AVERY DENNISON

SKU ANALYSIS FOR ABC COMPANY

TAG DESIGNS

AD-222

General-purpose inlay for use in a wide variety of applications

AD-431

Offers improved performance across a variety of carton contents.

PRODUCT

External Product Packaging

Internal Product Packaging

PERFORMANCE RESULTS

		Best Position Location	Read Distance (feet)	Conveyor Pass %	Range of Conveyor Reads	Possible Option
Antifreeze Coolant						
AD-222	Horizontal	2" x 11"	20.5	100%	8 - 9	Yes
	Vertical	1" x 10"	13.4	100%	10 - 12	Yes
AD-431	Horizontal	2" x 11"	20.7	100%	8 - 11	Yes
	Vertical	1" x 10"	15	100%	9 - 10	Yes
50/50 Diluted Antifreeze Coolant						
AD-222	Horizontal	2" x 11"	22.2	100%	5 - 11	Yes
	Vertical	1" x 10"	15	100%	8 - 11	Yes
AD-431	Horizontal	2" x 11"	23.5	100%	7 - 10	Yes
	Vertical	1" x 10"	14.5	100%	11 - 13	Yes

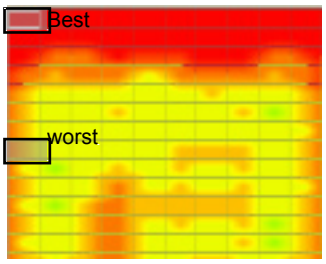
The best position selected will give superior results for the AD-222 and AD-431 due to the air gap formed by the taper of the packaged containers. The bottom $^{2}/_{3}$ of the carton will result in reduced RF performance due to proximity to the bottled solution. This area should be avoided for best results.

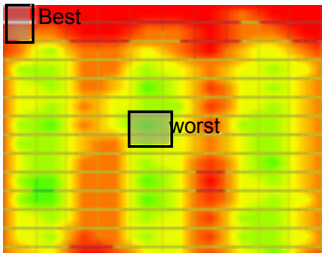
CONCLUSION

The economy AD-222 is the recommended tag design for these products. The mid-range AD-431 will also provide superior performance but at additional cost. Tag placement along the top third of the box will give optimal results. The tag may be placed outside this area, but RF performance will be reduced.

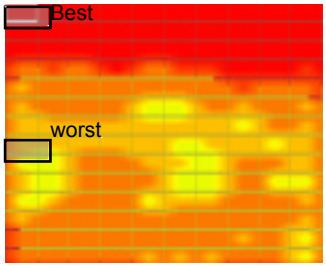
SWEET SPOT TEST

Sweet Spot Test Area (Reference Point = Tag Center)



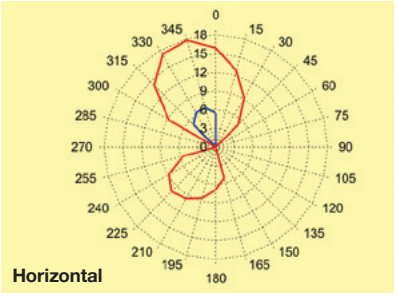


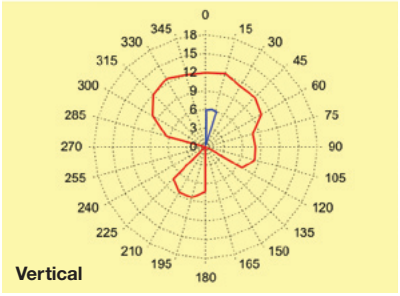
Side 1



Side 2

ANGULAR TESTING (0° = Box Front: 180° = Box Back)

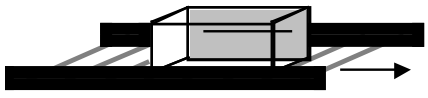




	Horizontal (feet)		Vertical (feet)	
	Best	Worst	Best	Worst
0°	20.5	6.9	13.4	6.2
45°	6.2	0	11.8	0
-45°	15	6.7	13.8	0

