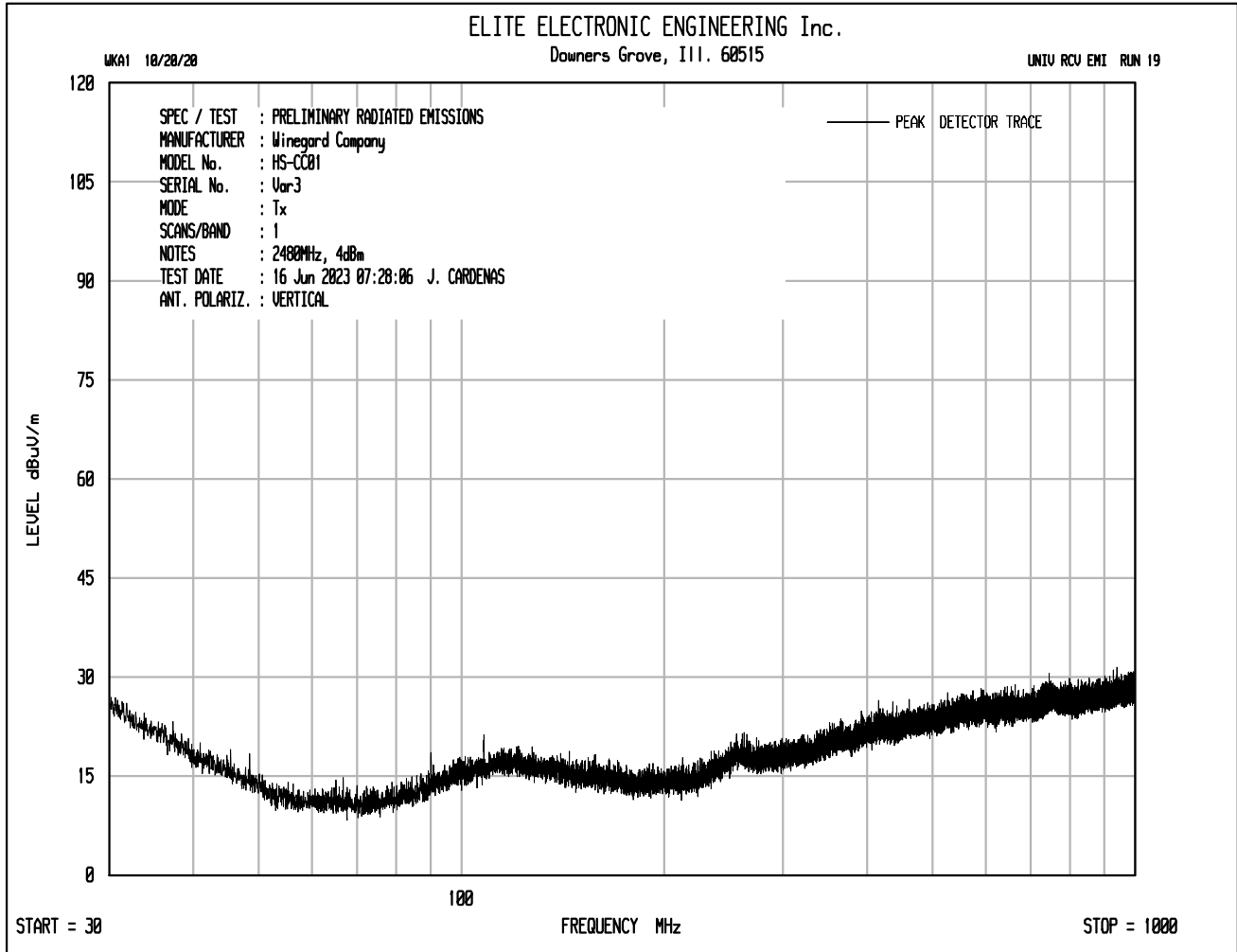


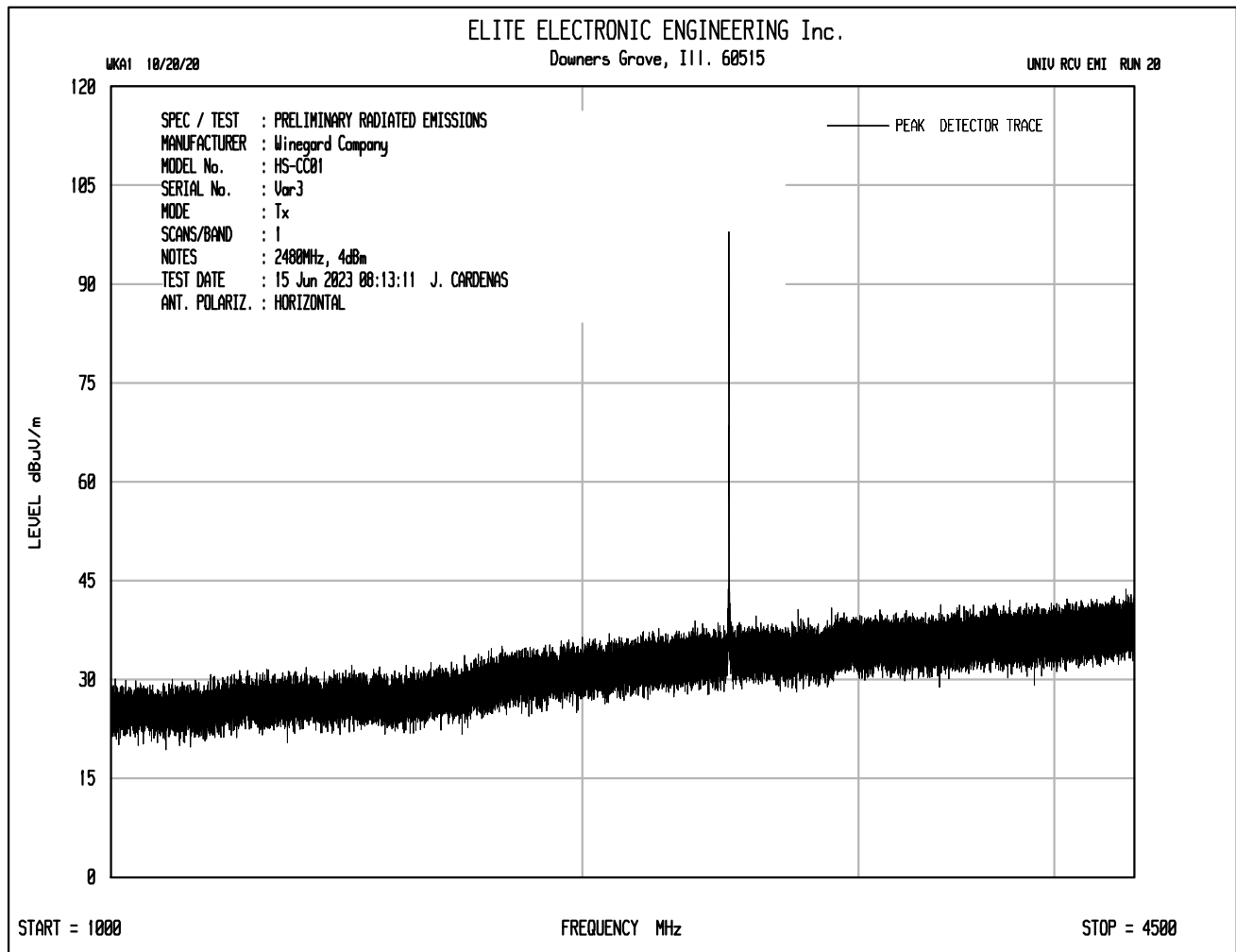


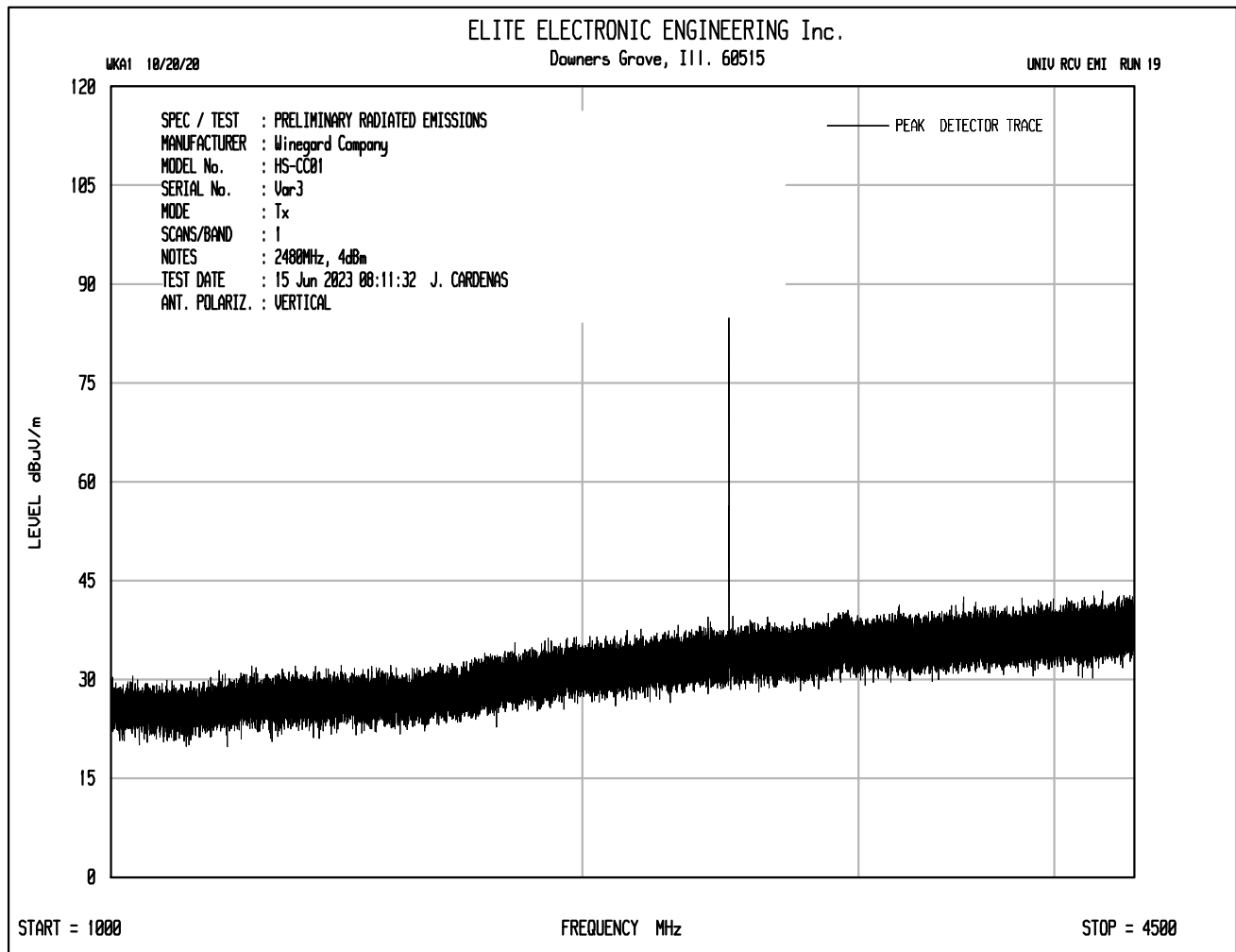


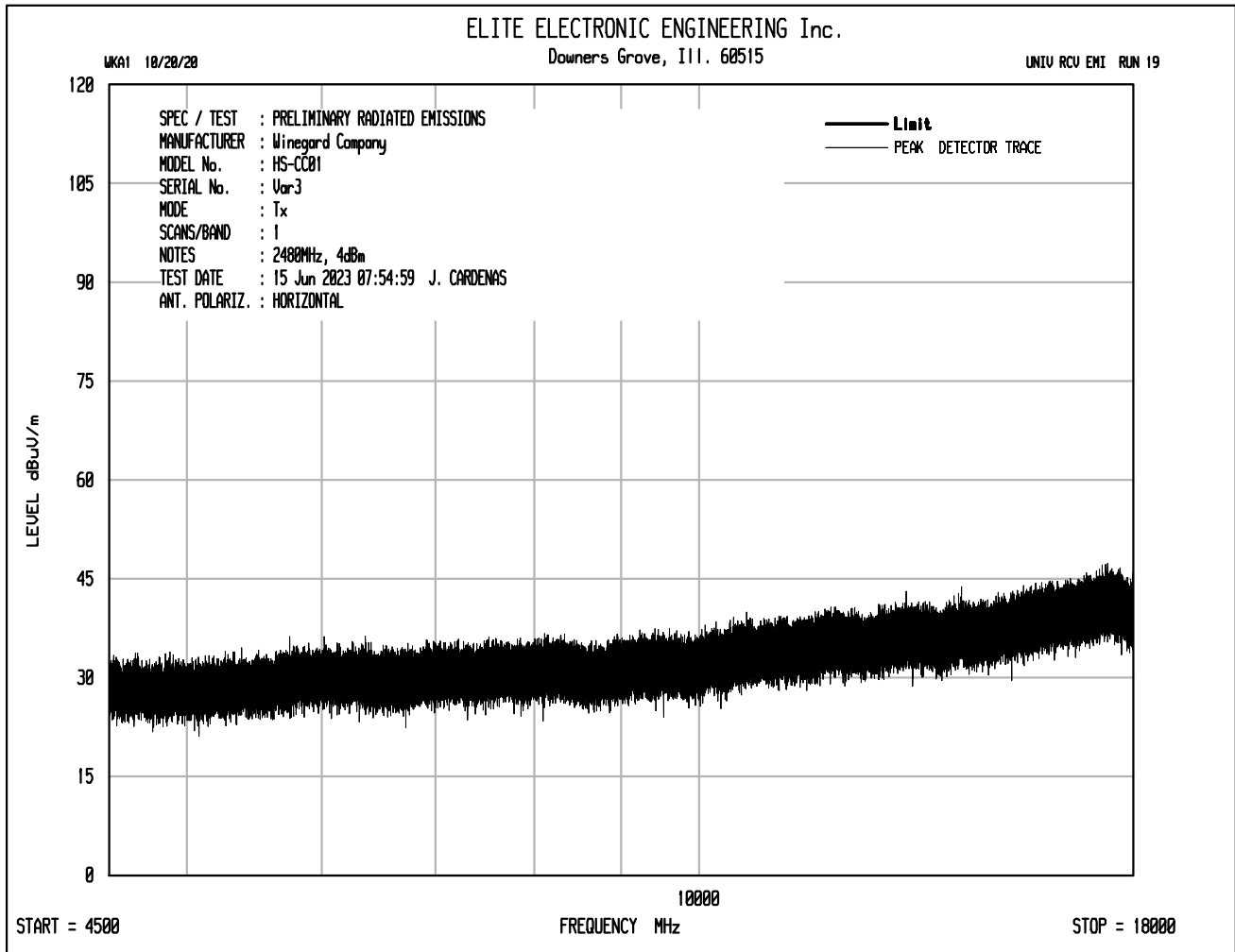


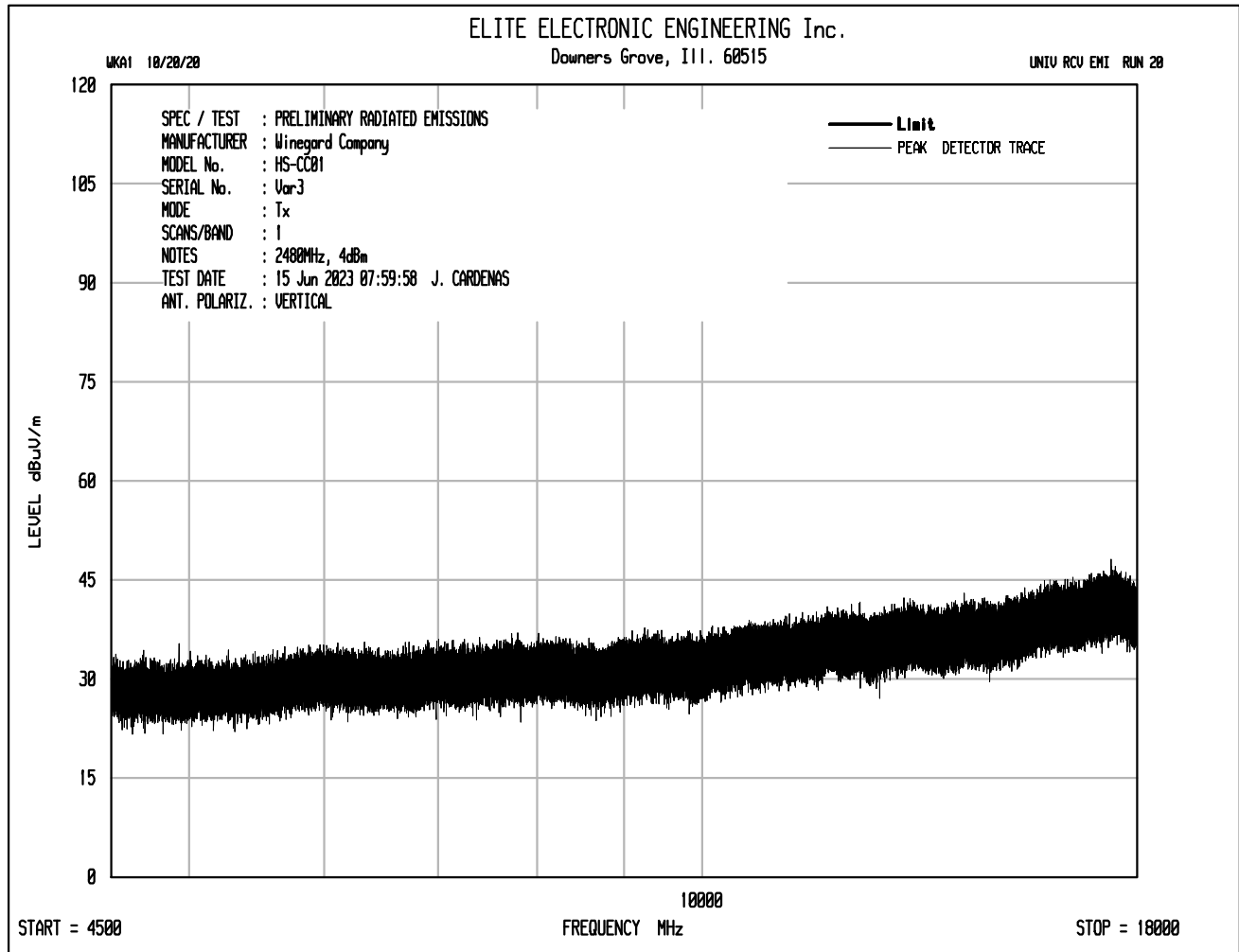












Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2402MHz
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4804.00	H	48.7	*	3.7	34.3	-39.7	47.0	224.1	5000.0	-27.0
	V	48.2	*	3.7	34.3	-39.7	46.5	210.4	5000.0	-27.5
12010.00	H	48.7	*	6.1	38.8	-39.0	54.6	535.6	5000.0	-19.4
	V	48.3	*	6.1	38.8	-39.0	54.2	511.4	5000.0	-19.8

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2402MHz
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4804.00	H	34.96	*	3.7	34.3	-39.7	0.0	33.2	45.9	500.0	-20.7
	V	34.48	*	3.7	34.3	-39.7	0.0	32.8	43.5	500.0	-21.2
12010.00	H	34.45	*	6.1	38.8	-39.0	0.0	40.4	104.2	500.0	-13.6
	V	34.88	*	6.1	38.8	-39.0	0.0	40.8	109.5	500.0	-13.2

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2402MHz
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2402.00	H	66.72		2.6	32.6	0.0	101.9	124538.5	NA	NA
	V	63.32		2.6	32.6	0.0	98.5	84198.4	NA	NA
7206.00	H	39.04		4.6	36.3	-39.7	40.3	103.6	12453.9	-41.6
	V	39.47		4.6	36.3	-39.7	40.7	108.9	12453.9	-41.2
9608.00	H	38.05		5.2	37.1	-39.3	41.1	113.0	12453.9	-40.8
	V	37.95		5.2	37.1	-39.3	41.0	111.7	12453.9	-40.9

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2440MHz
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4880.00	H	48.5	*	3.7	34.2	-39.6	46.8	217.6	5000.0	-27.2
	V	49.0	*	3.7	34.2	-39.6	47.3	232.3	5000.0	-26.7
7320.00	H	47.8	*	4.7	36.3	-39.6	49.1	284.5	5000.0	-24.9
