MILITARY SPECIFICATION

Tactical Navigation Set AN/ASN-123, Ground Support Equipment.
Electronic Systems Test Set, AN/ASM-614

This Specification is approved for use by the Naval Air Systems
Command, Department of the Navy and is available for use of
all departments and agencies of the Department of Defense.

1.   SCOPE

   1.1   Scope - The Test Set covered by this specification
shall be for intermediate (shop) use and shall perform end-to-end test-
ing and fault isolation of all individual WRAs (Weapon Replaceable
Assembly) of the TACNAV Set by simulating stimuli experienced in the
operational environment and comparing responses to predetermined stored
data. Fault isolation will be to the SRA (Shop Replaceable Assembly)
level.

   1.2   Classification - This Test Set is a type II (new
design) class 4, style D of MIL-T-28800. The equipment covered by this
specification shall consist of the following items:

Nomenclature	Reference Paragraph
Test Set, AN/ASM-614. Consisting of the following:	
Test Unit, AN/ASM-614	3.6.1

Beneficial comments (recommendations, additions, deletions) and
pertinent data which may be of use in improving this document
should be addressed to: Engineering Specifications and Standards
Department (Code 93), Naval Air Engineering Center, Lakehurst, NJ
08733, by using the self-addressed Standardization Document Improve-
ment Proposal (DD Form 1426) appearing at the end of this document
or by letter.

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Nomenclature	Reference Paragraph
Associated Interconnect Cables AN/ASM-614	3.6.5
Transit Case, AN/ASM-614	3.6.2
Self Test Fixture, AN/ASM-614	3.6.3
Panel Holding Fixture AN/ASM-614	3.6.4

1.3   Associated Equipment - None required for normal operation.

2.   APPLICABLE DOCUMENTS

2.1   Issues of documents. The following documents of the issue in effect on date of invitation for bids or requests for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Military

MIL-D-1000   Drawings, Engineering and Associated Lists

MIL-C-4150   Case, Transit and Storage, Waterproof and Water-Vapor-Proof

MIL-A-8421   Air Transportability Requirements, General Specification for

MIL-E-15090   Enamel, Equipment, Light-Gray (Formula No. 111)

MIL-E-17555   Electronic and Electrical Equipment and Associated Repair Parts, Preparation for Delivery of

MIL-T-18303   Test Procedures; Preproduction, Acceptance, and Life For Aircraft Electronic Equipment, Format for

MIL-N-18307   Nomenclature and Identification for Electronic Aeronautical and Aeronautical Support Equipment Including Ground Support Equipment

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SPECIFICATIONS

Military (cont'd)

MIL-T-28800	Test Equipment for Use with Electrical and Electronic Equipment, General Specification for

STANDARDS

Military

MIL-STD-129	Marking for Shipment and Storage
MIL-STD-143	Standards and Specifications, Order of Precedence for the selection of
MIL-STD-454	Standard General Requirements for Electronic Equipment
MIL-STD-461	Electromagnetic Interference Characteristics Requirements for Equipment
MIL-STD-462	Electromagnetic Interference Characteristics, Measurement of
MIL-STD-471	Maintainability Demonstration
MIL-STD-781	Reliability Tests, Exponential Distribution
MIL-STD-794	Parts and Equipment, Procedures for Packing and Packaging of
MIL-STD-810	Environmental Test Methods
MIL-STD-965	Parts Control Program
MIL-STD-1399/103	Interface Standard for Shipboard Systems, Section 103
MIL-STD-1472	Human Engineering Design Criteria for Military Systems, Equipment and Facilities
MS17322	Meter, Time Totalizing, Miniature, Digital 115 Volt, 400 Hz
NAVAIR 16-1-525	Avionics Preferred Common Ground Support Equipment

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(Copies of specifications, standards, drawings and publications required by contractors in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3.   REQUIREMENTS

3.1   Selection of Parts and Materials. Selection of parts and materials shall be in accordance with MIL-STD-965. Preferred standard parts and materials are items conforming to documents listed herein, and items covered by documents specified as standard in MIL-T-28800. Parts and materials shall be procured from QPL sources when they exist. Nonstandard parts and materials must be equivalent to or better than similar standard parts and materials. When the approved parts list fails to provide an applicable specification or standard, the contractor shall use other established specifications or standards in the order of precedence set forth in MIL-STD-143. Parts and materials selected from other than those specified in the approved parts list are not standard. Approval must be obtained prior to their use in test sets. Each vendor source for a nonstandard part or material, requires approval. When a non-standard part is used where a suitable standard part exists, the contractor shall reference the standard part on the drawing, parts lists, or data package, and the installation shall provide for replacement with the standard part.

