



# Test Report: NGE30U24-P1J

---

30W AC-DC Reliable Wall-mounted Interchangeable  
Type Green Adaptor

## ■ DESIGN VERIFY TEST

Output Function Test

Input Function Test

Protection Function Test

Control Function Test

Component Stress Test

## ■ SAFETY & E.M.C. TEST

Safety Test

E.M.C. Test

## ■ RELIABILITY TEST

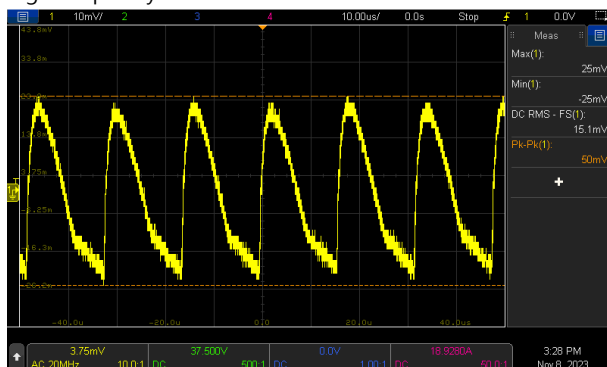
ENVIRONMENT TEST

## DESIGN VERIFY TEST

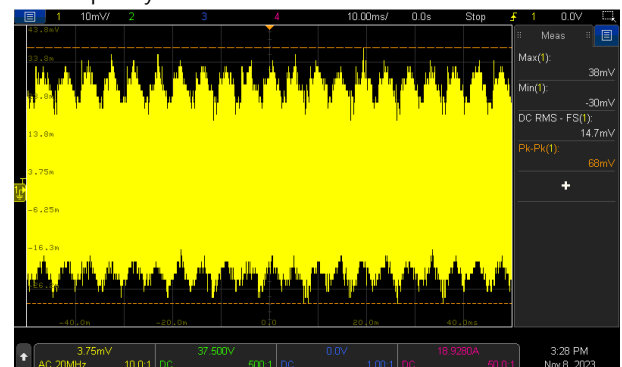
### OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OUTPUT VOLTAGE TOLERANCE	V1: -2%~ +2%	I/P: 80VAC~264VAC O/P:FULL~MIN. LOAD Ta:25°C	V1: -0.326%~0.326%
2	LINE REGULATION	V1: -1%~ +1%	I/P: 80VAC~ 264VAC O/P:FULL LOAD Ta:25°C	V1: 0%~0%
3	LOAD REGULATION	V1: -2%~ +2%	I/P: 230VAC O/P:FULL ~MIN LOAD Ta:25°C	V1: -0.326%~0.326%
4	OVER/UNDERSHOOT TEST	<± 5%	I/P: 230VAC O/P:FULL LOAD Ta:25°C	0.17%
5	RIPPLE & NOISE (Max)	V1: 240mVp-p	I/P:230VAC O/P:FULL LOAD Ta:25°C	V1: 50mVp-p / high frequency 68mVp-p / low frequency

high frequency :

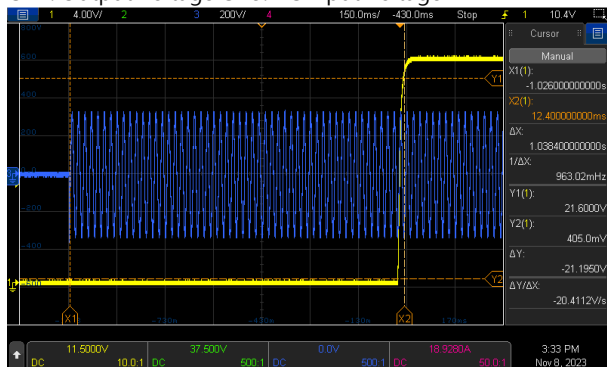


low frequency :

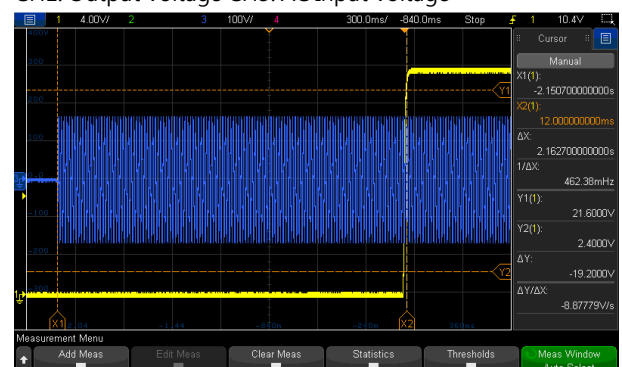


6	SET UP TIME(Max)	230VAC/1500ms 115VAC/3000ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 1038.4ms 115VAC/ 2162.7ms
---	------------------	--------------------------------	--	--------------------------------------