	V	48.1	*	4.7	36.3	-39.6	49.4	295.2	5000.0	-24.6
12200.00	H	47.2	*	6.1	38.9	-38.9	53.3	461.7	5000.0	-20.7
	V	48.1	*	6.1	38.9	-38.9	54.2	510.3	5000.0	-19.8

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2440MHz
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4880.00	H	35.24	*	3.7	34.2	-39.6	0.0	33.5	47.4	500.0	-20.5
	V	34.87	*	3.7	34.2	-39.6	0.0	33.2	45.5	500.0	-20.8
7320.00	H	35.07	*	4.7	36.3	-39.6	0.0	36.4	66.1	500.0	-17.6
	V	35.02	*	4.7	36.3	-39.6	0.0	36.4	65.7	500.0	-17.6
12200.00	H	33.92	*	6.1	38.9	-38.9	0.0	40.0	99.6	500.0	-14.0
	V	34.03	*	6.1	38.9	-38.9	0.0	40.1	100.9	500.0	-13.9

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2440MHz
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2440.00	H	65.96		2.6	32.6	0.0	101.2	115146.5	NA	NA
	V	64.32		2.6	32.6	0.0	99.6	95334.6	NA	NA
9760.00	H	37.16		5.2	37.2	-39.3	40.3	104.1	11514.6	-40.9
	V	37.59		5.2	37.2	-39.3	40.8	109.4	11514.6	-40.4

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2480MHz
Notes	Peak Measurements in the Restricted Bands

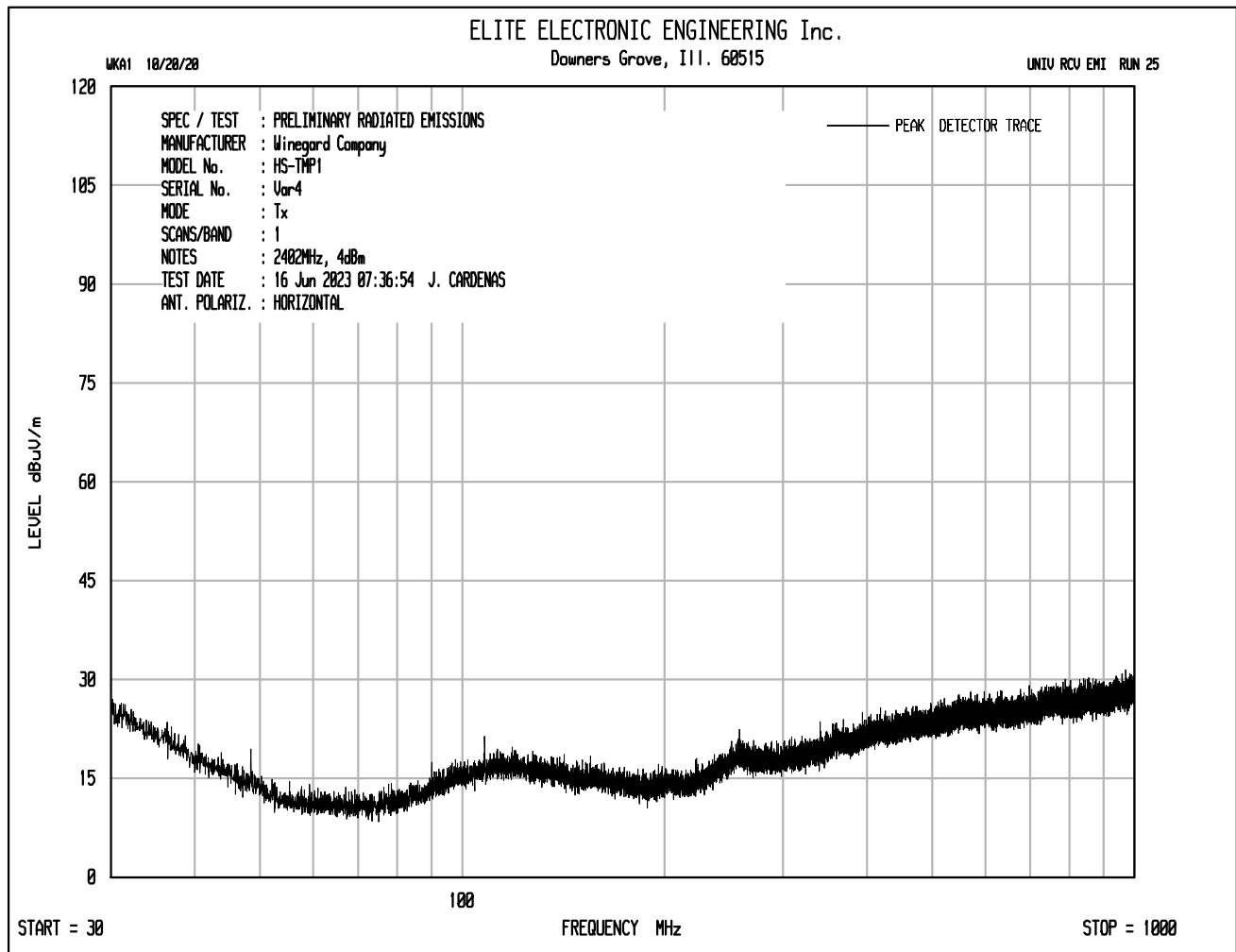
Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4960.00	H	48.7	*	3.7	34.1	-39.6	46.9	222.2	5000.0	-27.0
	V	48.7	*	3.7	34.1	-39.6	46.9	220.7	5000.0	-27.1
7440.00	H	48.4	*	4.7	36.3	-39.6	49.9	313.2	5000.0	-24.1
	V	49.1	*	4.7	36.3	-39.6	50.6	337.2	5000.0	-23.4
12400.00	H	47.8	*	6.1	38.9	-38.8	54.0	501.4	5000.0	-20.0
	V	47.4	*	6.1	38.9	-38.8	53.6	476.7	5000.0	-20.4

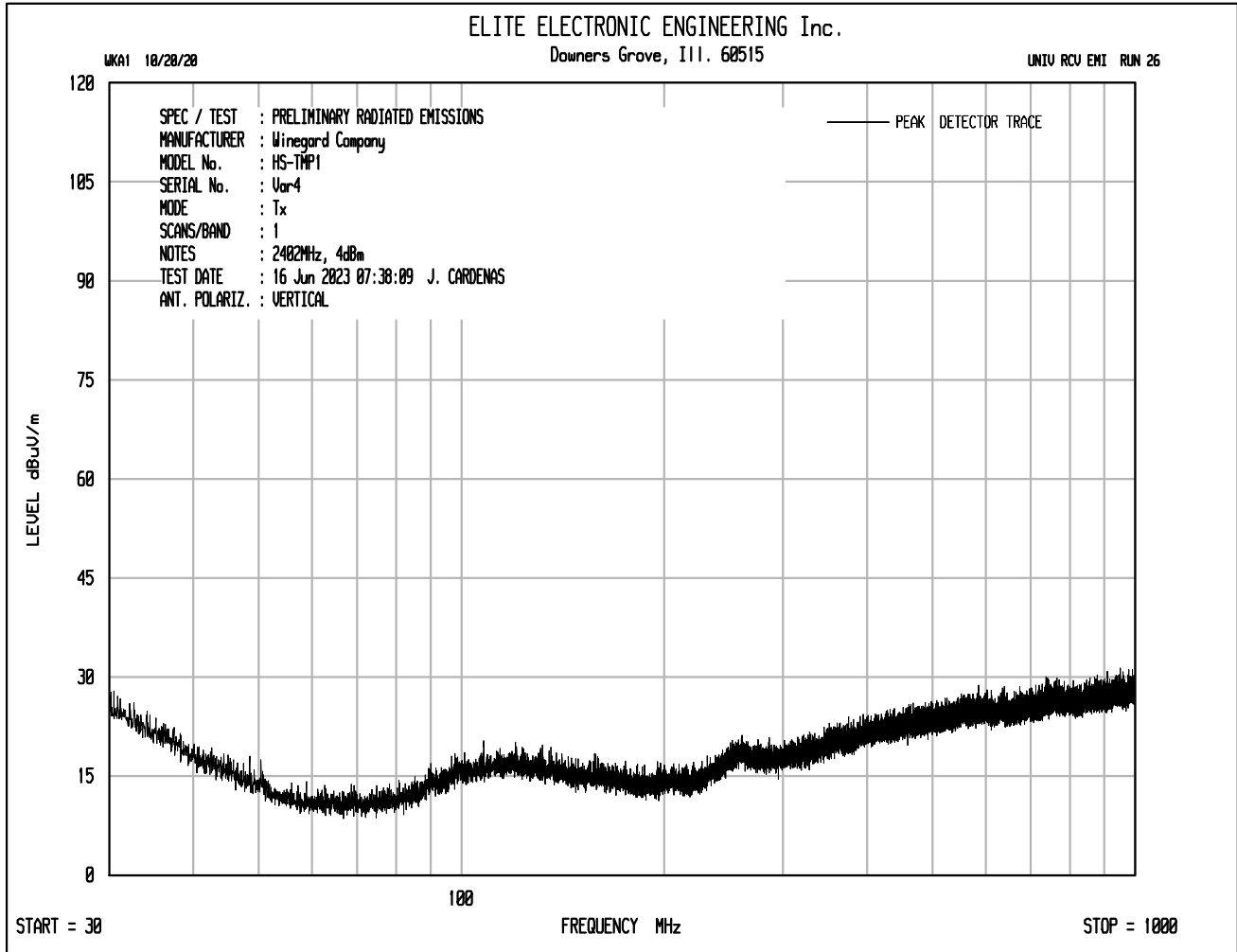
Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2480MHz
Notes	Average Measurements in the Restricted Bands