3.1.1   Requests for approval of nonstandard parts. The data to be submitted with the request for approval of nonstandard parts shall be in accordance with the terms of the contract.

3.1.2   Commercial utility parts Commercial utility hardware parts, such as screws, bolts, nuts, cotter pins, etc., may be used, provided they have suitable properties and are replaceable by standard parts without alteration.

3.2   Design and Construction - The Test Set shall be in accordance with the provisions of MIL-T-28800, Type II (new design), Class 4, Style D. It shall be of ruggedized design and construction.

3.2.1   Total Weight - The total weight of the Test Unit shall be a minimum consistent with good design and shall not exceed 100 pounds.

3.2.2   Modules, Maintenance - The Test Set shall be divided into maintenance modules as specified in MIL-T-28800. Modules shall normally be considered repairable.

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3.2.3   Time Totalizing Meter - The Test Unit shall contain a time totalizing meter conforming to MS17322. A time totalizing meter shall be included in the following units:

Unit	Type of Meter
Test Unit	MS17322

3.2.4   Cables and Connectors - The Test Unit shall provide for the use of cables and connectors in accordance with MIL-T-28800, Type II equipment. All connectors shall be mounted along the side or lower edge of the front panel and in no case shall their location be such that the connecting cables will interfere with the operating controls.

3.2.4.1   Cabling - The Test Unit cabling shall be compatible with the equipment to be tested.

3.2.4.2   External Connectors - The external connectors shall be as specified in the contract.

3.2.5.   Controls

3.2.5.1   Power - The power control shall be the Test Set ON/OFF power switch as specified in the contract.

3.2.5.2   Program Control - The program control shall provide for a Go, No-Go, Continue and Restart operation as specified in the contract.

3.2.5.3   Data Entry - The data entry controls shall contain provisions for a 0 through 9, "Clear", and Enter".

3.2.6   Human Engineering - Human engineering shall be in accordance with MIL-STD-1472.

3.3   Availability - The availability shall be a minimum of 99 percent when calculated using the results of the Reliability and Maintainability Analysis of paragraphs 3.3.1 and 3.3.2 of this specification as follows:

$$\text{Availability} = \frac{\theta}{\theta + \bar{M}_{ct}}$$

Where: θ is the observed Mean-Time-Between-Failure (MTBF) equal to the total operating time of the equipment divided by the number of failures, as defined in MIL-STD-781;

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add: $\bar{M}_{ct}$ is equal to the Mean Corrective maintenance downtime, as defined in MIL-STD-471.

3.3.1   Reliability - When specified in the contract a reliability program shall be conducted to ensure a design oriented reliability effort consisting of the following, and data shall be in accordance with UDI-R-2113 (See 6.4.15)

    a.   An audit of the proposed design including the application of parts verified by a Reliability Prediction Study.

    b.   Failure analysis of all test failures with appropriate recommendations for corrective actions to insure compliance with the reliability requirements.

    c.   Testing subsequent to the test producing a failure shall be monitored to insure the effectiveness of the corrective actions taken.

    d.   Monthly status reports with failure summaries shall be prepared highlighting problem status and resolution.

    e.   The Reliability and Maintainability Program Plan shall include details for the implementation of the reliability program.

3.3.1.1   Operating Stability - The Test Unit shall be designed to operate as specified for not less than 2000 hours or six months, whichever comes first, without scheduled maintenance, realignment, or adjustment of any control not readily accessible to the operator during normal operation with the exception of magnetic head cleaning and air filters.

3.3.1.2   Operating Life - The Test Unit shall have a minimum total operating life of 25,000 hours. Parts requiring scheduled replacement due to wear during the life of the equipment, and the wear out life of such parts, shall be determined by the contractor and submitted to the procuring activity.

3.3.1.3   Reliability in Mean-Time-Between-Failure (MTBF) -The Test Unit shall have a specified MTBF of 500 hours. Failures shall be as defined in paragraph 3.3.2.

3.3.2   Maintainability - The contractor shall conduct a maintainability program in accordance with MIL-T-28800 with the exception that fault isolation shall be to the SRA level only.

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Failures of the Test Unit shall be divided into the following categories:

I   Faults which prevent program execution.

II   Computer faults which may be isolated with commercially supplied diagnostic programs.

III   Faults in contractor designed assemblies and commercial units which are controlled by the contractor designed interface.

