



1516 Centre Circle, Downers Grove IL 60515

ANTENNA EXHIBIT	
Manufacturer Name	SMART LABEL SOLUTIONS, LLC
Manufacturer Address	1100 Durant Dr., Howell, MI 48855
Model No.	SLS 10000050
Specifications	FCC "Code of Federal Regulations" Title 47 Part 2.1033(b)(4), 15.203, 15.212, 15.217, 15.219, 15.255 and 15.256 KDB 353028 D01 v01 f01 Industry Canada RSS-GEN
Test Facility	Elite Electronic Engineering, Inc. 1516 Centre Circle, Downers Grove, IL 60515 FCC Reg. Number: 269750 IC Reg. Number: 2987A CAB Identifier: US0107
Requirement	<p>All part 15 applications will need to show how the antenna gain was derived either from a manufacturer data sheet or a measurement.</p> <p>Where the gain of the antenna is inherently accounted for as a result of the measurement, such as field strength measurements on a part 15.249 or 15.231 device, so the gain does not necessarily need to be verified. However, enough information regarding the construction of the antenna shall be provided. Such information maybe photographs, length of wire antenna etc.</p> <p>The antenna gain information shall be made public (not confidential). Any proprietary information such as construction maybe stripped from the gain information report and held confidential. The main antenna information we require is the maximum gain of the antenna for the band of operation.</p> <p>This information must be provided as a data sheet or a measurement report.</p>

Product Description	
Antenna Type	Omni directional Multi Linear Patch Antenna (a.k.a. Wave)
Assembly Description	An assembly that includes quantity (2) 3ft Wave Antenna Radiators encased & separated by foam with a metal backplane.
Antenna Description	Antenna 1: 3ft Wave Antenna with a 57" length of LMR195 coaxial feed cable
	Antenna 2: 3ft Wave Antenna with a 16" length of LMR195 coaxial feed cable
Measurements Notes	Results for Antenna 1 and Antenna 2 are for the antenna only (feed cable path losses were accounted for)
DUT Dimensions	Approximately 109cm x23cm x8cm
Mechanical Mode	Freespace
Frequency Evaluation Span	902-928MHz