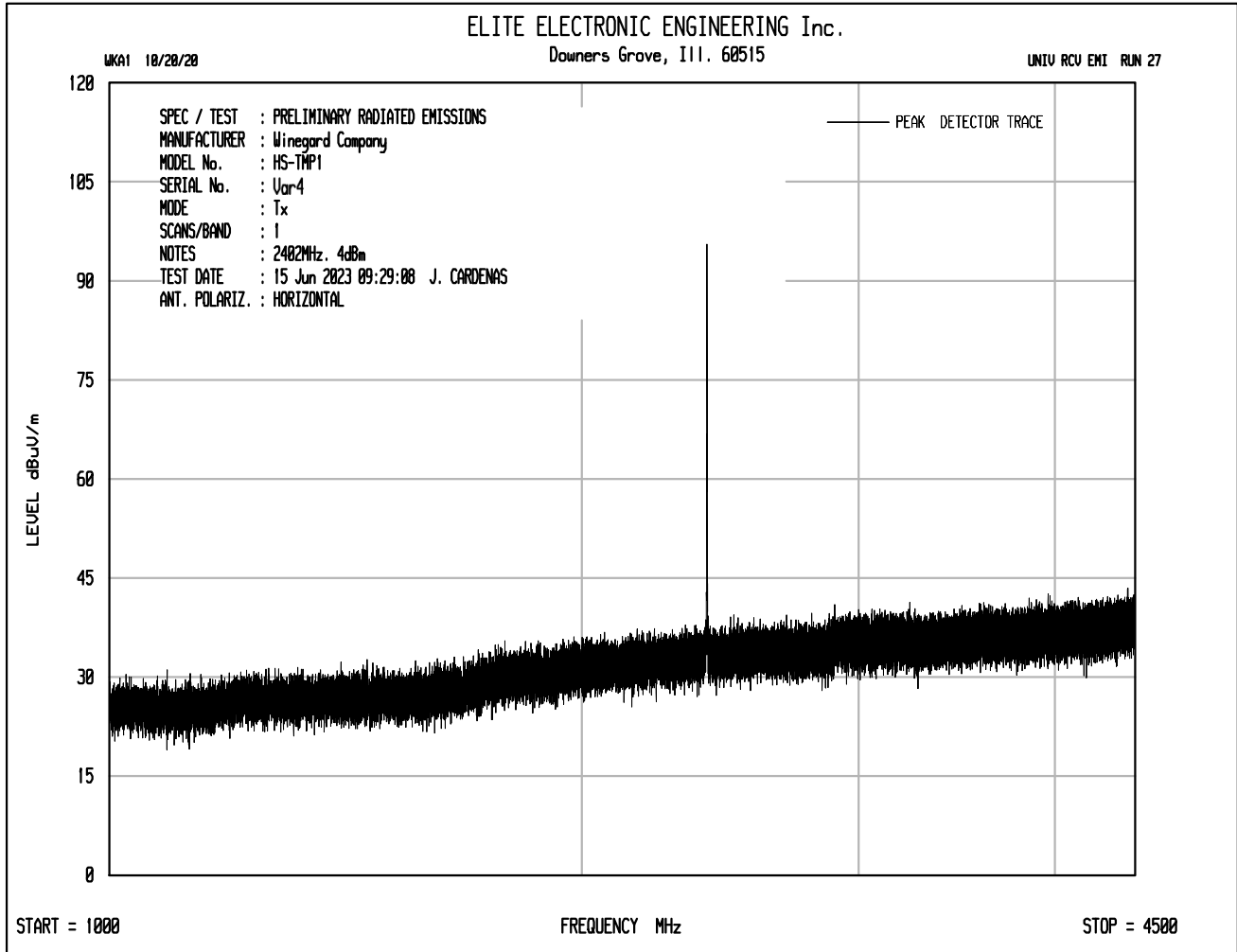
Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4960.00	H	34.87	*	3.7	34.1	-39.6	0.0	33.1	45.2	500.0	-20.9
	V	34.85	*	3.7	34.1	-39.6	0.0	33.1	45.1	500.0	-20.9
7440.00	H	34.58	*	4.7	36.3	-39.6	0.0	36.1	63.6	500.0	-17.9
	V	34.83	*	4.7	36.3	-39.6	0.0	36.3	65.4	500.0	-17.7
12400.00	H	33.91	*	6.1	38.9	-38.8	0.0	40.1	101.3	500.0	-13.9
	V	34.10	*	6.1	38.9	-38.8	0.0	40.3	103.6	500.0	-13.7

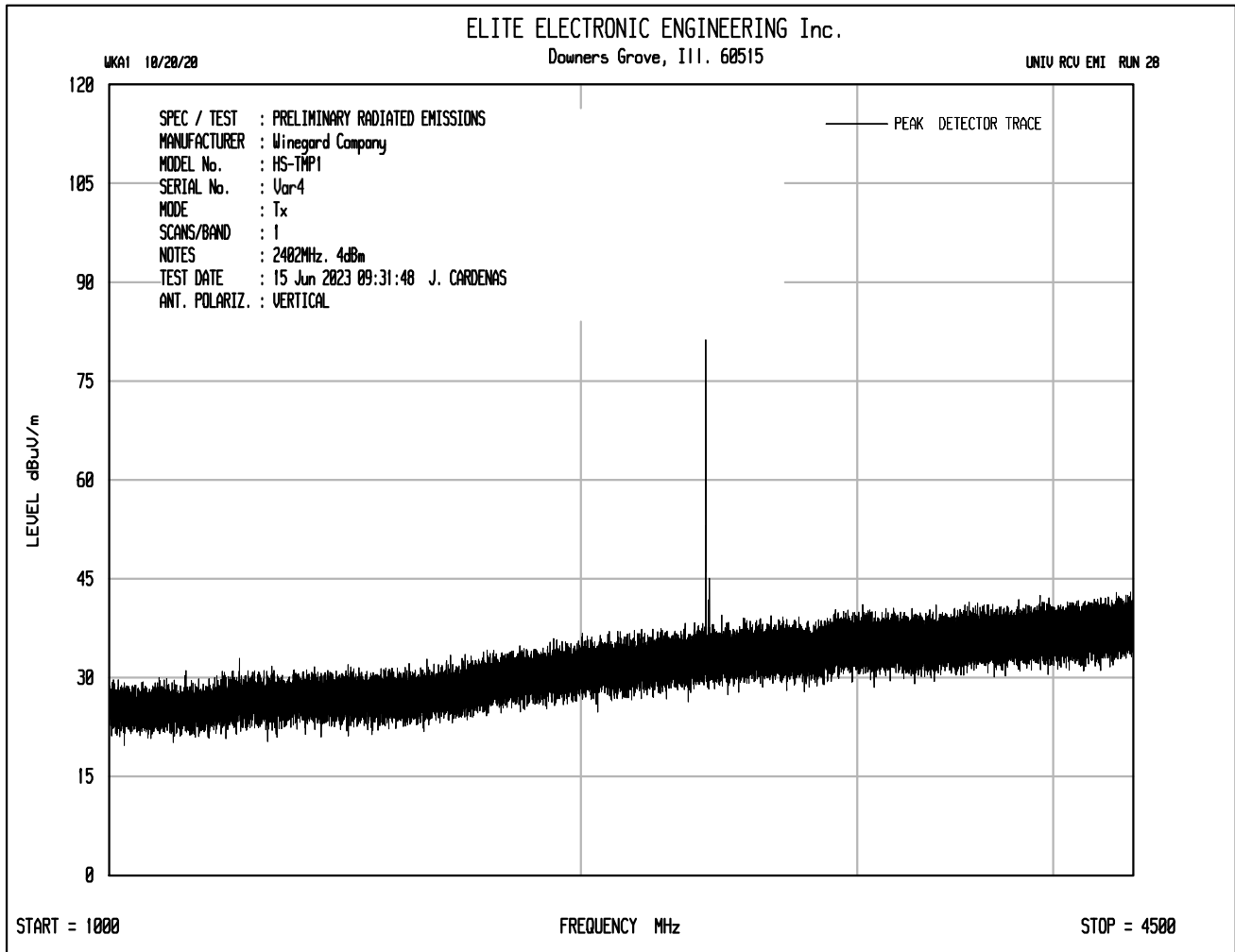
Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-CC01
Serial No.	Var3
Mode	Tx
Frequency Tested	2480MHz
Notes	Peak Measurements in Non-Restricted Bands

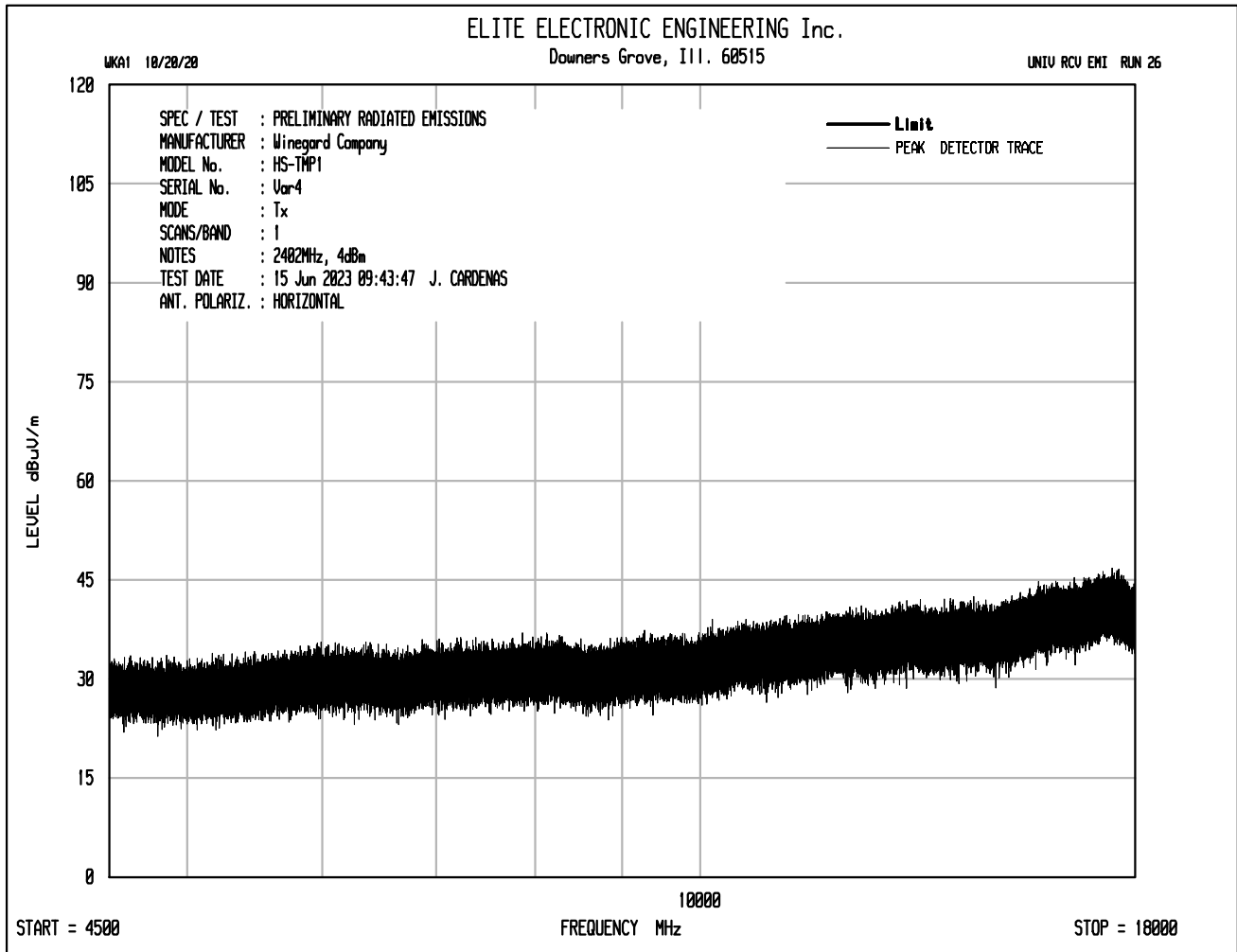
Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2480.00	H	64.95		2.7	32.7	0.0	100.3	103729.8	NA	NA
	V	63.24		2.7	32.7	0.0	98.6	85192.9	NA	NA
9920.00	H	38.19	*	5.3	37.2	-39.2	41.4	117.7	10373.0	-38.9
	V	38.74	*	5.3	37.2	-39.2	42.0	125.4	10373.0	-38.4