Category I faults shall be isolated using applicable procedures and common ground support equipment existing in I-level maintenance shops.

Category II faults shall be automatically isolated to a functional area within the computer with the commercially supplied diagnostic programs.

Category III Faults shall be automatically isolated to the SRA or sub-SRA as defined in MIL-T-28800 or to the end item of commercial equipment.

3.3.2.1 <u>Maintenance Times</u> - The Test Unit, including any built-in provisions, shall be designed to meet the following quantitative maintainability requirements for corrective maintenance at the intermediate level.

a.   Mean time to repair, $\overline{M}_{ct}$ 45 minutes.

b.   Maximum time to repair, $M_{max\ ct}$ 90 minutes (at the 90th percentile).

3.3.2.2 <u>Maintenance Manhours Per Maintenance Action</u> - The total maintenance manhours per maintenance action shall not exceed 2.25 hours at the intermediate level when conducted in accordance with 4.3.2.1 of this specification.

3.3.3 <u>Probability of Successful Performance of Specified Test (Compatibility)</u> - The probability of successful performance during a complete test shall be a minimum of 93 percent. The probability of successful performance of a complete test of the avionic equipment to be tested by this support equipment shall include:

(a)   not detecting a failure in the avionic equipment to be tested

(b)   indicating a nonexistent failure in the avionic equipment to be tested

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(c) the probability of causing a failure in the avionic equipment to be tested

(d) the probability that a failure in the avionic equipment under test will cause a failure in the support equipment (except for a protective device).

3.3.4   Electromagnetic Compatibility   The unit shall meet the requirements of MIL-STD-461 for class IC equipment, (See 4.5.1).

CAUTION

The requirements of this specification are substantially in excess of the requirements of RS03 of MIL-STD-461. It is therefore considered mandatory that these requirements are fully understood before establishing basic designs.

3.3.5   Maintenance Provisions and Field Testing - The Test Unit shall be modularized and all contractor designed electronics shall be packaged into discrete replaceable modules. Adequate test points shall be provided at a connector in accordance with MIL-T-28800.

3.3.5.1   Standard Test Equipment - It shall be possible to isolate faults in the Test Set using only the self-test features and test equipment normally available in intermediate level avionics shops. (General purpose test equipment selected from NAVAIR 16-1-525.)

3.3.6   Nomenclature and Nameplates - Nomenclature assignment and nameplate approval for Test Set identification shall be in accordance with MIL-N-18307.

3.3.7   Service Conditions   Service conditions (environmental) shall be in accordance with MIL-T-28800, Type II, Class 4, Style D with exceptions as herein specified.

3.3.7.1   Altitude - 0 - 10,000 ft. operating.

3.3.7.2   Shock, Mechanical (Nonoperational) - The Test Unit shall meet the requirements of 4.5.2 after being tested in accordance with Paragraph 4.4.1 of this specification.

3.3.7.3   Vibration   The Test Unit shall meet performance requirements when subjected to a 2 g vibration level 5-55 Hz for 45 minutes while operating out of the transit case.

3.3.7.4   Humidity - The humidity requirement of MIL-T-28800 does not apply.

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3.3.7.5   Salt Atmosphere   The salt atmosphere requirement of MIL-T-28800 does not apply.

3.3.7.6   Sand and Dust   The sand and dust requirement of MIL-T-28800 does not apply.

3.3.7.7   Temperature Altitude - 40°C, 0 to 10,000 feet.

3.3.7.8   Bench Handling - The Test Unit shall meet performance requirements after being subjected to the bench handling test in accordance with MIL-STD-810, Method 516 Procedure V.

3.3.7.9   Acoustical Noise - The Test Unit enclosure shall be designed to minimize self-generated noise of fans and motors and shall conform to MIL-T-28800.

3.3.8   Standard Conditions - The following conditions shall be used to establish normal performance characteristics under standard conditions and for making laboratory bench tests.

Temperature:	25°C ±5°C
Altitude:	0 to 4,000 ft.
Vibration:	None
Humidity:	Up to 75% without condensation.
Input Power Voltage	115V ± 10%, 3 phase, WYE 400 Hz±5% and +28V DC ± 10%.

3.4   Transportability - The Test Set shall be air transportable in accordance with MIL-A-8421.

3.5   Performance Characteristics   The performance characteristics of the Test Unit shall be as defined in Appendix A of this specification.