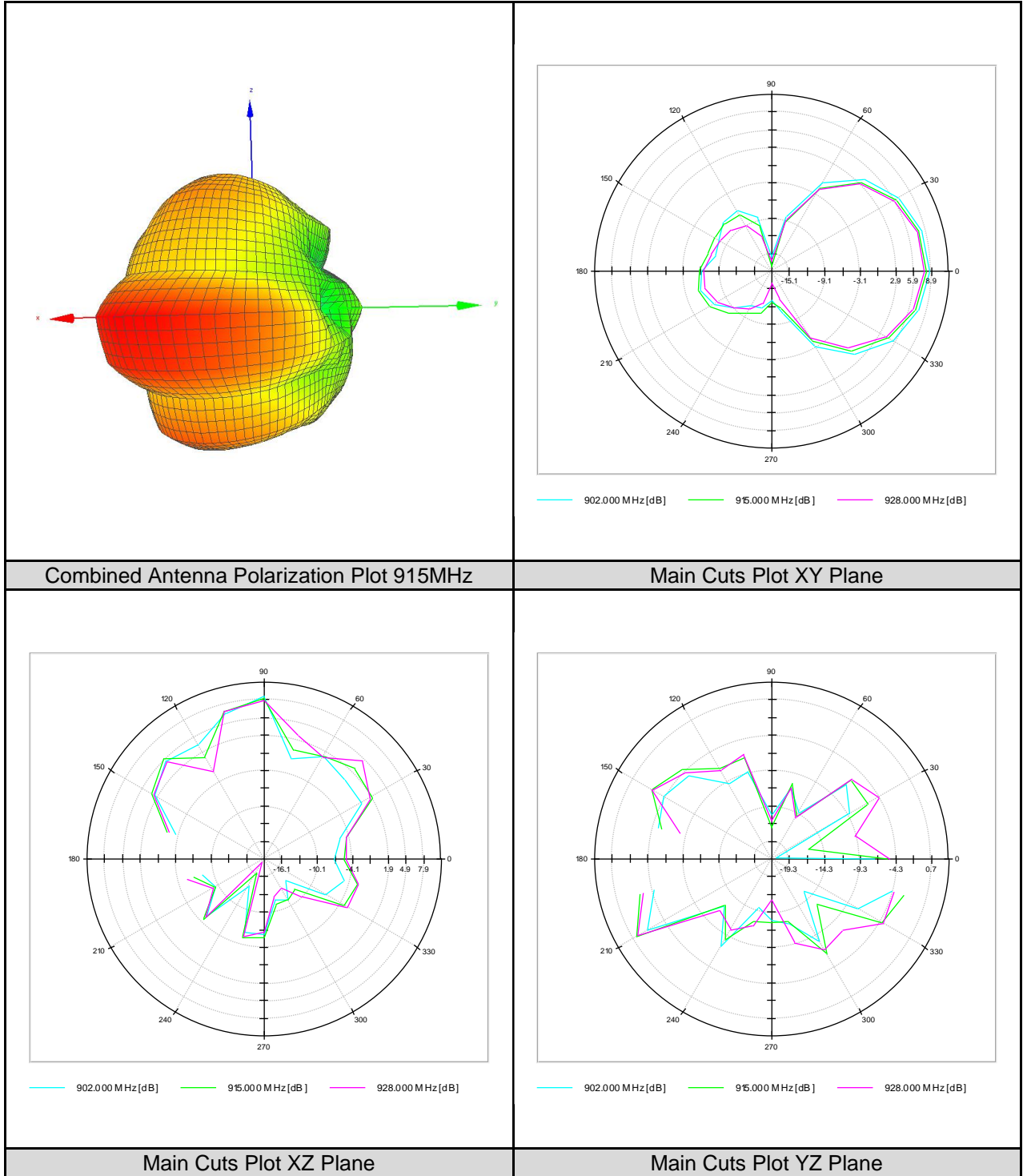
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Antenna 1 Results (FREESPACE)																
Frequency (MHz)	902	904	906	908	910	912	914	915	916	918	920	922	924	926	928	Ave.
Gain (dBi)	8.6	8.6	8.5	8.5	8.3	8.3	8.1	8.1	8.1	8.0	7.8	7.8	7.9	7.8	7.7	8.1
Tot. Rad. Pwr. (dBm)	-2.0	-1.9	-1.8	-1.7	-1.7	-1.7	-1.7	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.6	-1.7
Directivity (dBi)	10.6	10.5	10.3	10.2	10.0	9.9	9.8	9.7	9.7	9.6	9.5	9.4	9.4	9.3	9.3	9.8
Efficiency (%)	63.4	64.6	65.9	67.0	67.6	68.2	68.4	68.6	69.1	68.7	68.9	69.0	69.5	69.4	69.5	67.8
Antenna 2 results (FREESPACE)																
Frequency (MHz)	902	904	906	908	910	912	914	915	916	918	920	922	924	926	928	Ave.
Gain (dBi)	6.1	6.3	6.6	6.8	7.0	7.1	7.1	7.2	7.4	7.6	7.7	7.8	7.9	8.0	8.0	7.2
Tot. Rad. Pwr. (dBm)	-1.8	-1.7	-1.7	-1.6	-1.5	-1.5	-1.4	-1.4	-1.4	-1.4	-1.4	-1.4	-1.3	-1.3	-1.3	-1.5
Directivity (dBi)	7.9	8.1	8.2	8.4	8.5	8.6	8.6	8.6	8.8	8.9	9.1	9.2	9.2	9.3	9.3	8.7
Efficiency (%)	65.9	66.9	68.2	69.6	70.5	71.3	71.8	72.2	72.7	72.8	73.1	73.1	73.6	73.7	73.6	71.3



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Antenna 1 Plots





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Antenna 2 Plots

