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ANALOG DEVICES
TEST EQUIVALENCY REPORT

I. PURPOSE

To qualify final testing of ADR5041 product on STS-T1_LIN2 tester from Carsem (CRS) to Analog Devices Philippines (ADPhils).

II. PRODUCT INFORMATION

Designed for space-critical applications, the ADR5041 is a high precision shunt voltage reference, housed in ultrasmall SC70 and SOT-23 packages. These voltage references are multipurpose, easy-to-use references that can be used in a vast array of applications. They feature low temperature drift, an initial accuracy of better than 0.1%, and fast settling time.

III. TEST EQUIVALENCY

Baseline product performance and critical parameter correlation are considered as key indicators for test equivalency criteria.

A. Set up Information Comparison

New tester type, handler, contactor and test program will be qualified in test site (ADGT).

Device	**Sending Site (CRS)**	**Receiving Site (ADPH)**
Tester	CTS5040	STS-T1_LIN2
Handler	ISMECA /NT-X16	RASCO2000
Performance Board/Test Card	P-39101	P-55812
Contactor	P-39095	P-46023
Test Program	V02888P24 V02888P25	V17006P09 V17006P10 V17006P11
Test Flow	25C -> 25C	25C -> 125C -> 25C

Table 1. Setup Information Comparison

B. Product Baseline Performance Comparison

Run qualification lots with 300 units in Carsem and the same units were tested in ADGT. Data between sites were analysed as summarized in Table 2. Mean shift, sigma spread, and yield passed the criteria.

Generic	Package	Lot number	Lot Size	Sending Site	Receiving Site	% Mean Shift Criteria	Sigma Spread Criteria	Yield Criteria P-value <0.05
ADR5041	SOT_23_3	6834161.1	170	CRS	ADGT	PASSED	PASSED	PASSED
ADR5041	SOT_23_3	6773147.1	130	CRS	ADGT	PASSED	PASSED	PASSED

Table 2. Matching Baseline Performance Table

Top Bin Parameters	Remarks
Bin 1: Good	Matched
Bin14: FUSE TRIM	Matched
Bin 151: PAT	Matched
Bin 8: CONTINUITY	Matched

Table 3. Top Bins Matching Table

C. Correlation Summary

Key Datasheet Parameter (Unit)	Data Sheet Limit			Sending Site (Carsem)				Receiving Site (ADGT)			
	Low	Typ	High	Mean	Stdv	CPK lo	CPK Hi	Mean	Stdv	CPK lo	CPK Hi
TEST_OUTV@100uA (V)	2.495	2.5	2.505	2.500063	0.001016	1.00461	0.963277	2.500274	9.70E-04	1.1248	0.936289
TEST_VERR@100uA (V)	-0.005		0.005	6.30E-05	0.001016	1.00461	0.963272	2.74E-04	9.70E-04	1.12479	0.936278
DELTAVOUT_50uA_1mA (V)		0.0005	0.0018	5.29E-04	3.82E-05	4.60998	11.09087	5.15E-04	2.69E-05	6.3702	15.9056
DELTAVOUT_1mA_15mA (V)		0.004	0.008	4.27E-04	4.05E-05	3.51707	62.34651	0.002518	1.41E-04	5.9675	12.99345
DYN RESISTANCE OHMS ()			0.2	0.025568	0.001213	7.02889	47.95337	0.081228	0.003881	6.97712	10.20193
VOUT@SR_230kV/sec (V)				2.49797	0.001085	3.986	5.233644	2.50106	9.73E-04	5.50337	4.776931
VOUT@SR_1p5kV/sec (V)				2.498035	0.001062	4.09265	5.326724	2.501062	9.72E-04	5.50625	4.778207

Table 4. Repeatability Summary for Critical Test

Key Datasheet Parameter (Unit)	Calculated Data				Result
	Mean Shift	Sigma Spread	% GR&R	NDC	
TEST_OUTV@100uA (V)	3.522785	0.954783	5.278209951	26.71360202	Passed
TEST_VERR@100uA (V)	3.52284	0.954787	5.278141233	26.71394981	Passed
DELTAVOUT_50uA_1mA (V)	0.764417	0.704839	9.987641754	14.11744669	Passed
DELTAVOUT_1mA_15mA (V)	26.132659	3.473643	22.0553287	6.393012859	Passed - Program limits are tight vs the DS
DYN RESISTANCE OHMS ()	27.830211	3.200541	25.40862351	5.549297071	Passed - Program limits are tight vs the DS
VOUT@SR_230kV/sec (V)	10.299367	0.896827	1.94040184	72.66536091	Passed - Non DS
VOUT@SR_1p5kV/sec (V)	10.090264	0.915884	1.94860198	72.35956929	Passed - Non DS

Table 4. Repeatability Summary for Critical Test

IV. ADDITIONAL COMMENTS (IF ANY)

V. CONCLUSION

Based on test equivalency comparative results, ADI Philippines passed the criteria as an alternate test site for ADR5041 part.