



The product described in this document has not been fully tested to ensure conformance to the requirements outlined below. Therefore, TE Connectivity (TE) makes no representation or warranty, express or implied, that the product will comply with these requirements. Further, TE may change these requirements based on the results of additional testing and evaluation. Contact TE Engineering for further details.

Title Qualification Plan for L001258-01

1. SCOPE

1.1. Content

This specification covers the performance, test and quality requirements for L001258-01.

1.2. Qualification

When tests are performed on the subject product line, procedures specified in Figure 1 shall be used. All inspections shall be performed using the applicable inspection plan and product drawing.

1.3. Qualification Test Results

Successful qualification testing on the subject product line has not been completed. The Qualification Test Report number will be issued upon successful qualification testing.

2. APPLICABLE DOCUMENTS AND FORMS

The following documents and forms constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

2.1. TE Documents

- Production Drawing of L001258-01
- 501-162042: Qualification Test Report

2.2. Industry Documents

- IEC 68-2-14
- MIL-STD-810G
- IEC 60068-2-27
- IEC 60529

3. REQUIREMENTS

3.1. Design and Construction

Product shall be of the design, construction, materials and physical dimensions specified on the applicable product drawing.

3.2. Test Requirements and Procedures Summary

Unless otherwise specified, all tests shall be performed at ambient environmental conditions.

Para.	TEST DESCRIPTION	REQUIREMENT	PROCEDURE
3.2.1.	Initial examination of product	Meets requirements of product drawing.	Visual, dimensional and electrical function per applicable inspection plan.
3.2.2	Final examination of product	Meets visual requirements.	Visual, dimensional and functional per applicable inspection.
ELECTRICAL			
3.2.3.	VSWR Data Collection	It should be in range of product drawing specification.	Measured VSWR with dedicated network analyzer.
MECHANICAL			
3.2.4.	Examination of product	Meets requirements of product drawings admit of appearances and their section to be not occurred the antennas performance damages as a special case.	No physical damage to cause antenna performance degradation.
ENVIRONMENTAL			
3.2.5.	Temperature cycling	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	IEC 68-2-14 -40°C to 85°C, 2 hour soak, 2°C /min ramp, 15 Cycles, ramp up from ambient at beginning of cycle.
3.2.6.	Water Ingress IPX7	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	IEC 60529 IPX7, submerge 1 meter deep, 30 minutes
3.2.7.	Dust Ingress IP6X	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	per IEC 60529, IP6x, Talc Powder, Vacuum
3.2.8.	Humidity	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	MIL-STD-810G, Method 507.5, Procedure II, Aggravated Humidity, 95%±4% relative humidity, 24 hour cycle, 5 cycles. ***1 Cycle: Ramp up from ambient temperature (23°C) to 60°C in 2 hr period. Remain at 60°C for 6 hours. Ramp down to 30°C in a 8 hour time period. Remain at 30°C for 8 hours. 24 hours total
3.2.9.	Thermal Shock	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	IEC 68-2-14 -25°C to +70°C, 1 hour soak, 5°/min minimum ramp, 5 Cycles, ramp up from ambient at beginning of cycle.

3.2.10.	Corrosive atmosphere (Salt Fog/Mist)	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	MIL-STD-810G, Method 509.5 5% Salt Solution, alternating 24 wet/24 dry for 2 cycles (total 96 hours), 35±2°C Temperature.
3.2.11.	Random Vibration	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	MIL-STD-810H, Method 514.8, Category 4 for Vertical, Transverse, Longitudinal (514.8C-1), 1hr per axis, 3 axis total.
3.2.12.	Mechanical Shock	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	IEC 60068-2-27, 50g, 11ms, 1/2 sine, 3 pulses in positive, 3 pulses in negative, 3 axis total, 18 pulses total.
3.2.13.	Wind Operational	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	100 MPH Physical loading of 0° orientation and 90° orientation
3.2.14.	Wind Survival	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	136 MPH, Physical loading of 0° orientation and 90° orientation Main Enclosure 5.5841 kg External Whip 0.2577 kg (0.5682 lbf) – Barracuda only
3.2.15.	Unpackaged Drop	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	Drop freely from a height of 1 meter
3.2.16.	Pull Test	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	Fix antenna and apply axial force (pull) of 20lbs on connector/cable for a duration of 30 seconds.
3.2.17.	Car Wash Water Intrusion	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	Fix antenna in mounting configuration and apply a pressure washer (2000-3000psi) stream, 90° vertical span nozzle, a distance of ~60cm from base. Spray in all angles around for a duration of 120 seconds.
3.2.18.	Whack for Whips and Mast (External Whip)	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	Fix antenna and strike 3/4" of a distance from the base of the antenna. 1500 strikes, 1 strike per second.
3.2.19.	Pull Test (External Whip)	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	Fix antenna and apply axial force (pull) of 15lbs on connector/cable for a duration of 1 minute
3.2.20.	Bend test (External Whip)	No physical damage allowed. (Meet 3.2.2) Meet VSWR (item 3.2.3)	3/4 of a Whip antenna total length from bottom, 2 second per cycle, total 500cycles


NOTE

Must meet visual inspection requirements, show no physical damage, and meet any of additional test requirements per specified in the Product Qualification and Requalification Test Sequence order shown in Figure 2

3.3. Product Qualification and Requalification Test Sequence order

TEST OR EXAMINATION	TEST (a)							
	1	2	3	4	5	6	7	8
	SEQUENCE ORDER OF TEST PROCESS (b)							
Initial Examination of Product	1	1	1	1	1	1	1	1
VSWR Data Collection	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4
Temperature cycling	3							
Water Ingress		3						
Dust Ingress			3					
Humidity				3				
Thermal Shock					3			
Corrosive atmosphere						3		
Random Vibration							3	
Mechanical Shock								3
Final Examination of Product	5	5	5	5	5	5	5	5
Test Sample Qty	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs

TEST OR EXAMINATION	TEST (a)							
	9	10	11	12	13	14	15	16
	SEQUENCE ORDER OF TEST PROCESS (b)							
Initial Examination of Product	1	1	1	1	1	1	1	1
VSWR Data Collection	2,4	2,4	2,4	2,4	2,4	2,4	2,4	2,4
Wind Operational	3							
Wind Survival		3						
Unpackaged Drop			3					
Pull Test				3				
Car Wash Water Intrusion					3			
Whack for Whips and Mast						3		
Pull test (External Whip)							3	
Bend Test (External Whip)								3
Final Examination of Product	5	5	5	5	5	5	5	5
Test Sample Qty	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs	2 pcs

NOTE


(b) Number in table indicates the sequence order of the test process.

4. HISTORY

LTR	REVISION RECORD	PREPARED BY	APPROVED BY	DATE
A	Initial release	Tan, Lay Chin	Tan, Yen Siang	07Jul 2025