INPUT=230VAC/50HZ @ FULL LOAD  
CH1: Output Voltage CH3: AC Input Voltage



INPUT=115VAC/60HZ @ FULL LOAD  
CH1: Output Voltage CH3: AC Input Voltage





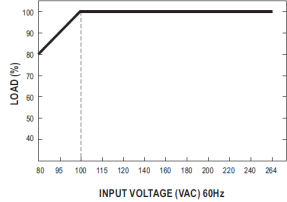
30W AC-DC Reliable Wall-mounted  
Interchangeable Type Green Adaptor

NGE30 series

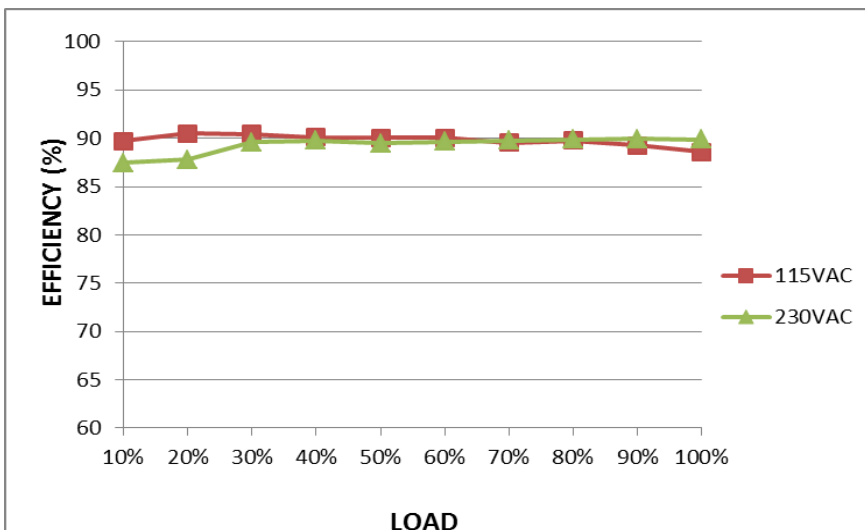
7	RISE TIME (Max)	230VAC/30ms 115VAC/30ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 16.78ms 115VAC/ 16.54ms
INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage		INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage		
8	HOLD UP TIME (Typ.)	230VAC/30ms 115VAC/10ms	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	230VAC/ 94.54ms 115VAC/ 17.8ms
INPUT=230VAC/50HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage		INPUT=115VAC/60HZ @ FULL LOAD CH1: Output Voltage CH3: AC Input Voltage		
9	DYNAMIC LOAD	V1: 2400mVp-p	I/P: 230VAC O/P: (1) FULL/0% LOAD 50%DUTY / 120HZ (2) FULL/0% LOAD 50%DUTY / 1KHZ Ta:25°C	494mVp-p 535mVp-p
FULL /0% LOAD 50%DUTY / 120HZ		FULL /0% LOAD 50%DUTY / 1KHZ		



### INPUT FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	INPUT VOLTAGE RANGE	80VAC~264VAC 113VDC~ 370VDC 	(1) I/P: TESTING O/P: FULL LOAD/ 80% LOAD (2) I/P: DC TESTING (L: + N:-) O/P: FULL LOAD/ 80% LOAD (3) I/P: DC TESTING (L: - N: +) O/P: FULL LOAD/ 80% LOAD Ta:25°C	(1) 73.8V~264V/ FULL LOAD 70.9V~264V/ 80% LOAD (2) 99.5Vdc~370Vdc/FULL LOAD 99.5Vdc~370Vdc/80% LOAD (3) 99.5Vdc~370Vdc/FULL LOAD 99.5Vdc~370Vdc/80% LOAD
			I/P: HIGH-LINE+15%=300V O/P:FULL LOAD /MIN LOAD (PLEASE CHECK DERATING CURVE) ON: 30 Sec OFF: 30 Sec 10MIN ( POWER ON/OFF NO DAMAGE )	TEST : OK
2	INPUT FREQUENCY RANGE	47HZ ~63 HZ NO DAMAGE	I/P:80 VAC ~264 VAC O/P:FULL~MIN LOAD Ta:25°C	TEST : OK
3	INPUT CURRENT (Typ.)	230V/ 0.6A 115V/ 1A	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =0.35A/ 230VAC I =0.56A/ 115VAC
4	LEAKAGE CURRENT	Touch current 100uA/ 264V for 60601	I/P : 264 VAC O/P : Min LOAD Ta : 25°C	72.7uA
5	NO LOAD CONSUMPTION	< 0.075W	I/P : 240VAC O/P : NO LOAD Ta : 25°C	0.053W
6	EFFICIENCY(Typ.)	88.5%	I/P:230VAC/115VAC O/P:FULL LOAD Ta:25°C	89.63%/230VAC