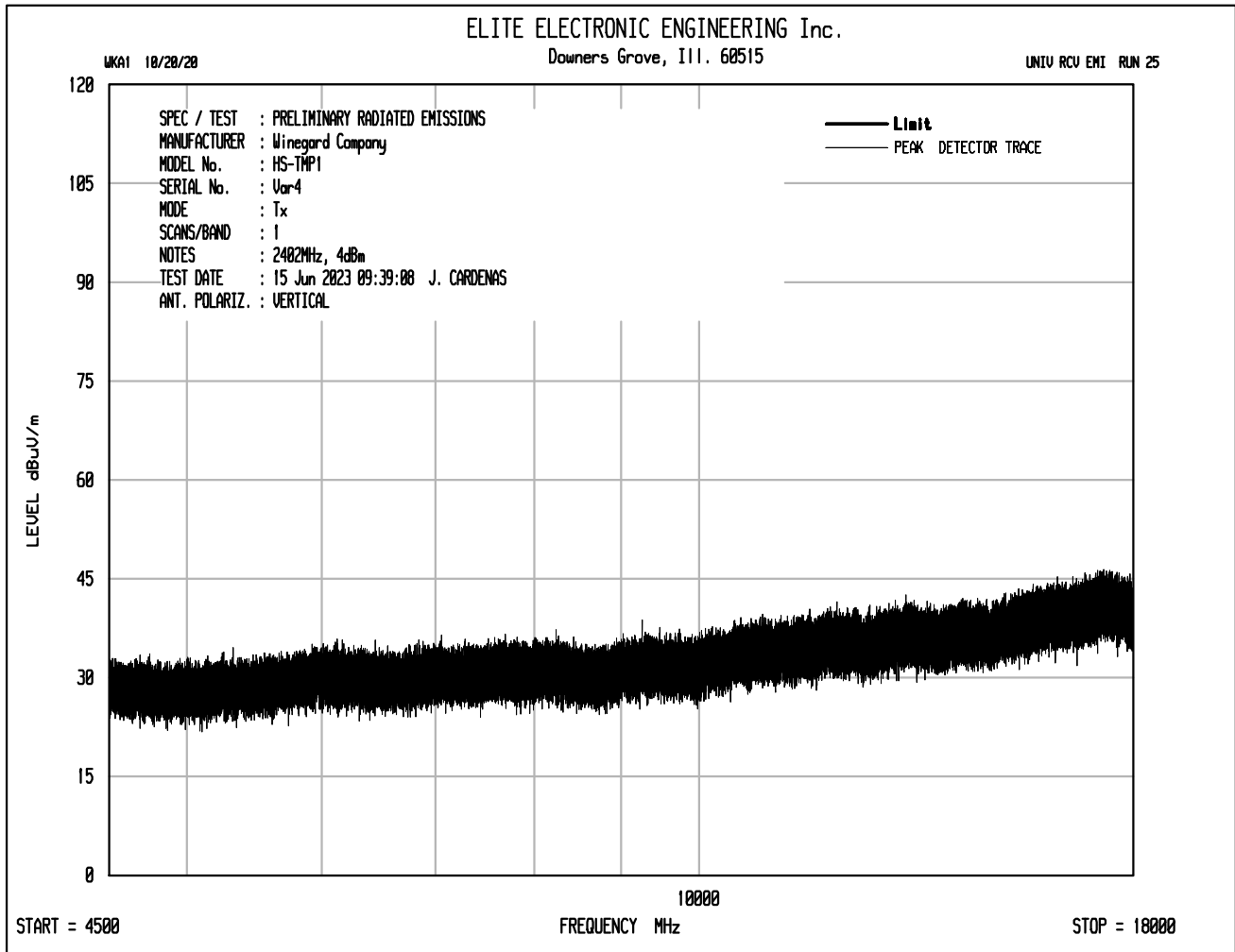


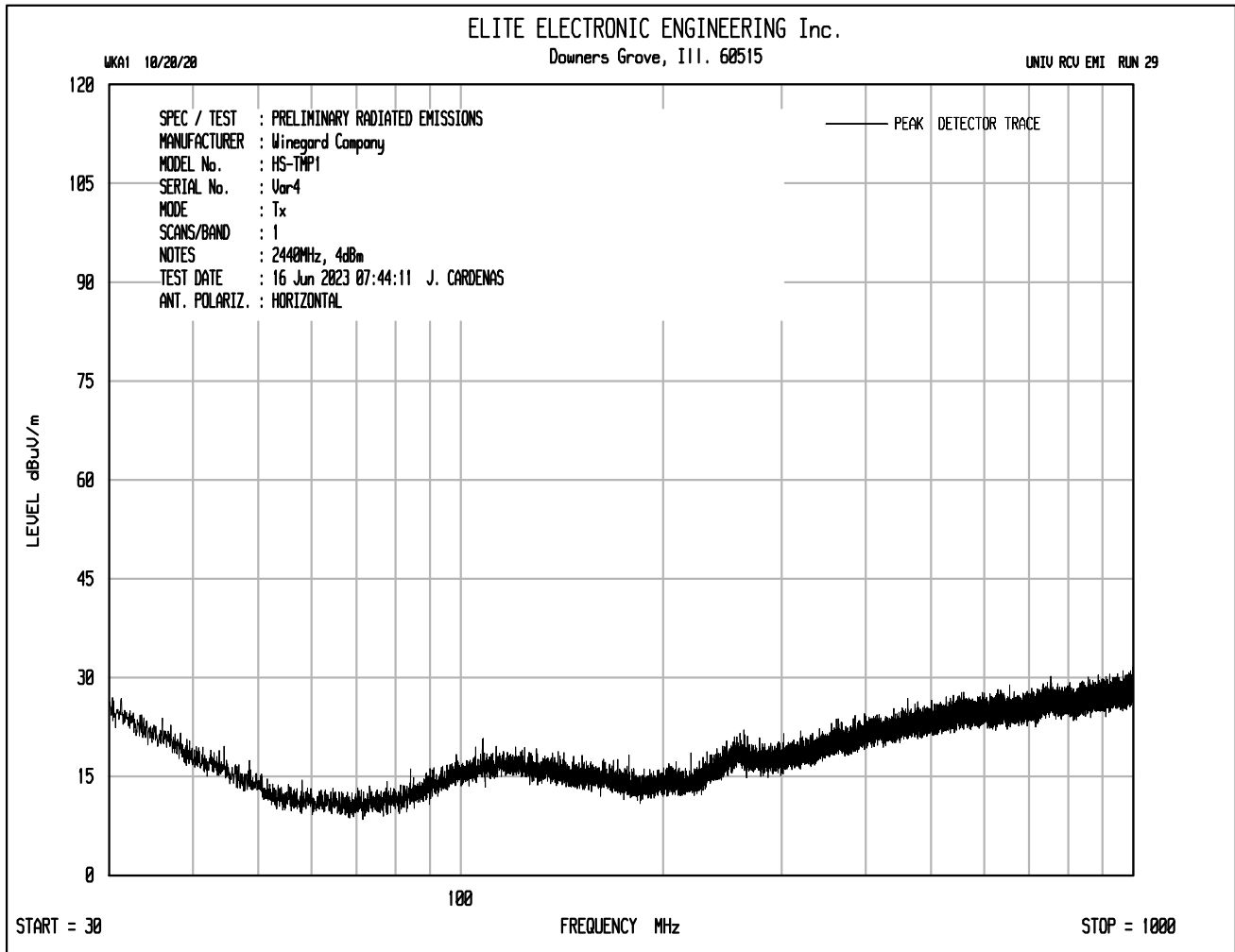


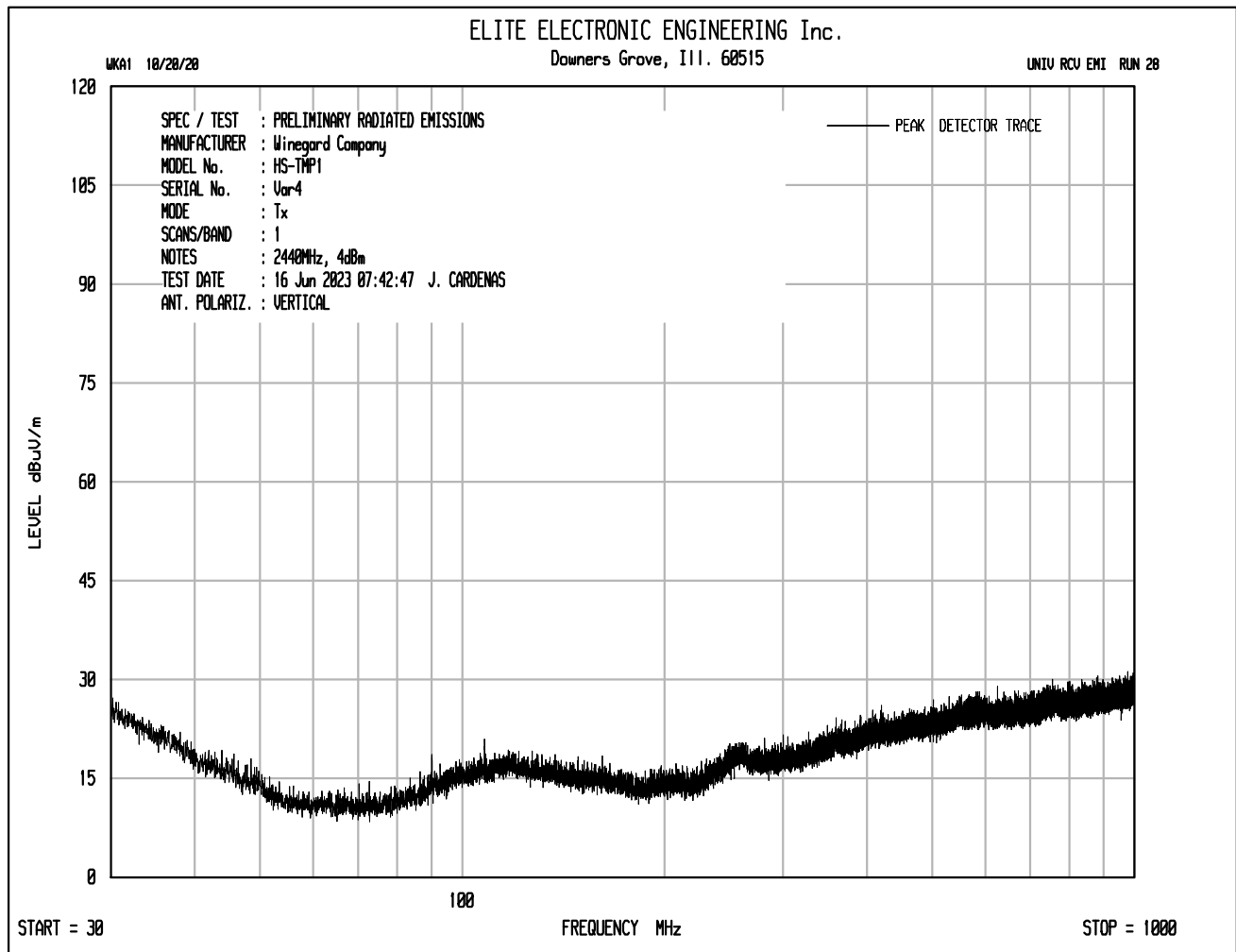


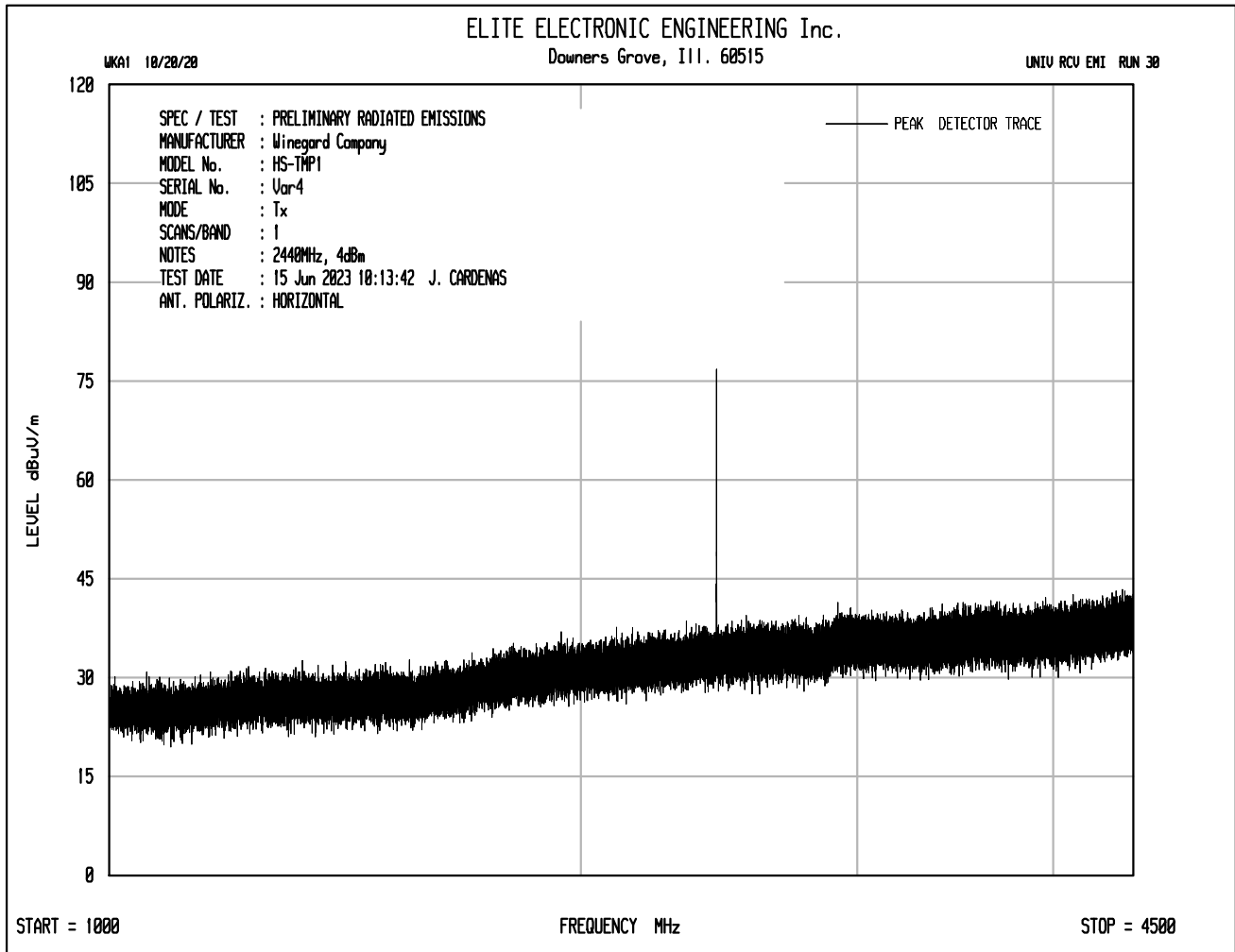


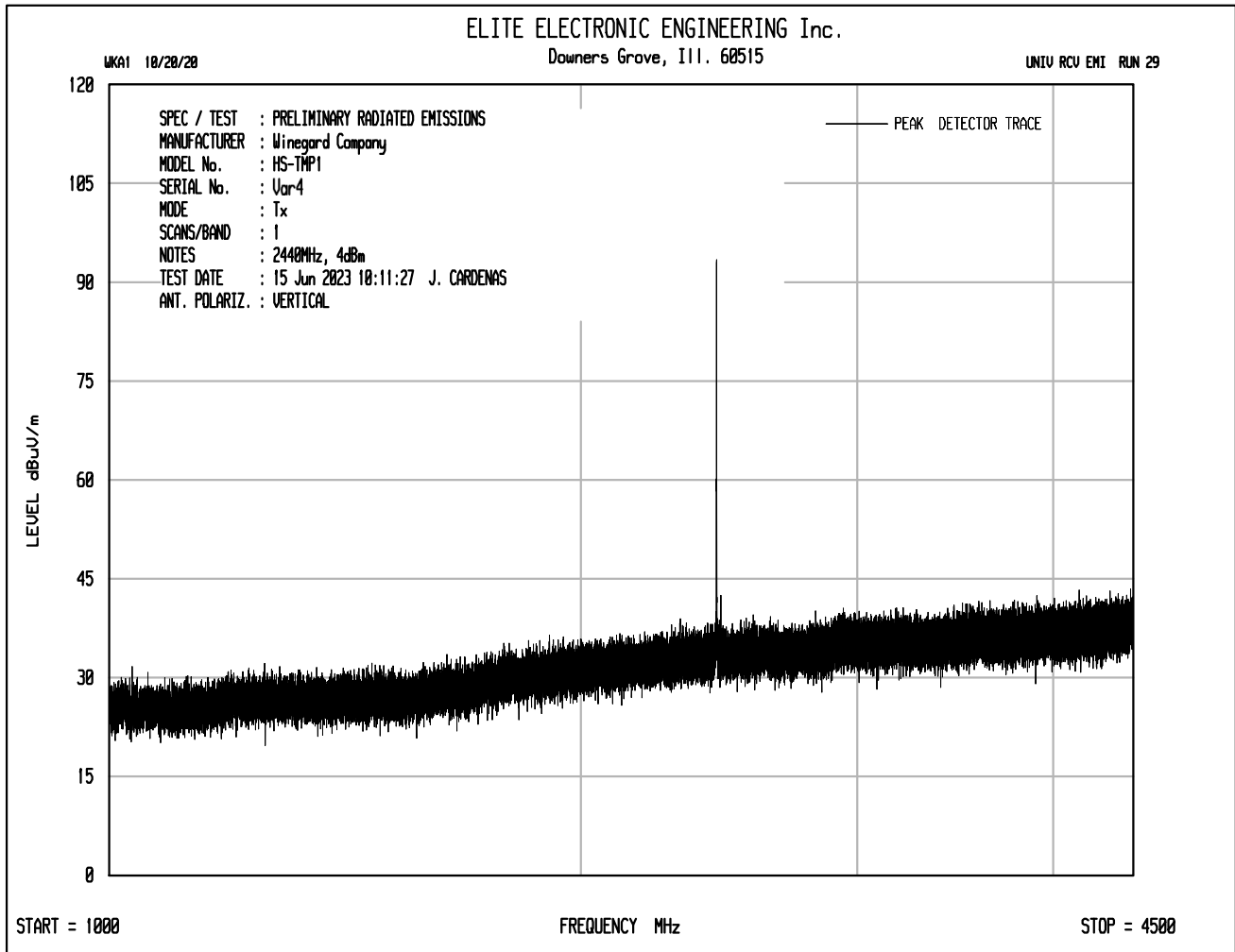


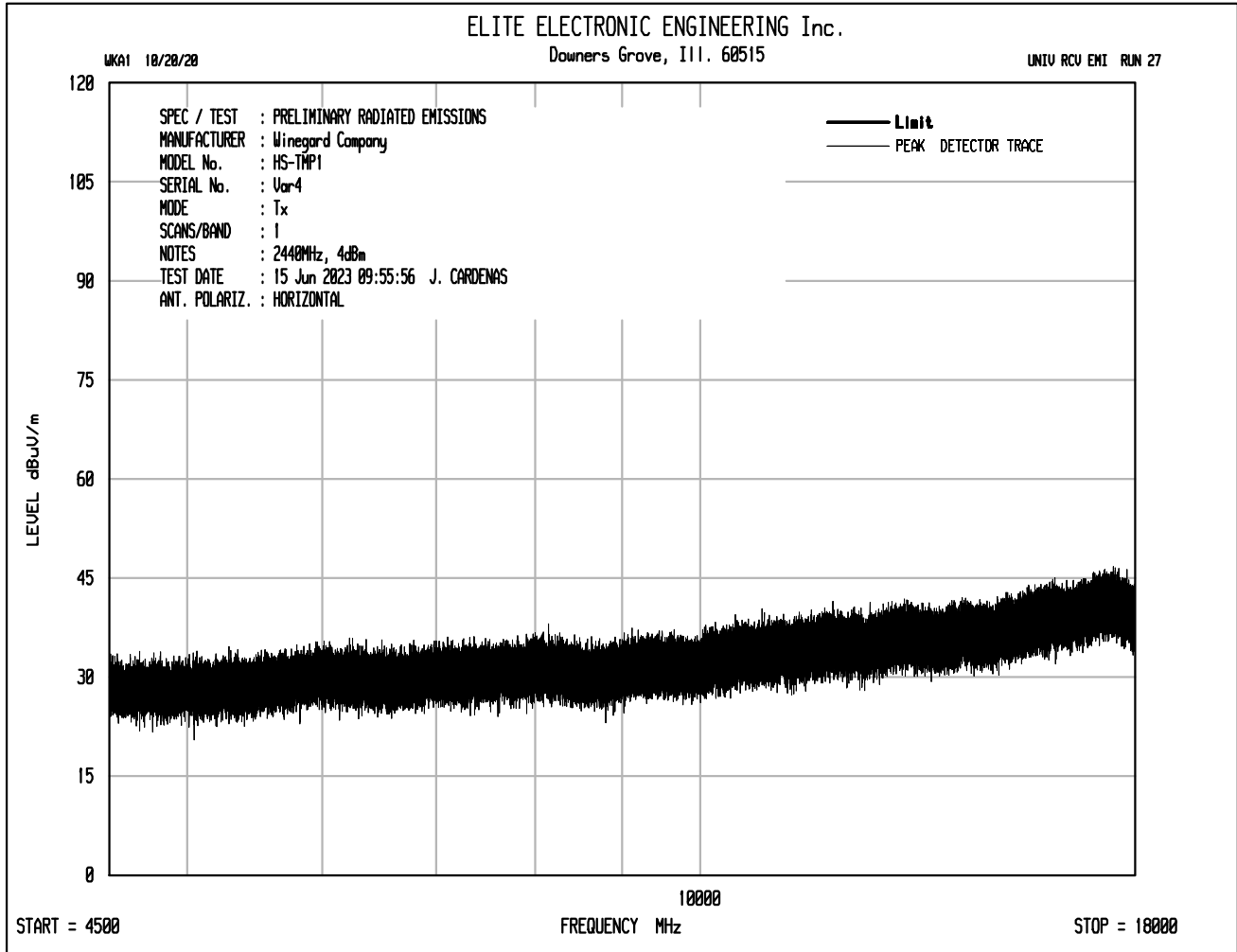


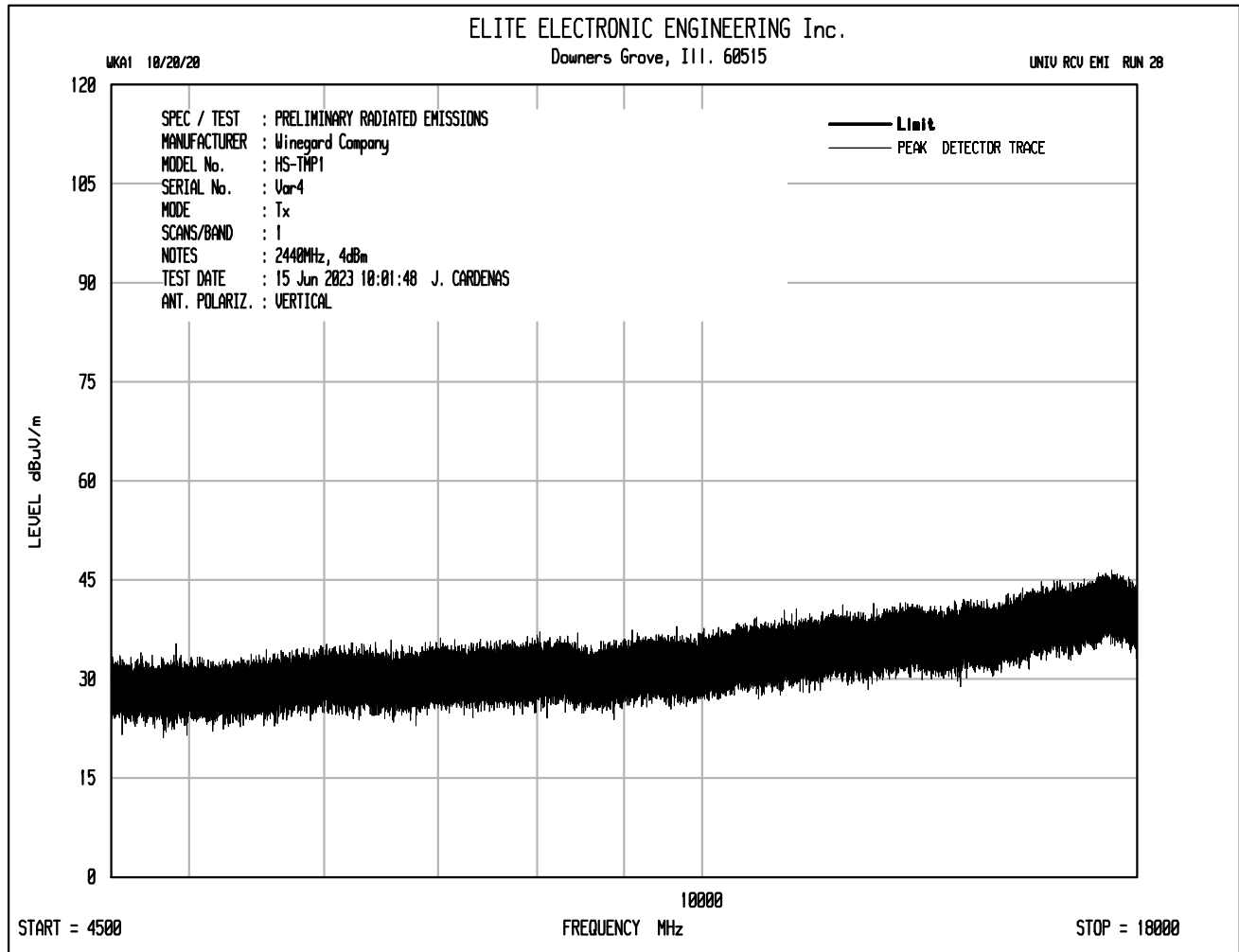


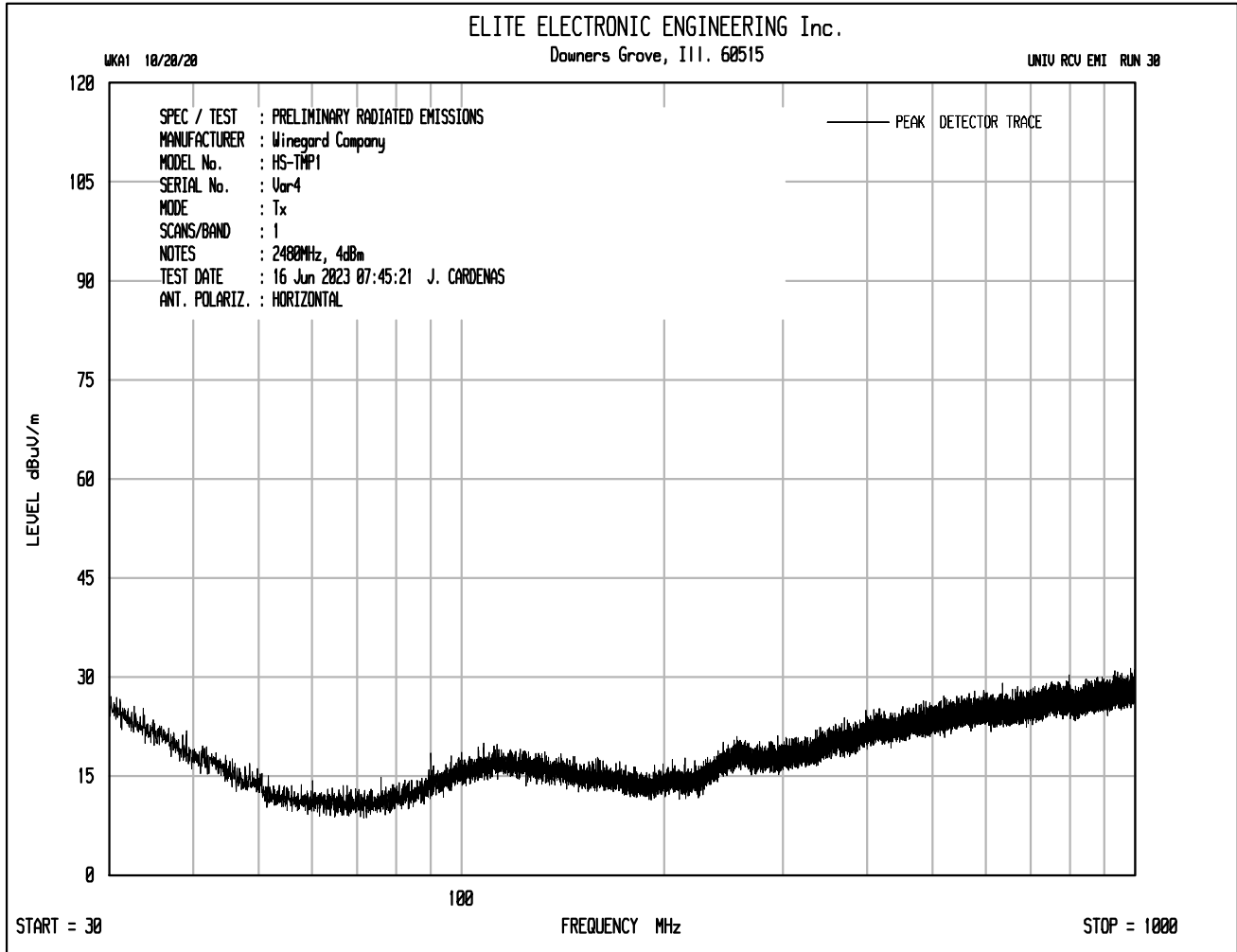


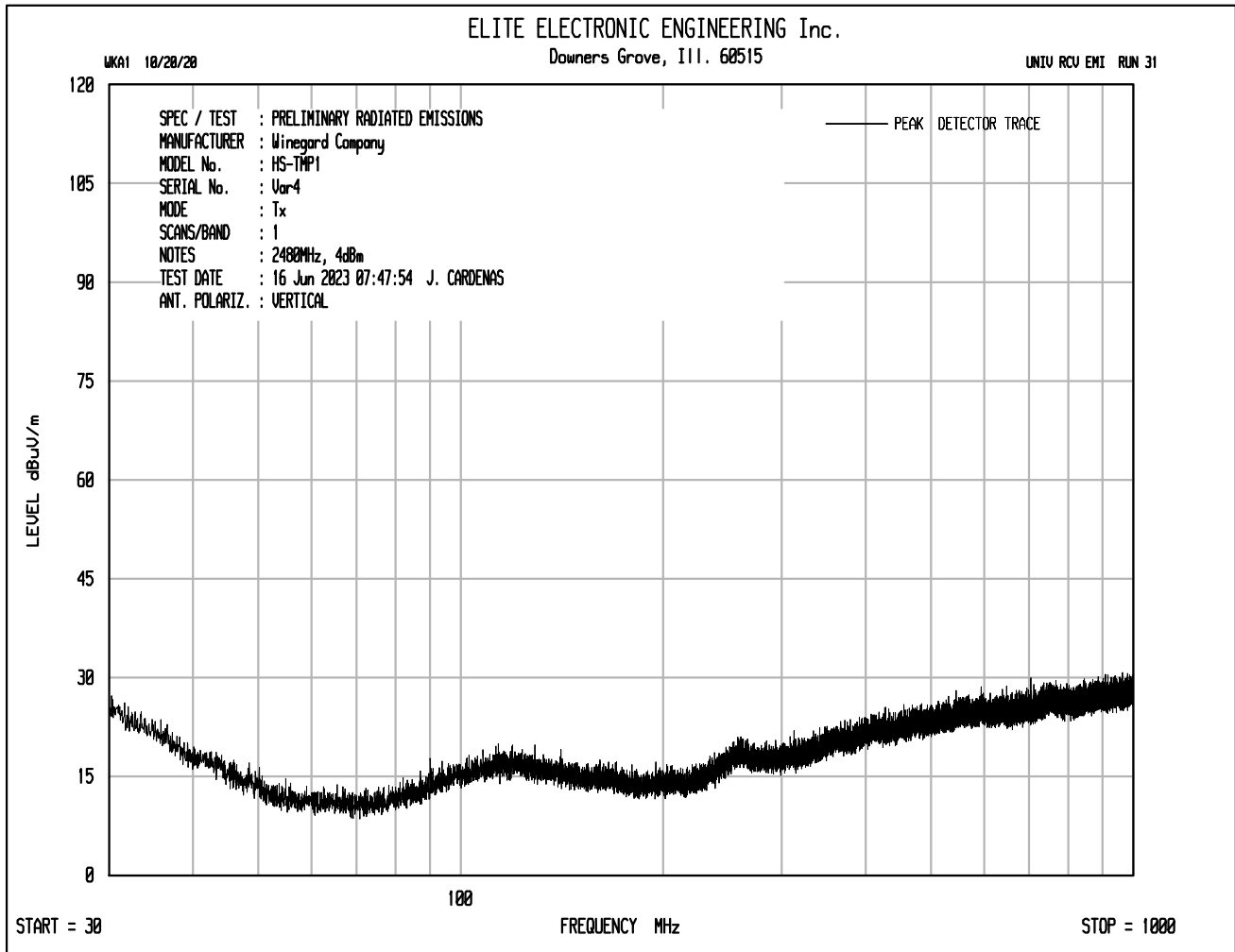


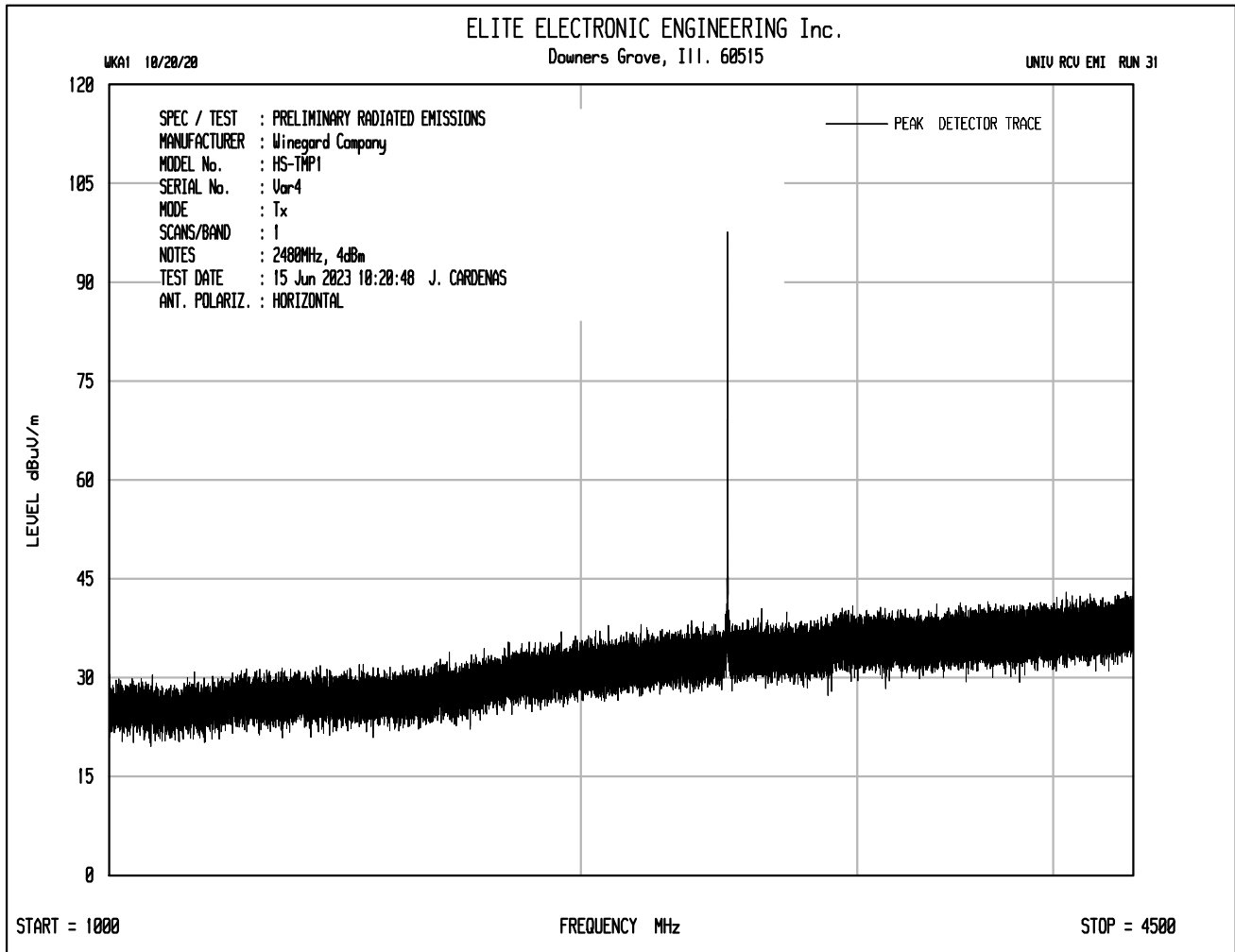


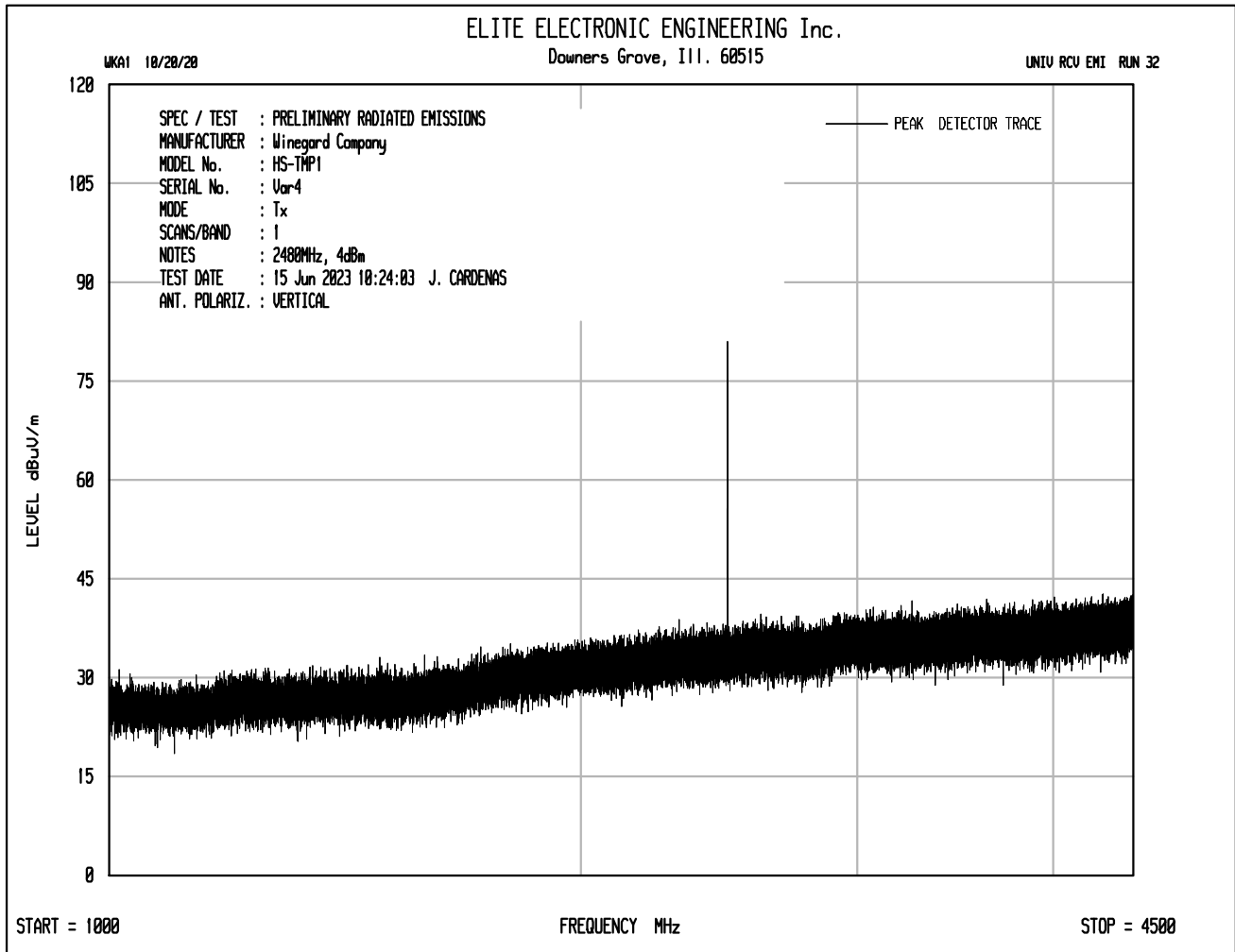


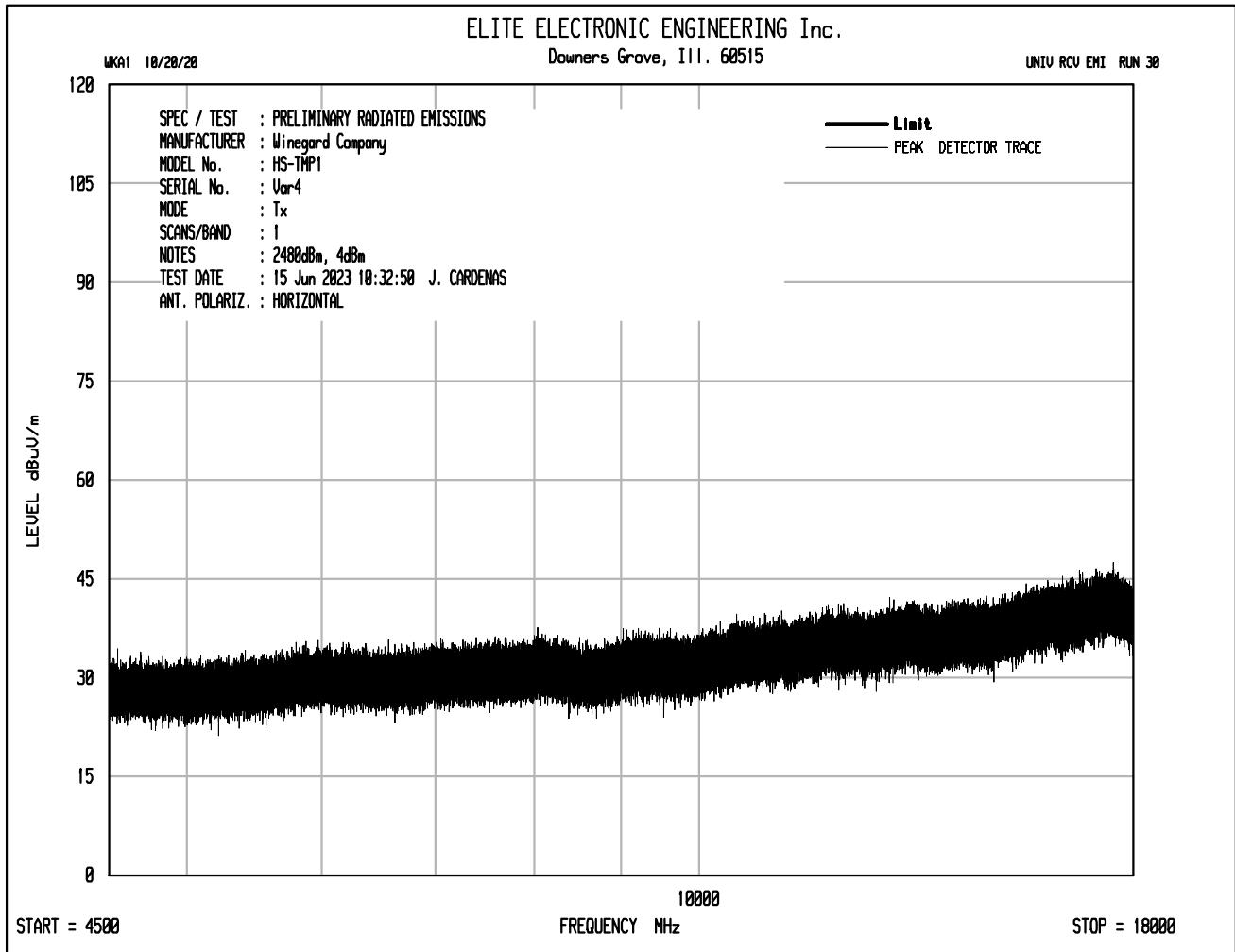


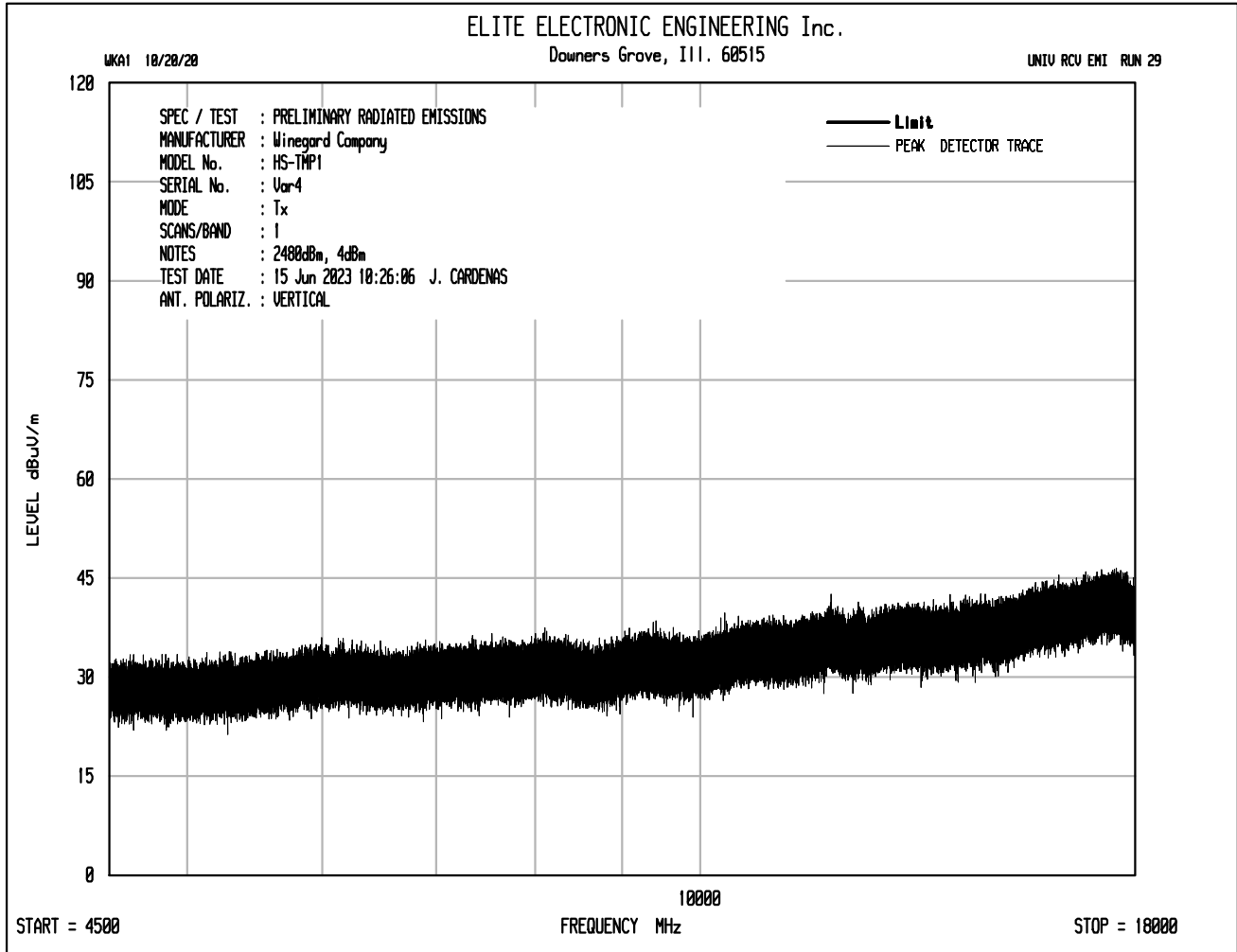












Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2402MHz
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4804.00	H	48.5	*	3.7	34.3	-39.7	46.8	219.0	5000.0	-27.2
	V	47.6	*	3.7	34.3	-39.7	45.9	197.5	5000.0	-28.1
12010.00	H	47.7	*	6.1	38.8	-39.0	53.6	480.6	5000.0	-20.3
	V	47.9	*	6.1	38.8	-39.0	53.8	491.2	5000.0	-20.2

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2402MHz
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4804.00	H	34.08	*	3.7	34.3	-39.7	0.0	32.4	41.5	500.0	-21.6
	V	34.11	*	3.7	34.3	-39.7	0.0	32.4	41.6	500.0	-21.6
12010.00	H	34.34	*	6.1	38.8	-39.0	0.0	40.2	102.9	500.0	-13.7
	V	34.24	*	6.1	38.8	-39.0	0.0	40.1	101.7	500.0	-13.8

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2402MHz
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2402.00	H	65.18		2.6	32.6	0.0	100.4	104304.7	NA	NA
	V	61.18		2.6	32.6	0.0	96.4	65811.8	NA	NA
7206.00	H	37.53		4.6	36.3	-39.7	38.8	87.1	10430.5	-41.6
	V	37.06		4.6	36.3	-39.7	38.3	82.5	10430.5	-42.0
