

English Language Test Description

Contract Number: N00244-09-C-0054

For

Unit Under Test

UUT Nomenclature: Conference Accumulator CCA

UUT Part Number: 2618577-1

UUT Reference Designator: CON A7

From

Assault Amphibious Vehicle
AN/PSM-115

ATE (Automated Test Equipment) SYSTEM

AN/USM-657B(V)2 Third Echelon Test System (TETS)

AN/USM-717(V)2 Virtual Instrument Portable Equipment Repair / Tester (VIPER/T)

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1. Introduction

The Unit Under Test (UUT) for this English Language Test Description (ELTD) is the Conference Accumulator Circuit Card Assembly (CCA), Part Number 2618577-1. The CCA is reference designator CON A7 in the Controller C-10879/MSQ-115 Line Replaceable Unit (LRU) part number 2618506-1. The LRU resides in the Assault Amphibious Vehicle (AAV) Weapon System.

1.1. Scope

An ELTD is a detailed supplementary document consisting of textual test descriptions with graphical representation of signal interconnectivity and a functional flow chart.

1.2. Purpose

The purpose of this document is to provide English language test descriptions for the TP_AAV_CON_A7 test program, to a level of detail used for maintenance purposes. The TP_AAV_CON_A7 test program makes up part of the AN/PSM-115 Application Program Set (APS).

1.3. Content Arrangement

The document is laid out in the sequence the Test Program Set (TPS) would be executed when a 95 "Run All Mods" is entered in the main menu. A paragraph at the beginning of each module will describe the test description for that module. Each step will contain a description for that particular test followed by a graphical representation of the connections made from the receiver, through the Interface Test Adapter (ITA) and cable W10 to the Conference Accumulator CCA. A Functional Flow Chart resides at the end of the document.

2. English Language Test Description (ELTD)

WEAPON SYSTEM: Assault Amphibious Vehicle (AAV)

UNIT UNDER TEST: 2618577-1

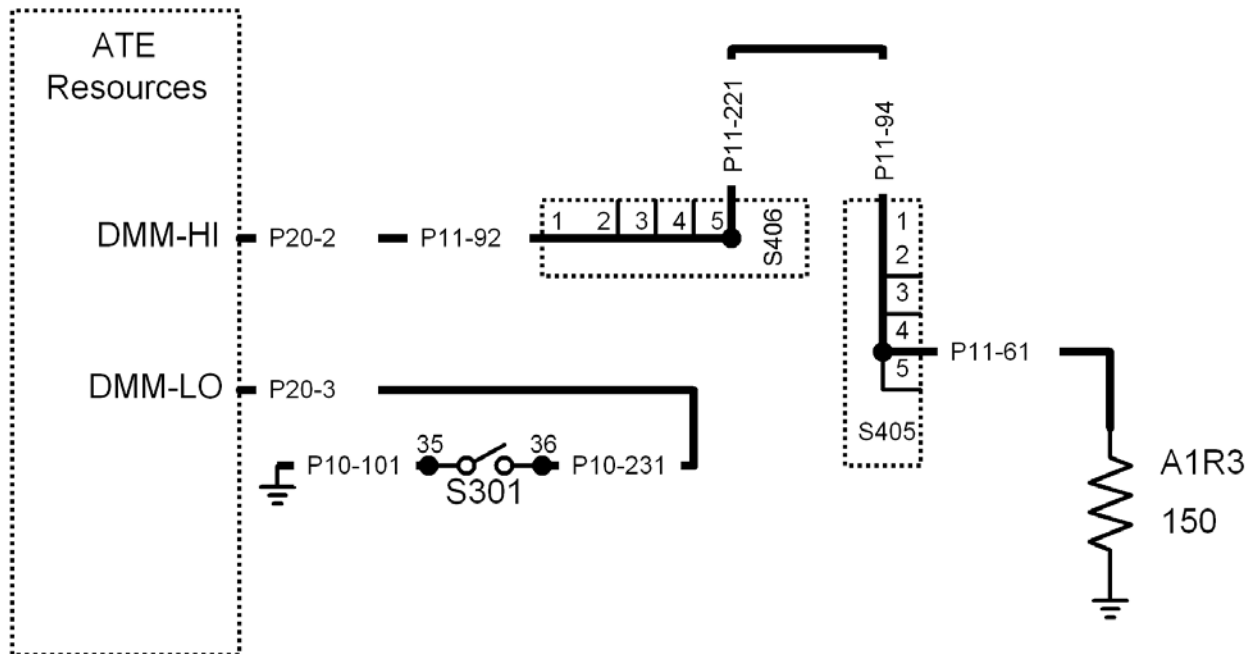
TEST PROGRAM SET: TP_AAV_CON_A7

SAFE TO TURN ON TESTS

Step 1 ITA Identification.