EFFICIENCY vs LOAD





7	INRUSH CURRENT(Typ.)	230V/70A 115V/35A COLD START	I/P : 230 VAC I/P : 115 VAC O/P : FULL LOAD Ta : 25°C	I =57.7A/ 230VAC I =25.7A/ 115VAC T50=289.8us/230V
INPUT=230VAC/50HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current		INPUT=115VAC/ 60HZ @ FULL LOAD CH1: AC Input Voltage CH4: Input current		

### PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	OVER LOAD PROTECTION	110%~150% rated output power Protection type: Hiccup mode, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 230VAC I/P: 100VAC O/P: TESTING Ta:25°C	136.8%/ 264VAC 132.8%/ 230VAC 127.2%/100VAC PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed
2	OVER VOLTAGE PROTECTION	110%~140% rated output voltage Protection type: Clamp by zener diode	I/P: TESTING O/P:MIN LOAD Ta:25°C	31.4V PROTECTION TYPE : Clamp by zener diode
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE Protection type: Hiccup mode, recovers automatically after fault condition is removed	I/P: 264VAC I/P: 80VAC O/P: FULL LOAD Ta:25°C	NO DAMAGE OK PROTECTION TYPE : Hiccup mode, recovers automatically after fault condition is removed



### COMPONENT STRESS TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	PWM Transistor ( D to S) or (C to E) Peak Voltage	Q1 Rated: 7.3A/ 700V	AC ON/OFF I/P: High-Line +3V =267V VDS: O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. Ta:25°C	Q1 VDS: (1) 527V (2) 527V (3) 538V (4) 534V (5) 531V (6) 534V (7) 527V
2	Diode Peak Voltage	Q100 Rated: 20A/150V	AC ON/OFF I/P: High-Line +3V =267 V O/P: (1)Full Load (2)Output Short (3) Dynamic Load Full Load/ Min. Load 90%Duty/1KHz (4) Dynamic Load Full Load/ Min. Load 90%Duty/3KHz (5) Dynamic Load Full Load/ Min. Load 90%Duty/5KHz (6) Dynamic Load 100% Load/ Min. Load 50%Duty/120Hz (7)0%→400% Load. (8).NO LOAD Ta:25°C	Q100: VDS: (1) 119.3V (2) 140.9V (3) 119.7V (4) 120.6V (5) 119.7V (6) 120.8V (7) 135.8V (8) 119.0V
3	Input Capacitor Voltage	C5 Rated :680μ /400 V	I/P: High-Line +3V =267V O/P: (1)Full Load input on/off (2) Min load input on /Off (3) Full Load /Min load Change (4) Full load continue Ta:25°C	(1) 378V (2) 378V (3) 378V (4) 378V
4	Control IC Voltage Test	PWM IC U3 Rated: 8V~ 26.5V	AC ON/OFF I/P: High-Line +3V =267 V O/P:(1) FULL LOAD (2) Output Short (3) O.L.P (4) NO LOAD VRmin (LOW LINE) Ta:25°C	U3 (1) 16.6V (2) 16.6V (3) 16.6V (4) 16.6V



5	Clamp Diode Peak Voltage	D5 Rated : 600V/1A	AC ON/OFF I/P : High-Line +3V = 267 V O/P : (1) Dynamic Load 90%Duty/1KHz (2) Full load continue Ta : 25°C	(1) 503V (2) 496V
---	--------------------------	-----------------------	---	----------------------

## ■ SAFETY& E.M.C. TEST

### SAFETY TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	WITHSTAND VOLTAGE	I/P-O/P: 4KVAC/min	I/P-O/P: 4.4 KVAC/min Ta:25°C	I/P-O/P: 1.422 mA NO DAMAGE
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P: 600 VDC Ta:25°C	I/P-O/P: 50 GΩ NO DAMAGE