9608.00	H	37.07		5.2	37.1	-39.3	40.1	100.9	10430.5	-40.3
	V	37.66		5.2	37.1	-39.3	40.7	108.0	10430.5	-39.7

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2440MHz
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4880.00	H	48.1	*	3.7	34.2	-39.6	46.4	209.2	5000.0	-27.6
	V	48.5	*	3.7	34.2	-39.6	46.7	217.1	5000.0	-27.2
7320.00	H	47.6	*	4.7	36.3	-39.6	48.9	278.4	5000.0	-25.1
	V	47.7	*	4.7	36.3	-39.6	49.1	284.2	5000.0	-24.9
12200.00	H	47.3	*	6.1	38.9	-38.9	53.4	467.0	5000.0	-20.6
	V	46.9	*	6.1	38.9	-38.9	53.0	444.5	5000.0	-21.0

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2440MHz
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4880.00	H	34.44	*	3.7	34.2	-39.6	0.0	32.7	43.3	500.0	-21.3
	V	34.46	*	3.7	34.2	-39.6	0.0	32.7	43.4	500.0	-21.2
7320.00	H	33.87	*	4.7	36.3	-39.6	0.0	35.2	57.6	500.0	-18.8
	V	34.83	*	4.7	36.3	-39.6	0.0	36.2	64.3	500.0	-17.8
12200.00	H	33.20	*	6.1	38.9	-38.9	0.0	39.2	91.7	500.0	-14.7
	V	33.12	*	6.1	38.9	-38.9	0.0	39.2	90.9	500.0	-14.8

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2440MHz
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2440.00	H	64.21		2.6	32.6	0.0	99.5	94134.9	NA	NA
	V	60.05		2.6	32.6	0.0	95.3	58311.0	NA	NA
9760.00	H	40.09		5.2	37.2	-39.3	43.3	145.8	9413.5	-36.2
	V	37.71		5.2	37.2	-39.3	40.9	110.9	9413.5	-38.6

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2480MHz
Notes	Peak Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
4960.00	H	47.3	*	3.7	34.1	-39.6	45.6	189.8	5000.0	-28.4
	V	48.7	*	3.7	34.1	-39.6	46.9	220.7	5000.0	-27.1