Test step 1 verifies the correct ITA is installed by using the DMM to measure the resistance of ITA A1R3. The resistance should be from 149 ohms to 155 ohms.

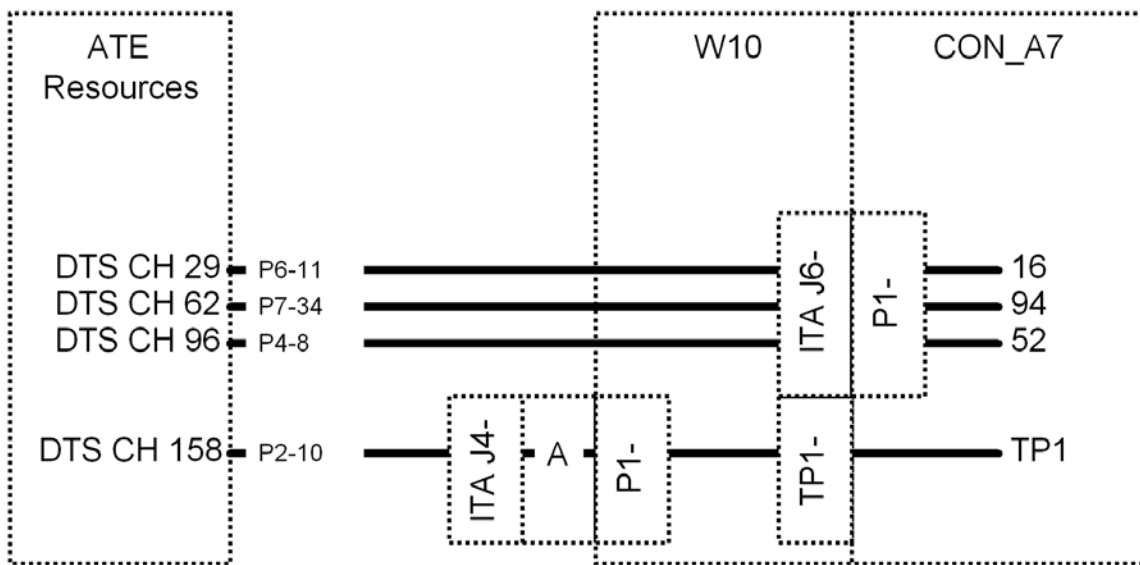
Connection Path as follows:



Step 2 UUT Identification.

Test step 2 verifies the correct UUT is connected to the ITA by setting the DTS active load pull-ups to 5V by applying 1mA to P1-52, P1-94, and TP-1. A Logical LO is applied to P1-16 and there is a brief pause to allow for propagation. Then P1-94 and P1-52 are verified to be greater than 2.5 Vdc (logical HI) and TP-1 is verified to be less than 2.0 Vdc (logical LO).