3.5.1   Test Capabilities - The Test Unit shall perform complete end-to-end confidence testing (certified RFI) and automatic fault isolation to the SRA level for each WRA of the TACNAV Set (Navigational Computer CP-1282/ASN-123, Computer Control C-10155/ASN-123, Control-Indicator C-10156/ASN-123, and Digital Display Indicator IP-1263/ASN-123).

3.5.1.1   Executive Software System - The executive software system provides interactive control of the Test Unit by means of the keyboard and Test Unit display. It shall control:

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a. The loading and execution of WRA test programs

b. The loading and execution of the Test Unit self test program

c. The loading of the TACNAV tactical program into the UUT (Unit Under Test) computer

d. The verification of the contents of the UUT computer memory

A PROM bootstrap loader shall automatically load the executive program from the cassette into the lower 8K portion of the Test Unit memory when power is applied to the Test Unit. Upon completion of the Bootstrap load, a select function message shall be displayed in the English message display. The operator can then select the desired function via the keyboard.

3.5.1.1.1 Executive Software Functions - The Test Unit shall have seven functions selectable by the operator and controlled by the executive program. The seven functions are as follows:

Computer Control WRA Test

Control Indicator WRA Test

Display WRA Test

Navigational Computer WRA Test

Memory Fill (Navigational Computer)

Memory Verify (Navigational Computer)

Test Unit Self Test

3.5.1.1.2 Executive Software Operation - Figure 1 is a flow chart of the interaction between the executive software and test programs. When the executive routine is loaded and the operator selects a test mode, the executive program shall examine the keyboard, determine the test selected, and search the cassette file for the appropriate test program. The selected test program shall be read into the Test Unit memory and control of the Test Unit shall be transferred to the test program. Upon completion of the test, the Test Unit control shall be returned to the executive program and the Test Unit display can again be monitored for subsequent test selection.

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3.5.2   Stimuli and Response - The   Test   Unit   shall
provide sufficient UUT simulation of stimuli experienced in the opera-
tional environment and will compare UUT responses to predetermined test
criteria to establish RFI condition or defective SRA.

3.5.3   Tactical Program - The Test Unit shall provide
the capability to load the tactical program into the Navigational Com-
puter or to verify contents of the computer memory to the word level.

3.5.4   Operator Cueing - Operator   cueing   for   all
actions and observations are provided on the Test Unit English language
message display.

3.5.5   Operator Interface - Operator   interface   with   the
Test Unit is provided by a standard numeric keyboard, four mode control
switches and the Test Unit power control switch as defined in paragraph
3.6.1.5 of this specification.

3.5.6   Self-Test - Test Unit self-test is achieved by means
of the self-test fixture, associated interconnecting cable(s) and diagnos-
tic program provided with the Test Unit.

3.5.7   Output voltages and pin data - As listed in Appendix A.

3.5.8   Electrical Power Source - The Test unit shall operate
from a nominal 115V, 3 phase WYE, 400 Hz source.   The steady-state
voltage-tolerence shall be 115V ±10%.   The steady-state frequency shall
be 400 Hz ±5%. The test unit maximum power consumption shall not exceed
500 watts.

3.5.8.1   Protection - Faults in the unit under test shall not
disable the test unit. The test unit shall be capable of withstanding
input power variations as imposed by abnormal electric system operations
defined as follows:

3.5.8.1.1   Transient State Conditions - Transient   condi-
tions to be in accordance with MIL-STD-1399. Momentary (less than 30
seconds) impairment of operation during transients is permissible, but
the transient shall not prevent resumption of normal operation. Altera-
tion of equipment characteristics after the transient shall not occur
due to the following:

      a.   Voltage transients of ±23 percent of the nominal which
            recover to the nominal within 250 ms.

      b.   Frequency transients of ±3 percent of which not more than
            one percent is outside the steady-state frequency toler-
            ance band and recover to within this band within 250 ms.

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3.5.8.1.2   Interruption of Source Power - Voltage or frequency excursions which are no greater than 600V, 10 microsecond duration shall not cause damage to the equipment or alteration of equipment characteristics.

3.5.9   Warmup Time - The time required for the Test Unit to warm up prior to operations shall be kept to a minimum and shall not exceed 5 minutes under standard conditions.