7440.00	H	48.1	*	4.7	36.3	-39.6	49.6	302.6	5000.0	-24.4
	V	18.3	*	4.7	36.3	-39.6	19.7	9.7	5000.0	-54.2
12400.00	H	48.2	*	6.1	38.9	-38.8	54.4	524.5	5000.0	-19.6
	V	48.3	*	6.1	38.9	-38.8	54.5	533.6	5000.0	-19.4

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2480MHz
Notes	Average Measurements in the Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	CBL Fac (dB)	Ant Fac (dB/m)	Pre Amp (dB)	Duty Cycle Factor (dB)	Average Total at 3m (dBμV/m)	Average Total at 3m (μV/m)	Average Limit at 3m (μV/m)	Margin (dB)
4960.00	H	34.13	*	3.7	34.1	-39.6	0.0	32.4	41.5	500.0	-21.6
	V	34.25	*	3.7	34.1	-39.6	0.0	32.5	42.1	500.0	-21.5
7440.00	H	33.96	*	4.7	36.3	-39.6	0.0	35.4	59.2	500.0	-18.5
	V	33.46	*	4.7	36.3	-39.6	0.0	34.9	55.9	500.0	-19.0
12400.00	H	33.47	*	6.1	38.9	-38.8	0.0	39.7	96.3	500.0	-14.3
	V	33.56	*	6.1	38.9	-38.8	0.0	39.8	97.3	500.0	-14.2

Test Details	
Manufacturer	Winegard Company
EUT	BLE Sensor
Model No.	HS-TMP1
Serial No.	Var4
Mode	Tx
Frequency Tested	2480MHz
Notes	Peak Measurements in Non-Restricted Bands

Freq (MHz)	Ant Pol	Meter Reading (dBμV)	Ambient	Cable Factor (dB)	Antenna Factor (dB/m)	Pre Amp (dB)	Peak Total at 3m (dBμV/m)	Peak Total at 3m (μV/m)	Peak Limit at 3m (μV/m)	Margin (dBm)
2480.00	H	64.37		2.7	32.7	0.0	99.7	97029.4	NA	NA
	V	64.20		2.7	32.7	0.0	99.6	95148.9	NA	NA
9920.00	H	37.76	*	5.3	37.2	-39.2	41.0	112.0	9702.9	-38.8
	V	36.97	*	5.3	37.2	-39.2	40.2	102.3	9702.9	-39.5

23. Scope of Accreditation

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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ELECTRICAL