CONVEYOR TESTING

Readers:	ThingMagic M4
# Antenna:	3 Bi-static
Conveyor Belt:	2" OD Metal Rollers
Speed:	600 fpm
Configuration:	EPC Compliant



Side into Reader

Face into Reader

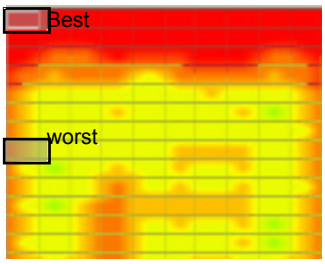
Position	Orientation	Carton Orientation	Antenna A1	Antenna A2	Antenna A3	# Reads	% Pass
Best (antenna on face)	Horizontal	Face into reader	2	5	1	8	100%
	2" x 11"	Side into reader	1	3	5	9	100%
	Vertical	Face into reader	3	4	3	10	100%
	1" x 10"	Side into reader	1	11	0	12	100%

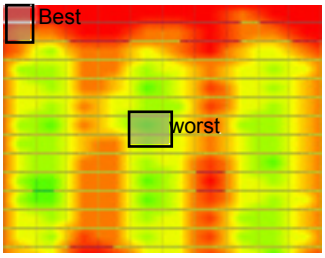
SWEET SPOT TEST

Sweet Spot Test Area (Reference Point = Tag Center)

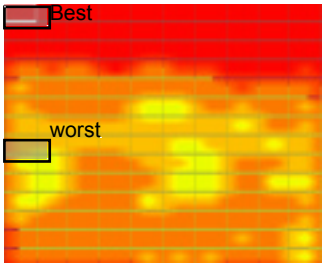
Performance Scale

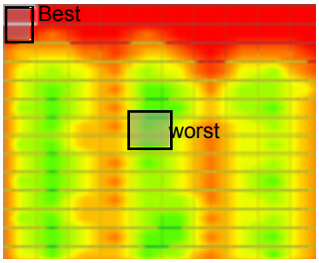
Best (>10ft.) Worst (<3ft.)





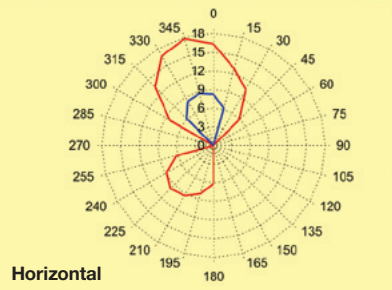
Side 1

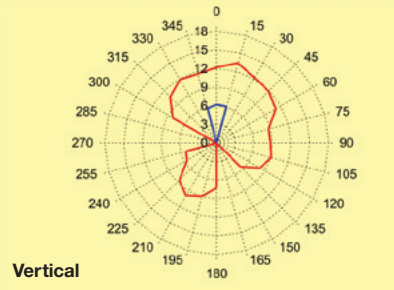




Side 2

ANGULAR TESTING (0° = Box Front: 180° = Box Back)

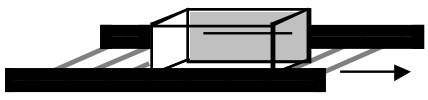




	Horizontal (feet)		Vertical (feet)	
	Best	Worst	Best	Worst
0°	20.7	9.4	15	7.8
45°	7.2	0	12.8	0
-45°	14.8	7.6	12.3	0

CONVEYOR TESTING

Readers:	ThingMagic M4
# Antenna:	3 Bi-static
Conveyor Belt:	2" OD Metal Rollers
Speed:	600 fpm
Configuration:	EPC Compliant



Side into Reader

Face into Reader

			Antenna				
Position	Orientation	Carton Orientation	A1	A2	A3	# Reads	% Pass
Best (antenna on face)	Horizontal	Face into reader	0	5	3	8	100%
	2" x 11"	Side into reader	1	10	0	11	100%
	Vertical	Face into reader	3	6	0	9	100%
	1" x 10"	Side into reader	1	9	0	10	100%