3.6   Detail Requirements

3.6.1   Test Unit - The Test Unit shall meet the following requirements.

3.6.1.1   Function - The Test unit shall perform end-to-end testing and fault isolation in accordance with MIL-T-28800 of all individual WRA's of the TACNAV set by simulating stimuli experienced in the operational environment and comparing responses to predetermined test criteria.   In the event an out-of-tolerance condition is detected, the operator will be cued via a precise English instruction on the action to be taken.   Each test performed will result in a decision of either Ready for Issue (RFI) or a Remove and Replace statement with the suspected SRA explicitly defined.   Where the malfunction cannot be uniquely isolated to a single SRA, a group of SRA's shall be specified in the order of probable failure.   The Test Unit shall be capable of self test to the SRA level when connected to the self test fixture.

3.6.1.2   Form Factor - The Test Unit dimensions shall be within 12"H x 26"W x 18"D.

3.6.1.3   Weight - The weight of the Test Unit shall not exceed 100 pounds.

3.6.1.4   Content - The Test Unit shall contain the following subassemblies and functional circuits.

3.6.1.4.1   Subassemblies

3.6.1.4.1.1   Computer - The computer will be a PDP-11/40 Emulator with at least 16K memory.   The computer shall feature the full range of PDP-11/40 arithmetic and logic processing instructions.

3.6.1.4.1.2   Panel Display - The panel display shall be capable of displaying at least 480 characters.

3.6.1.4.1.3   Power Supplies - The following voltages shall be provided for Test Unit power and UUT power by the test unit power supply:

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Table I.   Regulated Output Characteristics

Nominal Regulated Output Voltage (VDC)	Load (Amps)			Power (W)	
	Min.	Max.	Nom.	Min.	Nom.
+5	0.1	1.3	1.0	0.5	5.0
+5	2.7	35.0	30.0	13.5	150
+15	0.1	1.6	1.2	1.5	18
-15	0.1	1.6	1.2	1.5	18
+12	0.3	3.6	2.6	3.6	31
-12	0.1	1.2	0.9	1.2	11
+6	0.04	0.46	0.35	0.24	2
-6	0.06	0.78	0.6	0.36	4
-5	0.1	1.2	0.9	0.5	5
-250	0.03	0.39	0.3	7.5	75

3.6.1.4.2   Functional Circuits - The following functional circuits shall be mechanized on SRA's.

3.6.1.4.2.1   Central Processor I/O Logic

Decodes emulator addresses.

Multiplexes input data to emulator.

Provides search address and phase equal conditions to strobe TACNAV processor data.

Provides interrupt control.

Provides emulator interface to keyboard and mode control switches.

3.6.1.4.2.2   Magnetic Tape Cassette I/O Logic

Provides interface between magnetic tape cassette and Test Unit computer.

3.6.1.4.2.3   Message Display I/O Logic

Provides interface between display and Test Unit computer.

3.6.1.4.2.4   Analog Simulation and Sampling Circuitry

Provides AC analog and synchro simulation utilizing D/A and D/S converters.

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Measures synchro outputs from Navigational Computer and converts to digital format using S/D converters.

Provides A/D conversion for Digital Display Indicator signal and measures power supply voltages.

Provides A/D conversion for panel hook slew voltages.

3.6.1.4.2.5   Digital and Discrete I/O Logic

Provides serial data output and formats serial data inputs for Test Unit computer processing.

Provides discrete signals to the Navigational Computer.

Detects and level shifts discrete outputs from the Navigational Computer for Test Unit computer processing.

3.6.1.4.2.6   Test Connector Sampling Logic

Shall provide registers to latch Navigational Computer internal data at real time rates for Test Unit computer comparison tests.

Shall capture Navigational Computer A/D control logic changes at real time rates.

3.6.1.4.2.7   Computer Control and Control-Indicator I/O Logic

Shall simulate Navigational Computer serial and parallel input to panels.

Shall strobe panel serial and parallel data outputs and formats data for Test Unit computer processing.

3.6.1.4.2.8   Display Control and Sampling Logic

Shall control discrete inputs to display.

Shall capture digital and analog display data at real time rates.

3.6.1.5   Controls

3.6.1.5.1   Keyboard - Solid state numeric keyboard. Twelve (12) keys in a 3 x 4 array legended 0 through 9, CLR and ENTER shall provide direct communication with the Test Unit computer for data entry and test selection.

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3.6.1.5.1.1   Numeric Keys - The numeric keys legended 0 through 9 shall provide data entry and test selection capability to the operator. The selected number shall be enhanced on the message display prior to entry into the Test Unit computer.

3.6.1.5.1.2   ENTER Key - The ENTER Key shall provide the operator with the means to enter desirable data to be processed by the Test Unit computer.

3.6.1.5.1.3   CLEAR Key - The CLEAR Key shall provide the operator with the ability to remove keyboarded data in the event of an entry error.