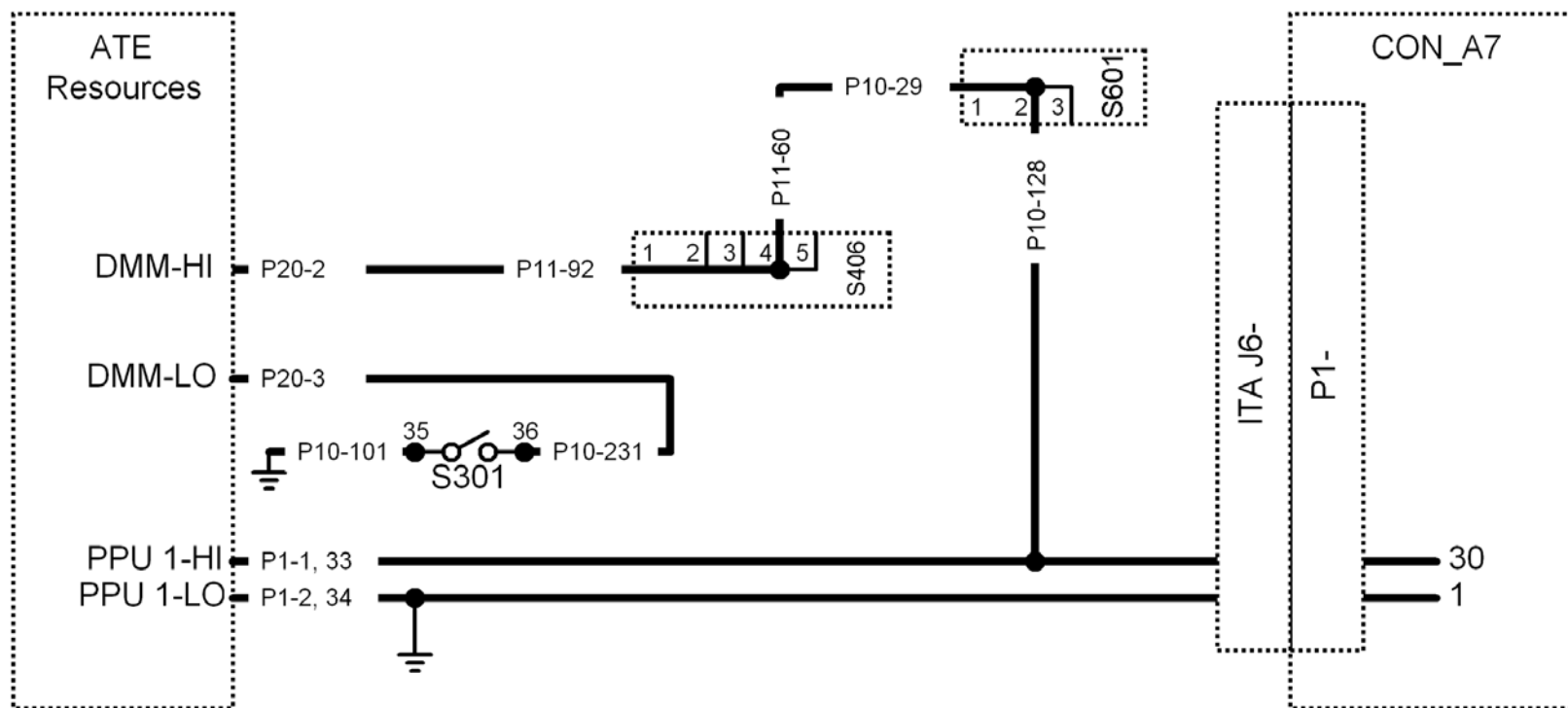
Connection Path as follows:



Step 3 +5 VDC STTO

Test step 3 verifies the +5 Vdc is safe to apply power by connecting PPU1 to the UUT but only applying +1.0 Vdc at 0.1 A. The DMM is used to measure the voltage from P1-30 to GND. The voltage should be from 0.75 Vdc to 1.1 Vdc. If an overload condition is present PPU1 will exceed its current limit and turn off before the measurement causing the test to fail.

Connection Path as follows:



UUT POWER UP

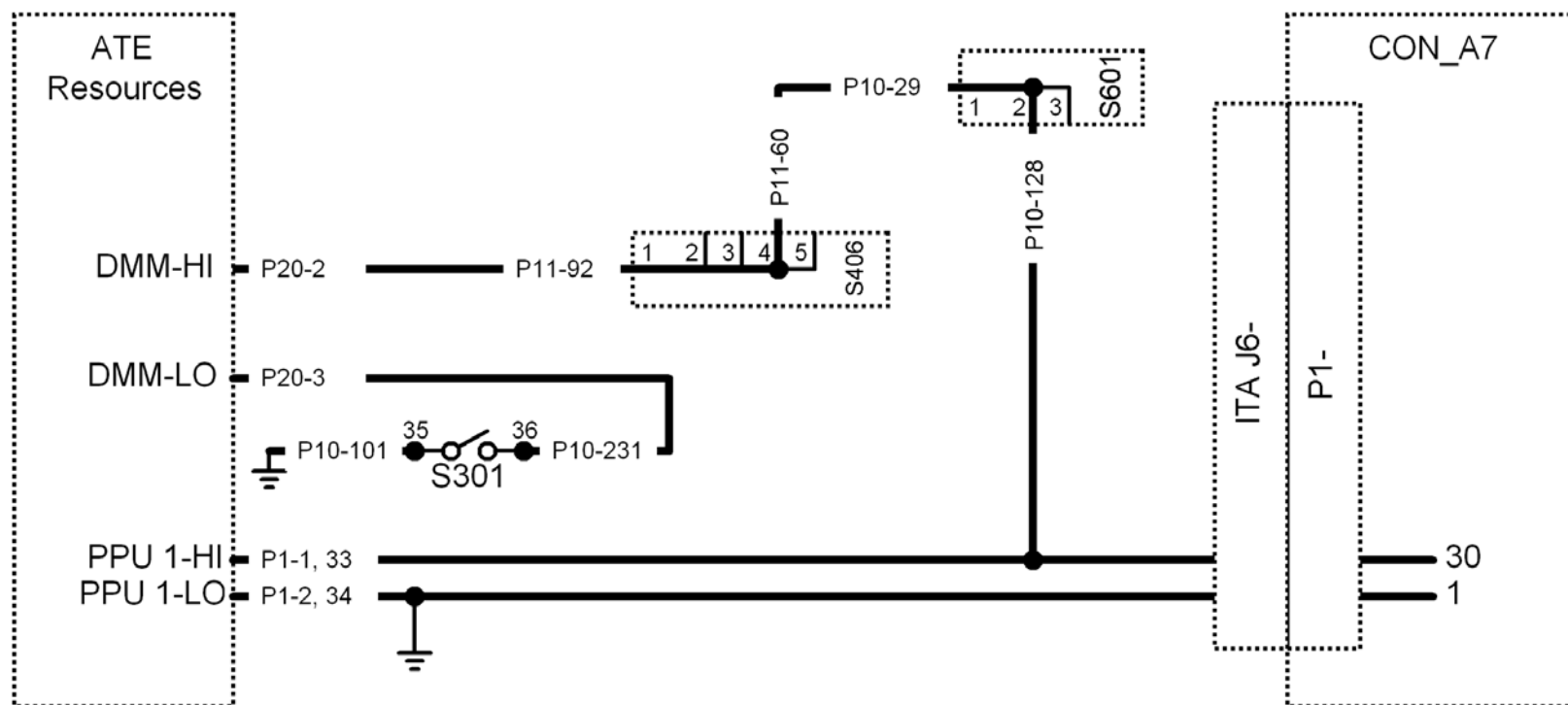
+5 Vdc at 3.0 A with a tolerance of ± 0.3 Vdc is required to power the UUT.

UUT POWER UP TESTS

Step 4 +5 VDC Power Up Test

Test step 4 verifies PPU1 can deliver +5 Vdc to the UUT by using the DMM to measure the voltage between P1-30 and GND. The voltage should be from 4.7 Vdc to 5.3 Vdc. PPU1 remains connected to the UUT for the remainder of testing.

Connection Path as follows:



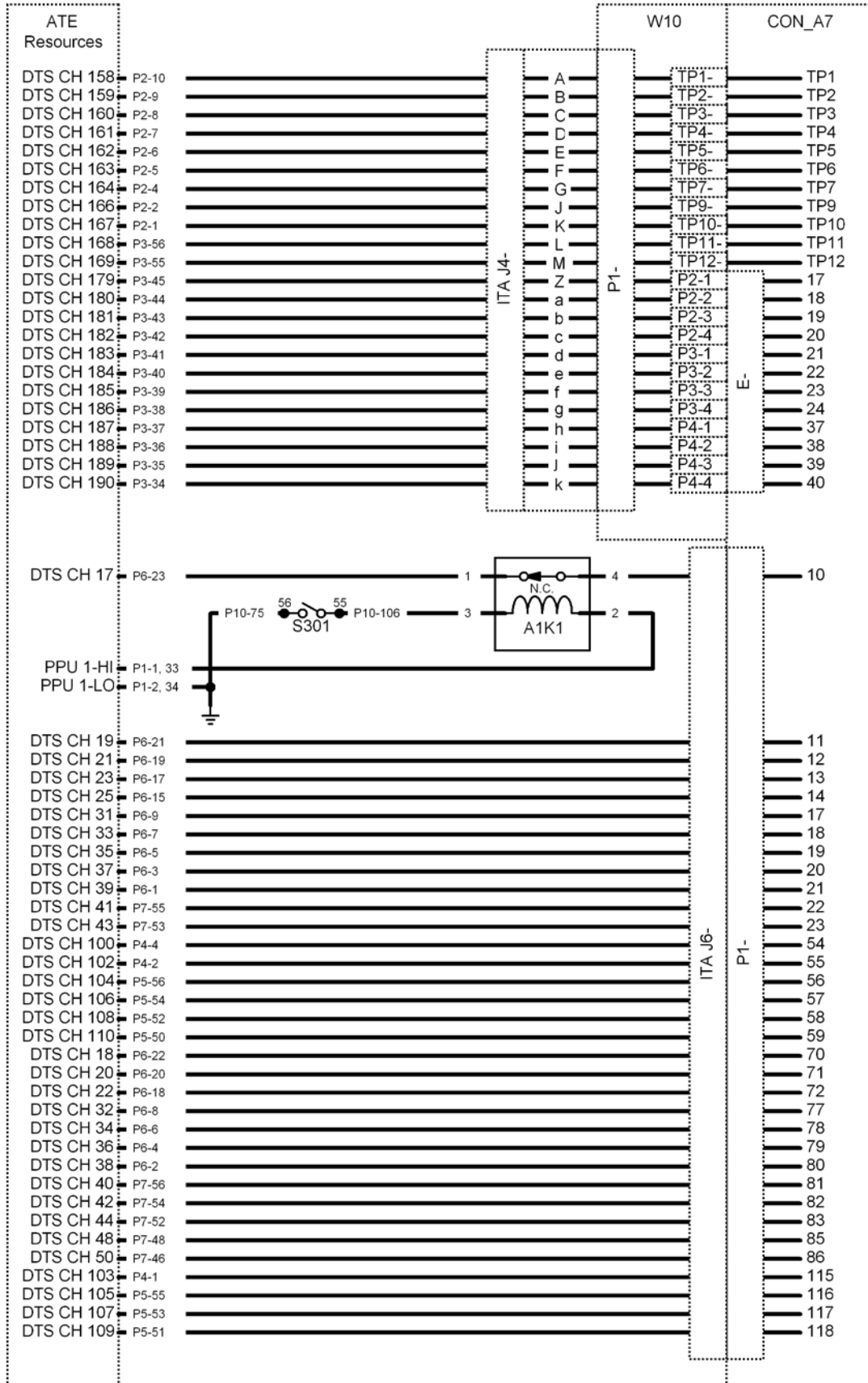
MODULE 1 LASAR DIGITAL TEST

Module 1 verifies the functionality of 97.58% of the UUT circuitry sans the Vcc filter capacitors. Test Step 101 is generated using a digital simulation and fault analysis tool called LASAR. The test data stored in these test files in conjunction with an external software diagnostic algorithm called M9-Series Diagnostics, will facilitate guided probe diagnostics seeded by fault dictionary diagnostics. LASAR processing generates detailed information about the quality of fault detection that is given by a particular test including a list of detected faults and statistics of percent detection. The LASAR Judge listing states that the highest detecting pattern is 311 out of 1,451. However, these patterns were extracted from the provided Production Test Requirements DWG 6227535 and may be needed to test internal complex functions of the six AM2901 ALU ICs. Internal component elements are not fault-simulated.

Step 101 LASAR Test

Test step 101 verifies the functionality of most of the UUT by connecting the input and output pins to digital channels and running the digital test file CON_A7.DTB. One connection made, DTS Channel 17 to P1-10, is connected via A1K1. This is a relay that is Normally Closed (N.C.) and provides a direct connection when A1K1 is not energized. The test should pass without any errors.

Connection Path as follows:



FUNCTIONAL FLOW CHART (FCC)