### E.M.C TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT
1	HARMONIC	BS EN/EN61000-3-2 ■ CLASS A	I/P:230VAC/50HZ O/P:FULL LOAD Ta:25°C	PASS
2	CONDUCTION	BS EN/EN55032(CISPR32)/EN55011, FCC Part15 , CNS15936, GB/T 9254.1-2021 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL/50% LOAD Ta : 25°C	PASS
3	RADIATION	BS EN/EN55032(CISPR32)/EN55011, FCC Part15 , CNS15936, GB/T 9254.1-2021 CLASS B	I/P : 230 VAC (50HZ) O/P : FULL LOAD Ta : 25°C	PASS
4	E.S.D	BS EN/EN61000-4-2 Level 3, 15KV air; Level 2, 8KV contact	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
5	E.F.T	BS EN/EN 61000-4-4 INPUT : 1KV	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
6	SURGE	BS EN/EN 61000-4-5 Level 3, 1KV/L-N	I/P : 230 VAC/50HZ O/P : FULL LOAD Ta : 25°C	CRITERIA A
7	Test by certified Lab & Test Report Prepare Any contradictions of the test results, please refer to the latest EMC test report			



## RELIABILITY TEST

### ENVIRONMENT TEST

NO	TEST ITEM	SPECIFICATION	TEST CONDITION	RESULT																																																																																								
1	TEMPERATURE RISE TEST	MODEL : NGE30CN24-P1J 1. ROOM AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta= 25 °C 2. HIGH AMBIENT BURN-IN : 2 HRS I/P : 230VAC O/P : FULL LOAD Ta=45 °C																																																																																										
		<table border="1"> <thead> <tr> <th>NO</th> <th>Position</th> <th>ROOM AMBIENT Ta=25°C</th> <th>HIGH AMBIENT Ta=45°C</th> </tr> </thead> <tbody> <tr><td>1</td><td>RTH1</td><td>52.9°C</td><td>68.2°C</td></tr> <tr><td>2</td><td>LF1</td><td>55.6°C</td><td>72.7°C</td></tr> <tr><td>3</td><td>ZNR1</td><td>56.9°C</td><td>74.6°C</td></tr> <tr><td>4</td><td>C1</td><td>57.8°C</td><td>75.7°C</td></tr> <tr><td>5</td><td>LF2</td><td>60.0°C</td><td>78.0°C</td></tr> <tr><td>6</td><td>BD1</td><td>62.7°C</td><td>80.7°C</td></tr> <tr><td>7</td><td>Q1</td><td>63.5°C</td><td>81.6°C</td></tr> <tr><td>8</td><td>C5</td><td>55.7°C</td><td>73.4°C</td></tr> <tr><td>9</td><td>C40</td><td>62.9°C</td><td>80.5°C</td></tr> <tr><td>10</td><td>T1coil</td><td>74.8°C</td><td>92.0°C</td></tr> <tr><td>11</td><td>T1core</td><td>72.0°C</td><td>88.9°C</td></tr> <tr><td>12</td><td>C106</td><td>64.8°C</td><td>81.1°C</td></tr> <tr><td>13</td><td>C105</td><td>68.6°C</td><td>84.3°C</td></tr> <tr><td>14</td><td>Q100</td><td>84.5°C</td><td>100.4°C</td></tr> <tr><td>15</td><td>U2</td><td>51.0°C</td><td>68.7°C</td></tr> <tr><td>16</td><td>U3</td><td>55.2°C</td><td>72.9°C</td></tr> <tr><td>17</td><td>D40</td><td>62.4°C</td><td>79.9°C</td></tr> <tr><td>18</td><td>R101</td><td>84.0°C</td><td>97.9°C</td></tr> <tr><td>19</td><td>R42</td><td>58.7°C</td><td>76.8°C</td></tr> <tr><td>20</td><td>D5</td><td>69.7°C</td><td>86.9°C</td></tr> <tr><td>21</td><td>D43</td><td>56.8°C</td><td>74.7°C</td></tr> </tbody> </table>	NO	Position	ROOM AMBIENT Ta=25°C	HIGH AMBIENT Ta=45°C	1	RTH1	52.9°C	68.2°C	2	LF1	55.6°C	72.7°C	3	ZNR1	56.9°C	74.6°C	4	C1	57.8°C	75.7°C	5	LF2	60.0°C	78.0°C	6	BD1	62.7°C	80.7°C	7	Q1	63.5°C	81.6°C	8	C5	55.7°C	73.4°C	9	C40	62.9°C	80.5°C	10	T1coil	74.8°C	92.0°C	11	T1core	72.0°C	88.9°C	12	C106	64.8°C	81.1°C	13	C105	68.6°C	84.3°C	14	Q100	84.5°C	100.4°C	15	U2	51.0°C	68.7°C	16	U3	55.2°C	72.9°C	17	D40	62.4°C	79.9°C	18	R101	84.0°C	97.9°C	19	R42	58.7°C	76.8°C	20	D5	69.7°C	86.9°C	21	D43	56.8°C	74.7°C		
NO	Position	ROOM AMBIENT Ta=25°C	HIGH AMBIENT Ta=45°C																																																																																									
1	RTH1	52.9°C	68.2°C																																																																																									
2	LF1	55.6°C	72.7°C																																																																																									
3	ZNR1	56.9°C	74.6°C																																																																																									
4	C1	57.8°C	75.7°C																																																																																									
5	LF2	60.0°C	78.0°C																																																																																									
6	BD1	62.7°C	80.7°C																																																																																									
7	Q1	63.5°C	81.6°C																																																																																									
8	C5	55.7°C	73.4°C																																																																																									
9	C40	62.9°C	80.5°C																																																																																									
10	T1coil	74.8°C	92.0°C																																																																																									
11	T1core	72.0°C	88.9°C																																																																																									
12	C106	64.8°C	81.1°C																																																																																									
13	C105	68.6°C	84.3°C																																																																																									
14	Q100	84.5°C	100.4°C																																																																																									
15	U2	51.0°C	68.7°C																																																																																									
16	U3	55.2°C	72.9°C																																																																																									
17	D40	62.4°C	79.9°C																																																																																									
18	R101	84.0°C	97.9°C																																																																																									
19	R42	58.7°C	76.8°C																																																																																									
20	D5	69.7°C	86.9°C																																																																																									
21	D43	56.8°C	74.7°C																																																																																									
2	OVER LOAD BURN-IN TEST	NO DAMAGE 1 HOUR ( MIN )	I/P : 230 VAC O/P : 125%LOAD Ta : 25°C	TEST : OK																																																																																								
3	LOW TEMPERATURE TURN ON TEST	TURN ON AFTER 2 HOUR	I/P : 264VAC/100VAC O/P : 100%LOAD Ta= -35°C	TEST : OK																																																																																								
4	HIGH HUMIDITY HIGH TEMPERATURE HIGH VOLTAGE TURN ON TEST	AFTER 12 HOURS IN CHAMBER ON CONTROL 45°C/95 %R.H NO DAMAGE	I/P : 272 VAC O/P : FULL LOAD Ta= 45°C HUMIDITY= 95 %R.H	TEST : OK																																																																																								
5	TEMPERATURE COEFFICIENT	±0.03%/°C(0~45°C)	I/P : 230 VAC O/P : FULL LOAD	±0.0067%/°C(0~45°C)																																																																																								