Valid To: June 30, 2023

Certificate Number: 1786.01

In recognition of the successful completion of the A2LA Accreditation Program evaluation process, accreditation is granted to this laboratory to perform the following automotive electromagnetic compatibility and other electrical tests:

Test Technology:**Test Method(s) ¹:*****Transient Immunity***

ISO 7637-2 (including emissions); ISO 7637-3;
ISO 16750-2:2012, Sections 4.6.3 and 4.6.4;
CS-11979, Section 6.4; CS.00054, Section 5.9;
EMC-CS-2009.1 (CI220); FMC1278 (CI220, CI221, CI222);
GMW 3097, Section 3.5; SAE J1113-11; SAE J1113-12;
ECE Regulation 10.06 Annex 10

Electrostatic Discharge (ESD)

ISO 10605 (2001, 2008);
CS-11979 Section 7.0; CS.00054, Section 5.10;
EMC-CS-2009.1 (CI 280); FMC1278 (CI280); SAE J1113-13;
GMW 3097 Section 3.6

Conducted Emissions

CISPR 25 (2002, 2008), Sections 6.2 and 6.3;
CISPR 25 (2016), Sections 6.3 and 6.4;
CS-11979, Section 5.1; CS.00054, Sections 5.6.1 and 5.6.2;
GMW 3097, Section 3.3.2;
EMC-CS-2009.1 (CE 420); FMC1278 (CE420, CE421)

Radiated Emissions Anechoic

CISPR 25 (2002, 2008), Section 6.4;
CISPR 25 (2016), Section 6.5;
CS-11979, Section 5.3; CS.00054, Section 5.6.3;
GMW 3097, Section 3.3.1;
EMC-CS-2009.1 (RE 310); FMC1278 (RE310);

(A2LA Cert. No. 1786.01) Revised 08/08/2022



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5202 Presidents Court, Suite 220 | Frederick, MD 21703-8515 | Phone: 301 644 3248 | Fax: 240 454 9449 | www.A2LA.org

