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SAR EXCLUSION REPORT

Manufacturer: **Magnum Energy Solutions**
43 Village Way
Hudson, Ohio 44236 USA

Applicant: Same as Above

Product Name: **Transceiver Module (LTCM300U, LTCM310U);**
Scavenger Transceiver Module (LSTM300U)

Product Description: 902.875 MHz Transmitter Module

Operating Voltage/Frequency: 120V/60 Hz

Model(s): **LTCM300U***

**Denotes actual model tested of product family that includes the following: LSTM300U is same module, but application is in sensor. LTCM310U is same module, but not programmable.*

FCC ID: **2ANUH-LSTM300U**

Standard(s):

- **KDB447498 Appendix A**

Report Constructed by:

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Report Reviewed by:

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Order Number: F2LQ10353

Client: Magnum Energy Solutions

Model: LTCM300U

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1 ADMINISTRATIVE INFORMATION

1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

1.2 Document History

Document Number	Description	Issue Date	Approved By
F2LQ10353-05E	First Issue	Feb. 17, 2018	K. Littell



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2 SUMMARY OF RESULTS

	Standard(s)	Results
SAR Exclusion	KDB447498, Appendix A	Complies

Modifications Made to the Equipment
None

011714

Report Number: F2LQ10353-05E

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3 ENGINEERING STATEMENT

This report has been prepared on behalf of Magnum Energy Solutions to provide documentation for the SAR Exclusion herein. This equipment has been tested and found to comply with the SAR Exclusion levels listed in Appendix A of KDB447498. The minimum distance from the LTCM300U transceiver module antenna 10mm. The output power of the LTCM300U transceiver module is 17.5mW E.I.R.P and is well below the SAR Exclusion level of 32mW.

Appendix A

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 section 4.3.1 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	



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4 EUT INFORMATION AND DATA

4.1 Equipment Under Test:

Product: Transceiver Module

Model: LTCM300U*

Serial No(s).: 274703087664; 274703032880 (wire antenna tests only)

FCC ID: 2ANUH-LSTM300U

**Denotes actual model tested of product family that includes the following: LTCM300U is same module, but application is in sensor. LTCM310U is same module, but not programmable.*

4.2 Trade Name:

Magnum Energy Solutions

4.3 Power Supply:

Non-Rechargeable Batteries; PhiHong PSAA20R-033

4.4 Applicable Rules:

KDB447498

4.5 Equipment Category:

Radio Transmitter-DTS

4.6 Antenna:

3.3 dBi Whip Antenna

1.2 dBi Whip Antenna

4.7 Accessories:

N/A

4.8 Test Item Condition:

The equipment to be tested was received in good condition.