



RF Exposure Evaluation Declaration

FCC ID: BRWSPMSLT300

IC: 6157A-SPMSLT300

Applicant: Horizon Hobby, LLC

Application Type: Certification


Product: SLT3 3CH TX

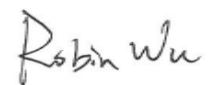
Model No.: SPMSLT300

Brand Name: Spektrum

FCC Classification: Digital Transmission System (DTS)

Test Procedure(s): KDB 447498 D01v06, RSS-102 Issue 5

Reviewed By : 
(Sunny Sun)

Approved By : 
(Robin Wu)



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

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Revision History

Report No.	Version	Description	Issue Date	Note
2003RSU018-U2	Rev. 01	Initial Report	04-08-2020	Valid

1. Equipment Description

1.1. Feature of Equipment under Test

Product Name:	SLT3 3CH TX
Model No.:	SPMSLT300
Brand Name:	Spektrum
Frequency Range:	2403 ~ 2480 MHz
Type of Modulation:	GFSK
Channel Number:	75
Antenna Type:	Monopole Antenna,
Antenna Gain:	2dBi

1.2. Description of Test Software

The test utility software used during testing was provided by the manufacturer.

Power parameter values are as below.

Channel	Frequency	Power Parameter Value
01 ~ 04	2403 MHz ~ 2406 MHz	10
05 ~ 66	2407 MHz ~ 2468 MHz	15
67 ~ 74	2469 MHz ~ 2476 MHz	10
75	2480 MHz	0

Note: For the different power level, we choose Channel 01 (2403MHz), Channel 38(2440MHz), Channel 74 (2476MHz) and Channel 75 (2480MHz) for all of test.

1.3. Channel List

Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2403 MHz	02	2404 MHz	03	2405 MHz
04	2406 MHz	05	2407 MHz	06	2408 MHz
07	2409 MHz	08	2410 MHz	09	2411 MHz
10	2412 MHz	11	2413 MHz	12	2414 MHz
13	2415 MHz	14	2416 MHz	15	2417 MHz
16	2418 MHz	17	2419 MHz	18	2420 MHz
19	2421 MHz	20	2422 MHz	21	2423 MHz
22	2424 MHz	23	2425 MHz	24	2426 MHz
25	2427 MHz	26	2428 MHz	27	2429 MHz
28	2430 MHz	29	2431 MHz	30	2432 MHz
31	2433 MHz	32	2434 MHz	33	2435 MHz
34	2436 MHz	35	2437 MHz	36	2438 MHz
37	2439 MHz	38	2440 MHz	39	2441 MHz
40	2442 MHz	41	2443 MHz	42	2444 MHz
43	2445 MHz	44	2446 MHz	45	2447 MHz
46	2448 MHz	47	2449 MHz	48	2450 MHz
49	2451 MHz	50	2452 MHz	51	2453 MHz
52	2454 MHz	53	2455 MHz	54	2456 MHz
55	2457 MHz	56	2458 MHz	57	2459 MHz
58	2460 MHz	59	2461 MHz	60	2462 MHz
61	2463 MHz	62	2464 MHz	63	2465 MHz
64	2466 MHz	65	2467 MHz	66	2468 MHz
67	2469 MHz	68	2470 MHz	69	2471 MHz
70	2472 MHz	71	2473 MHz	72	2474 MHz
73	2475 MHz	74	2476 MHz	75	2480 MHz

Note: For the different power level, we choose Channel 01 (2403MHz), Channel 38(2440MHz), Channel 74 (2476MHz) and Channel 75 (2480MHz) for all of test.

2. RF Exposure Evaluation

2.1. Limits

For FCC: SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	
MHz	30	35	40	45	50	mm
150	232	271	310	349	387	SAR Test Exclusion Threshold (mW)
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

Note: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{\text{max. power of channel, including tune-up tolerance, mW}}{\text{min. test separation distance, mm}} \right] * \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

For ISSED: SAR Test Exclusion Thresholds for RSS-102 issue 5

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. For low frequencies (300 MHz to 835 MHz), the exemption limits are derived from a linear fit. For high frequencies (1900 MHz and above), the exemption limits are derived from a third order polynomial fit.

MHz	5	10	15	20	25	mm
≤ 300	71	101	132	162	193	SAR Test Exclusion Threshold (mW)
450	52	70	88	106	123	
835	17	30	42	55	67	
1900	7	10	18	34	60	
2450	4	7	15	30	52	
3500	2	6	16	32	55	
5800	1	6	15	27	41	
MHz	30	35	40	45	50	mm
≤ 300	223	254	284	315	345	SAR Test Exclusion Threshold (mW)
450	141	159	177	195	213	
835	80	92	105	117	130	
1900	99	153	225	316	431	
2450	83	123	173	235	309	
3500	86	124	170	225	290	
5800	56	71	85	97	106	

2.2. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 18°C and 78% RH.

2.3. Test Result of RF Exposure Evaluation

Product	SLT3 3CH TX
Test Item	RF Exposure Evaluation

FCC SAR exclusion assessment via Time-average Conducted Power

Test Mode	Channel No.	Frequency (MHz)	Conducted Average Power (dBm)	Tune-up Limit Power (dBm)	Duty Cycle (%)	Time-average Conducted Power (mW)
GFSK	01	2403	6.34	8.0	2.0	0.13
GFSK	38	2440	14.25	15.0	2.0	0.63
GFSK	74	2475	7.80	8.0	2.0	0.13
GFSK	75	2480	-1.99	-1.5	2.0	0.01

Note:

Per FCC KDB 447498 D01v06, the SAR exclusion threshold for distances < 50mm is defined by the following equation:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{f(\text{GHz})}] \leq 3.0$$

Based on the maximum conducted power of this device and the antenna to use separation distance, The SAR test was not required:

$$[(0.63\text{mW}/5) * \sqrt{2.440}] = 0.2 < 3.0$$

Note: When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

For ISED SAR exclusion assessment via e.i.r.p Power:

Test Mode	Channel No.	Frequency (MHz)	Conducted Average Power (dBm)	Tune-up Limit Power (dBm)	EIRP (dBm)	Duty Cycle (%)	Time-average EIRP (mW)	SAR Test Exclusion Threshold (mW)	Results
GFSK	01	2403	6.34	8.0	10.0	2.0	0.20	4	Complies
GFSK	38	2440	14.25	15.0	17.0	2.0	1.00	4	Complies
GFSK	74	2475	7.80	8.0	10.0	2.0	0.20	4	Complies
GFSK	75	2480	-1.99	-1.5	0.5	2.0	0.02	4	Complies

Note: The minimum distance of antenna to user is less than 5mm.

The End

Annex - EUT Photographs

Please refer to “2003RSU018-UE” file.