Test Technology:
Test Method(s) ¹:
Vehicle Radiated Emissions

CISPR 12; CISPR 36; ICES-002;
ECE Regulation 10.06 Annex 5

Bulk Current Injection (BCI)

ISO 11452-4; CS-11979, Section 6.1; CS.00054, Section 5.8.1;
GMW 3097, Section 3.4.1; SAE J1113-4;
EMC-CS-2009.1 (RI112); FMC1278 (RI112);
ECE Regulation 10.06 Annex 9

**Radiated Immunity Anechoic
(Including Radar Pulse)**

ISO 11452-2; ISO 11452-5;
CS-11979, Section 6.2; CS.00054, Section 5.8.2;
GMW 3097, Section 3.4.2;
EMC-CS-2009.1 (RI114); FMC1278 (RI114); SAE J1113-21;
ECE Regulation 10.06 Annex 9

Radiated Immunity Magnetic Field

ISO 11452-8

Radiated Immunity Reverb

ISO/IEC 61000-4-21; GMW 3097, Section 3.4.3;
EMC-CS-2009.1 (RI114); FMC1278 (RI114);
ISO 11452-11

**Radiated Immunity
(Portable Transmitters)**

ISO 11452-9;
EMC-CS-2009.1 (RI115); FMC1278 (RI115)

Vehicle Radiated Immunity (ALSE)

ISO 11451-2; ECE Regulation 10.06 Annex 6

**Vehicle Product Specific EMC
Standards**

EN 14982; EN ISO 13309; ISO 13766; EN 50498;
EC Regulation No. 2015/208; EN 55012

Electrical Loads

ISO 16750-2

Emissions

Radiated and Conducted
(3m Semi-anechoic chamber,
up to 40 GHz)

47 CFR, FCC Part 15 B (using ANSI C63.4:2014);
47 CFR, FCC Part 18 (using FCC MP-5:1986);
ICES-001; ICES-003; ICES-005;
IEC/CISPR 11, Ed. 4.1 (2004-06); AS/NZS CISPR 11 (2004);
IEC/CISPR 11 Ed 5 (2009-05) + A1 (2010);
KN 11 (2008-5) with RRL Notice No. 2008-3 (May 20, 2008);
CISPR 11; EN 55011; KS C 9811; CNS 13803 (1997, 2003);
CISPR 14-1; EN 55014-1; AS/NZS CISPR 14.1;
CISPR 16-2-1 (2008); CISPR 16-2-1; KS C 9814-1; KN 14-1;
IEC/CISPR 22 (1997);
EN 55022 (1998) + A1(2000);
EN 55022 (1998) + A1(2000) + A2(2003); EN 55022 (2006);
IEC/CISPR 22 (2008-09); AS/NZS CISPR 22 (2004);
AS/NZS CISPR 22, 3rd Edition (2006); KN 22 (up to 6 GHz);
CNS 13438 (up to 6 GHz); VCCI V-3 (up to 6 GHz);
CISPR 32; EN 55032; KS C 9832; KN 32;
ECE Regulation 10.06 Annex 7 (Broadband)
ECE Regulation 10.06 Annex 8 (Narrowband)
ECE Regulation 10.06 Annex 14 (Conducted)

Test Technology:
Test Method(s) ¹:
Emissions (cont'd)

Cellular Radiated Spurious Emissions

ETSI TS 151 010-1 GSM; 3GPP TS 51.010-1, Sec 12;
ETSI TS 134 124 UMTS; 3GPP TS 34.124;
ETSI TS 136 124 LTE; E-UTRA; 3GPP TS 36.124

Current Harmonics

IEC 61000-3-2; EN 61000-3-2; KN 61000-3-2;
KS C 9610-3-2; ECE Regulation 10.06 Annex 11

Flicker and Fluctuations

IEC 61000-3-3; EN 61000-3-3; KN 61000-3-3;
KS C 9610-3-3; ECE Regulation 10.06 Annex 12

Immunity

Electrostatic Discharge

IEC 61000-4-2, Ed. 1.2 (2001);
IEC 61000-4-2 (1995) + A1(1998) + A2(2000);
EN 61000-4-2 (1995); EN 61000-4-2 (2009-05);
KN 61000-4-2 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-2; EN 61000-4-2; KN 61000-4-2;
KS C 9610-4-2; IEEE C37.90.3 2001

Radiated Immunity

IEC 61000-4-3 (1995) + A1(1998) + A2(2000);
IEC 61000-4-3, Ed. 3.0 (2006-02);
IEC 61000-4-3, Ed. 3.2 (2010);
KN 61000-4-3 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-3; EN 61000-4-3; KN 61000-4-3;
KS C 9610-4-3; IEEE C37.90.2 2004

Electrical Fast Transient/Burst

IEC 61000-4-4, Ed. 2.0 (2004-07);
IEC 61000-4-4, Ed. 2.1 (2011);
IEC 61000-4-4 (1995) + A1(2000) + A2(2001);
KN 61000-4-4 (2008-5);
RRL Notice No. 2008-5 (May 20, 2008);
IEC 61000-4-4; EN 61000-4-4; KN 61000-4-4;
KS C 9610-4-4; ECE Regulation 10.06 Annex 15

Surge

IEC 61000-4-5 (1995) + A1(2000);
IEC 61000-4-5, Ed 1.1 (2005-11);
EN 61000-4-5 (1995) + A1(2001);
KN 61000-4-5 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-5; EN 61000-4-5; KN 61000-4-5;
KS C 9610-4-5;
IEEE C37.90.1 2012; IEEE STD C62.41.2 2002;
ECE Regulation 10.06 Annex 16

Test Technology:
Test Method(s) ¹:
Immunity (cont'd)

Conducted Immunity

IEC 61000-4-6 (1996) + A1(2000);
IEC 61000-4-6, Ed 2.0 (2006-05);
IEC 61000-4-6 Ed. 3.0 (2008);
KN 61000-4-6 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
EN 61000-4-6 (1996) + A1(2001); IEC 61000-4-6;
EN 61000-4-6; KN 61000-4-6; KS C 9610-4-6

Power Frequency Magnetic Field
Immunity (*Down to 3 A/m*)

IEC 61000-4-8 (1993) + A1(2000); IEC 61000-4-8 (2009);
EN 61000-4-8 (1994) + A1(2000);
KN 61000-4-8 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-8; EN 61000-4-8; KN 61000-4-8; KS C 9610-4-8

Voltage Dips, Short Interrupts, and Line
Voltage Variations

IEC 61000-4-11, Ed. 2 (2004-03);
KN 61000-4-11 (2008-5);
RRL Notice No. 2008-4 (May 20, 2008);
IEC 61000-4-11; EN 61000-4-11; KN 61000-4-11;
KS C 9610-4-11

Ring Wave

IEC 61000-4-12, Ed. 2 (2006-09);
EN 61000-4-12:2006;
IEC 61000-4-12; EN 61000-4-12; KN 61000-4-12;
IEEE STD C62.41.2 2002

Generic and Product Specific EMC
Standards

IEC/EN 61000-6-1; AS/NZS 61000-6-1; KN 61000-6-1;
KS C 9610-6-1; IEC/EN 61000-6-2; AS/NZS 61000-6-2;
KN 61000-6-2; KS C 9610-6-2; IEC/EN 61000-6-3;
AS/NZS 61000-6-3; KN 61000-6-3; KS C 9610-6-3;
IEC/EN 61000-6-4; AS/NZS 61000-6-4; KN 61000-6-4;
KS C 9610-6-4; EN 50130-4; EN 61326-1; EN 50121-3-2;
EN 12895; EN 50270; EN 50491-1; EN 50491-2; EN 50491-3;
EN 55015; EN 60730-1; EN 60945; IEC 60533;
EN 61326-2-6; EN 61800-3; IEC/CISPR 14-2; EN 55014-2;
AS/NZS CISPR 14.2; KN 14-2; KS C 9814-2;
IEC/CISPR 24; AS/NZS CISPR 24; EN 55024; KN 24;
IEC/CISPR 35; AS/NZS CISPR 35; EN 55035; KN 35;
KS C 9835; IEC 60601-1-2; JIS T0601-1-2

TxRx EMC Requirements

EN 301 489-1; EN 301 489-3; EN 301 489-9;
EN 301 489-17; EN 301 489-19; EN 301 489-20

Test Technology:
Test Method(s) ¹:
European Radio Test Standards

ETSI EN 300 086-1; ETSI EN 300 086-2;
ETSI EN 300 113-1; ETSI EN 300 113-2;
ETSI EN 300 220-1; ETSI EN 300 220-2;
ETSI EN 300 220-3-1; ETSI EN 300 220-3-2;
ETSI EN 300 330-1; ETSI EN 300 330-2;
ETSI EN 300 440-1; ETSI EN 300 440-2;
ETSI EN 300 422-1; ETSI EN 300 422-2;
ETSI EN 300 328; ETSI EN 301 893;
ETSI EN 301 511; ETSI EN 301 908-1;
ETSI EN 908-2; ETSI EN 908-13;
ETSI EN 303 413; ETSI EN 302 502;
EN 303 340; EN 303 345-2; EN 303 345-3; EN 303 345-4

Canadian Radio Tests

RSS-102 (RF Exposure Evaluation ^{MEAS});
RSS-102 (Nerve Stimulation ^{MEAS}) (5Hz to 400kHz);
SPR-002; RSS-111; RSS-112; RSS-117; RSS-119; RSS-123;
RSS-125; RSS-127; RSS-130; RSS-131; RSS-132; RSS-133;
RSS-134; RSS-135; RSS-137; RSS-139; RSS-140; RSS-141;
RSS-142; RSS-170; RSS-181; RSS-182; RSS-191; RSS-192;
RSS-194; RSS-195; RSS-196; RSS-197; RSS-199; RSS-210;
RSS-211; RSS-213; RSS-215; RSS-216; RSS-220; RSS-222;
RSS-236; RSS-238; RSS-243; RSS-244; RSS-247; RSS-248;
RSS-251; RSS-252; RSS-287; RSS-288; RSS-310; RSS-GEN

Mexico Radio Tests

IFT-008-2015; NOM-208-SCFI-2016

Japan Radio Tests

Radio Law No. 131, Ordinance of MPT No. 37, 1981,
MIC Notification No. 88:2004, Table No. 22-11;
ARIB STD-T66, Regulation 18

Taiwan Radio Tests

LP-0002 (July 15, 2020)

Australia/New Zealand Radio Tests

AS/NZS 4268; Radiocommunications (Short Range Devices)
Standard (2014)

Hong Kong Radio Tests

HKCA 1039 Issue 6; HKCA 1042; HKCA 1033 Issue 7;
HKCA 1061; HKCA 1008; HKCA 1043; HKCA 1057;
HKCA 1073

Korean Radio Test Standards

KN 301 489-1; KN 301 489-3; KN 301 489-9;
KN 301 489-17; KN 301 489-52; KS X 3124; KS X 3125;
KS X 3130; KS X 3126; KS X 3129

Vietnam Radio Test Standards

QCVN 47:2015/BTTTT; QCVN 54:2020/BTTTT;
QCVN 55:2011/BTTTT; QCVN 65:2013/BTTTT;
QCVN 73:2013/BTTTT; QCVN 74:2020/BTTTT;
QCVN 112:2017/BTTTT; QCVN 117:2020/BTTTT

Vietnam EMC Test Standards

QCVN 18:2014/BTTTT; QCVN 86:2019/BTTTT;
QCVN 96:2015/BTTTT; QCVN 118:2018/BTTTT

Test Technology:

Unlicensed Radio Frequency Devices
(3 Meter Semi-Anechoic Room)

Licensed Radio Service Equipment

OTA (Over the Air) Performance

GSM, GPRS, EGPRS
UMTS (W-CDMA)
LTE including CAT M1
A-GPS for UMTS/GSM
LTS A-GPS, A-GLONASS,
SIB8/SIB16
Large Device/Laptop/Tablet Testing
Integrated Device Testing
WiFi 802.11 a/b/g/n/a

Electrical Measurements and Simulation
AC Voltage / Current

(1mV to 5kV) 60 Hz
(0.1V to 250V) up to 500 MHz
(1μA to 150A) 60 Hz

DC Voltage / Current

(1mV to 15-kV) / (1μA to 10A)

Power Factor / Efficiency / Crest Factor

(Power to 30kW)

Resistance

(1mΩ to 4000MΩ)

Surge

(Up to 10 kV / 5 kA) (Combination
Wave and Ring Wave)

Test Method(s) ¹:

47 CFR FCC Part 15C, 15D, 15E, 15F, 15G, 15H
(using ANSI C63.10:2013, ANSI C63.17:2013 and
FCC KDB 905462 D02 (v02))

47 CFR FCC Parts 20, 22, 24, 25, 27, 30, 73, 74, 80, 87,
90, 95, 96, 97, 101 (using ANSI/TIA-603-E,
TIA-102.CAAA-E, ANSI C63.26:2015)

CTIA Test Plan for Wireless Device Over-the-Air
Performance (Method for Measurement for Radiated Power
and Receiver Performance) V3.8.2;
CTIA Test Plan for RF Performance Evaluation of WiFi
Mobile Converged Devices V2.1.0

FAA AC 150/5345-10H
FAA AC 150/5345-43J
FAA AC 150/5345-44K
FAA AC 150/5345-46E
FAA AC 150/5345-47C
FAA EB 67D

On the following products and materials:

Telecommunications Terminal Equipment (TTE), Radio Equipment, Network Equipment, Information Technology Equipment (ITE), Automotive Electronic Equipment, Automotive Hybrid Electronic Devices, Maritime Navigation and Radio Communication Equipment and Systems, Vehicles, Boats and Internal Combustion Engine Driven Devices, Automotive, Aviation, and General Lighting Products, Medical Electrical Equipment, Motors, Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment, Household Appliances, Electric Tools, Low-voltage Switchgear and Control gear, Programmable Controllers, Electrical Equipment for Measurement, Control and Laboratory Use, Base Materials, Power and Data Transmission Cables and Connectors

¹ When the date, edition, version, etc. is not identified in the scope of accreditation, laboratories may use the version that immediately precedes the current version for a period of one year from the date of publication of the standard measurement method, per part C., Section 1 of A2LA R101 - General Requirements- Accreditation of ISO-IEC 17025 Laboratories.