3.6.1.5.2   Program Control - Four switches legended GO, NO-GO, CONTINUE and RESTART shall provide the operator with decision control.

GO is depressed subsequent to an operator observation when all conditions meet the specified requirements. The test continues along the GO path.

NO-GO is depressed subsequent to an operator observation which does not meet the specified requirements. The test is then terminated with a remove and replace statement displayed.

CONTINUE is used in two modes of operation.

1.   During memory fill and memory verify CONTINUE is depressed once the tactical program cassette has been loaded into the cassette reader unit to begin the selected function.

2.   During certain tests the operator is allowed to bypass faults by depressing CONTINUE. The fault is flagged when CONTINUE is depressed and then displayed upon completion of all tests, but the test program continues. In every case where the operator has the option of selecting CONTINUE this option is specified on the English language display.

RESTART is depressed when the operator desires to restart the test sequence.

3.6.1.5.3   Power Control - Test unit power control is enabled by circuit breaker switches, legended Test Set Power, 115VAC ON/OFF and 28VDC ON/OFF. UUT power is enabled by program control, which sends discretes to the Test Unit computer.

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3.6.1.6 <u>Electrical Cables</u> - Cable assemblies and connectors shall be as specified in the contract. (See 6.7).

3.6.2 <u>Transit Case, Test Set</u> - The Test Unit shall be provided with a water tight enclosure which shall provide protection for the Test Unit against shock, vibration, and deterioration from environmental conditions which may be encountered during storage and shipment. This style enclosure is suitable for storage in exposed areas.

3.6.2.1 <u>Size</u> - The size shall be as specified in the contract.

3.6.2.2 <u>Transit Case Cover, Test Set</u>

3.6.2.2.1 <u>Size</u> - The size shall be as specified in the contract.

3.6.2.3 <u>Material</u> - Shall be aluminum

3.6.2.4 <u>Finish</u> - Shall conform to MIL-E-15090, light gray, formula number 111, Type III, Class 2.

3.6.2.5 <u>Storage</u> - Shall store Test Unit, cables, manuals, self-test fixture, and panel holding fixture.

3.6.3 <u>Self-Test Fixture, Test Set</u> - The self-test fixture shall contain circuitry and interface connectors to perform a wraparound test of the Test Unit and its interface harness. Active devices, if required, shall be limited to a single replaceable SRA and shall be isolated by the self-test diagnostic program if one fails.

3.6.3.1 <u>Size</u> - The size shall be as specified in the contract

3.6.3.2 <u>Material</u> - Shall be aluminum.

3.6.3.3 <u>Finish</u> - Shall be MIL-E-15090, light gray, formula number 111.

3.6.3.4 <u>Storage</u> - The self-test fixture shall be stored in the transit case.

3.6.4 <u>Panel Holding Fixture</u> - The panel holding fixture shall provide a mounting surface for the panel UUT's.

3.6.4.1 <u>Size</u> - The size shall be as specified in the contract.

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3.6.4.2   <u>Material</u> - The material shall be as specified in the contract.

3.6.4.3   <u>Finish</u> - The finish shall be as specified in the contract.

3.6.4.4   <u>Storage</u> - The panel holding fixture shall be stored in the transit case.

3.6.5   <u>Associated Interconnect Cables</u>

3.6.5.1   <u>Size</u> - The associated interconnect cables shall be a minimum of 1.5 feet.

3.6.5.2   <u>Material</u> - The material of the associated interconnect cables shall be as specified in the contract.

3.6.5.3   <u>Storage</u> - The interconnect cables shall be stored in the transit case.

3.7   <u>Dimensions</u> - The Test Set maximum overall size shall not exceed dimensions specified in the contract.

3.8   <u>Finish</u> - Shall conform to MIL-E-15090, light gray, formula number 111, Type III, Class 2.

3.9   <u>Interchangeability</u> - Interchangeability shall be in accordance with MIL-T-28800.

3.10   <u>Workmanship</u> - Workmanship shall be in accordance with MIL-T-28800.

3.11   <u>Safety</u> - The Test Unit shall incorporate features for personnel and UUT safety during installation, operation, maintenance, repair, and interchanging of a complete equipment, assembly, or components thereof. Any deficiencies within the UUT(s) shall not disable the test unit.

4. <u>QUALITY ASSURANCE PROVISIONS</u>

4.1   <u>Responsibility for inspection</u> - Unless   otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract, the contractor may utilize his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this specification where such specifications are deemed necessary to assure supplies and services conform to prescribed requirements.