30W AC-DC Reliable Wall-mounted  
Interchangeable Type Green Adaptor

NGE30 series

6	STORAGE TEMPERATURE TEST	-20~85°C	1. Thermal shock Temperature : -45°C~ +90°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 10 CYCLE 5. Input/Output condition : STATIC
7	THERMAL SHOCK TEST	-30~45°C	1. Thermal shock Temperature : -35°C~ +50°C 2. Temperature change rate : 25°C / MIN 3. Dwell time low and high temperature : 30 MIN/EACH 4. Total test cycle : 16 CYCLE 5. Input/Output condition : 15cycle:230V/ FULL LOAD AC ON 3sec/AC OFF 1sec TEST 1cycle:230V/ FULL LOAD Burn In Test
8	VIBRATION TEST	10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes	1 Carton & 1 Set (1) Waveform : Sine Wave (2) Frequency : 10~500Hz (3) Sweep Time : 10min/sweep cycle (4) Acceleration : 3G (5) Test Time : 180min in each axis (X.Y.Z) (6) Ta : 25°C
9	CAPACITOR LIFE CYCLE	SUPPOSE C105 IS THE MOST CRITICAL COMPONENT (1) I/P : 230VAC O/P : FULL LOAD Ta= 25°C LIFE TIME (2) I/P : 230VAC O/P : FULL LOAD Ta= 45°C LIFE TIME (3) I/P : 230VAC O/P : 75% LOAD Ta= 45°C LIFE TIME (4) I/P : 230VAC O/P : 50% LOAD Ta= 45°C LIFE TIME	(1) 132864HRS (2) 44749.7HRS (3) 77928.2HRS (4) 146304.1HRS
10	MTBF	Conducted by Parts Stress Analysis Prediction 1078.6 Khrs min. MIL-HDBK-217F (25°C) 7587.5 Khrs min.Telcordia TR/SR-332(Bellcore) (25°C)	
11	Ongoing Reliability Test	I/P : 230VAC O/P : FULL LOAD TA=50°C Demonstration Mean Time Between Failure : 30,000 hours	

TEST RESULT	TESTER	REVIEW	APPROVAL
PASS	Yuwei	Liutt	Wangdz

2020.10.1 TAG-QA-009