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4.2   Classification of Tests - Items covered by this specification shall be subjected to the following tests to determine compliance with all applicable requirements:

First Article Tests

Acceptance Tests

4.3   First Article Tests - First Article tests shall be performed on Test Set(s) which shall be representative of all equipments to be supplied under the contract. The tests shall be accomplished under the responsibility of the contractor and shall be conducted in accordance with the approved test procedure of paragraph 4.5 of this specification. The Government inspector and the procuring activity shall be advised when tests are to be conducted so that a representative may be designated to witness or supervise the tests when so desired. Contractors not having adequate facilities to conduct all required tests may obtain the services of a commercial testing laboratory acceptable to the Government.

4.3.1   First Article Test Data - When specified in the contract, the contractor shall submit all data collected in conducting these tests to the procuring agency for review and approval. In accordance with UDI-I-21349. (See 6.4.16).

4.3.2   Scope of Tests - The tests shall include, but not be limited to the tests specified in paragraph 3.3.4 of this specification and the applicable tests of MIL-T-28800. First article tests shall include environmental tests in accordance with MIL-STD-810 and interference tests in accordance with MIL-STD-461, MIL-STD-462 and MIL-HDBK-235-2.

4.3.2.1   Maintainability Assurance Test - A maintainability assurance test shall be conducted in accordance with MIL-STD-471, Appendices A and B, Test Method 9 to demonstrate the requirements of 3.3.2. The test details shall include as a minimum, task selection, test method, demonstration support material, demonstration conditions, demonstration test team, test schedule and test reports, and shall be a part of the test procedure, in accordance with 4.5, to be submitted to the procuring activity for approval.

4.3.2.2   Probability of Successful Performance Test - A probability of successful performance assurance test to demonstrate the requirement of 3.3.3 shall be conducted. The test procedure shall be prepared in accordance with 4.5 and submitted by the contractor to the procuring activity for approval.

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4.3.3   First Article Approval - Approval of the First Article Test Unit shall be by the procuring activity upon satisfactory completion of all tests. The first article Test Units shall be refurbished by the contractor to correct qualification deficiencies prior to delivery.

4.3.4   Production Test Sets - Test Sets supplied under the contract shall in all respects, including design, construction, workmanship, performance and quality, be equivalent to the approved test samples. Each Test Set shall be capable of successfully passing the same tests as imposed on the test sample. Evidence of noncompliance with the above shall constitute cause for rejection. It shall be the obligation of the contractor to make necessary corrections as approved by the procuring activity.

4.4   Acceptance Tests - The contractor shall furnish all samples and the contractor shall be responsible for accomplishing the acceptance tests. All inspection and testing shall be under the supervision of the Government inspector. Acceptance or approval of material during the course of manufacture shall not be construed as a guarantee of the acceptance of the finished product. Acceptance tests shall consist of the following:

4.4.1   Individual Tests - Each Test Set submitted for acceptance shall be subjected to the individual tests. These tests shall be adequate to determine compliance with the requirements of material, workmanship, operational adequacy and reliability. As a minimum, each Test Set accepted shall have passed the following tests:

a.   Examination of Product (4.4.1.1).

b.   Operational Test (4.4.1.2).

c.   Manufacturing Run-In Test (4.4.1.3).

4.4.1.1   Examination of Product - Each Test Set shall be examined carefully to determine that the material and workmanship requirements have been met.

4.4.1.2   Operational Test - Each Test Set shall be operated long enough to permit the equipment temperature to stabilize and to check sufficient characteristics and record adequate data to assure satisfactory equipment operation.

NOTE: Approval of the operational test procedure must be obtained form the Naval Air Systems Command thirty (30) days prior to testing.

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4.4.1.3   Manufacturing Run-In Test - Each Test Set shall be operated under the conditions specified herein for a period of six hours without failure. A failure shall be as defined in paragraph 6.6. Only those adjustments will be permitted which can be made by using such controls and adjustments that are accessible to the operator during the normal use of the Test Set.

Temperature   Ambient room.

Humidity   Ambient room.

4.4.2   Equipment Failure - Should a failure occur during test, verification of the failure shall be made and the test shall proceed.

4.5   Test Procedures - The procedures used for conducting first article tests and acceptance tests shall be prepared by the contractor and submitted to the procuring activity for review and approval. The right is reserved by the procuring activity to modify the tests or require any additional tests deemed necessary to determine compliance with the requirements of this specification and the contract. MIL-T-18303 shall be used as a guide for preparation of test procedures. When approved test procedures are available from previous contracts such procedures will be provided and may be used when their use is approved by the procuring activity. However, the right is reserved by the procuring activity to require modification of such procedures, including additional tests, when deemed necessary.

4.5.1   Electromagnetic compatibility. The test unit shall be subjected to a Government controlled radiated susceptibility test as specified in the electromagnetic environments of MIL-HDBK-235-2(Navy) Tables III & IV. Throughout this test, the test unit shall perform within the specified tolerances of the equipment's intended operational configurations. These tests shall be completed prior to final release for production. These tests shall be in lieu of the radiated suscepibility (RSO3) test called for in MIL-STD-461.

4.5.2   Shock, Mechanical (Nonoperational) - The Test Unit shall be given three shocks in each direction and each axis (total 18). Peak value (g) of each shock shall be 15g. The Test Unit shall be housed in the transit case (reference paragraph 3.6.2) during shock test.

4.5.3   Vibration - The Test Unit shall be subject to the vibration test of MIL-T-28800 at 2g, 5-55 Hz for 45 minutes.

4.5.4   Temperature Altitude - The Test Unit shall meet performance requirements when tested as required in MIL-T-28800 at a temperature of 40°C and altitude of 0 to 10,000 feet.

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4.5.5   <u>Bench Handling</u> - The Test Unit shall be tested in accordance with MIL-STD-810 Method 516 Procedure V.

5.   <u>PREPARATION FOR DELIVERY</u>

5.1   <u>General</u> - All major units and parts of the Test Set shall be preserved, packaged, packed and marked for the level of shipment specified in the contract or order in accordance with MIL-E-17555 and MIL-STD-794.

5.2   <u>Marking</u> In addition to any special marking by the contract or order, each Test Set package and exterior container shall be marked in accordance with MIL-STD-129.

6.   <u>NOTES</u>

6.1   <u>Intended Use</u> - This Test Set shall be used at the intermediate repair level (shop) to perform end-to-end testing and fault isolation of all individual WRA's to the SRA level of the TACNAV Set, AN/ASN-123.

6.2   <u>Performance Objectives</u> - Minimum size and weight, simplicity of operation, ease of maintenance, and an improvement in the performance and reliability of the specific functions beyond the requirements of the specification are objectives which shall be considered in the production of this equipment. Where it appears a substantial reduction in size and weight or improvement in simplicity of design, performance, ease of maintenance or reliability will result from the use of materials, parts and processes other than those specified in MIL-T-28800, it is desired that their use be investigated. When investigation shows advantages can be realized, a request for approval shall be submitted to the procuring activity for consideration. Each request shall be accompanied by complete supporting information.

6.3   <u>Nonrepairable Subassemblies</u> - As a general rule, nonrepairable subassemblies should be encapsulated or hermetically sealed. The number of connections internal to the subassembly should be held to a minimum. Detail parts, tolerances and ratings should be so selected that the life of the subassembly is greater than that of a similar repairable one. With few exceptions (such as high voltage power supplies), the nonrepairable subassembly should evidence a mean-time-to-failure greater than 5,000 hours.

6.4   <u>Ordering Data</u> - The Procuring Activity should exercise any desired options offered herein, and procurement documents should specify the following.

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6.4.1   Title, number, and date of this specification.

6.4.2   Selection of applicable levels of packaging and packing (see 5.1).

6.4.3   Specify types of external connectors to used and connections required. (See 3.2.4.2.)

6.4.4   Specify type, rating of, and connections to the test set power control. (See 3.2.5.1.)

6.4.5   Specify the type of device and performance requirements for the program control. (See 3.2.5.2.)

6.4.6   Specify the type of device and performance requirements for the data entry controls. (See 3.2.5.3.)

6.4.7   Specify types of cable assemblies and connectors. (See 3.6.1.6.)

6.4.8   Specify the transit case size. (See 3.6.2.1.)

6.4.9   Specify the transit case cover size. (See 3.6.2.2.1.)

6.4.10   Specify the self-test fixture test set size. (See 3.6.3.1.)

6.4.11   Specify the panel holding fixture size. (See 3.6.4.1.)

6.4.12   Specify the panel holding fixture material. (See 3.6.4.2.)

6.4.13   Specify the panel holding fixture finish. (See 3.6.4.3.)

6.4.14   Specify the material for the associated interconnect cables. (See 3.6.5.2.)

6.4.15   Specify reliability program data in accordance with DI-R-2113, Plan, Reliability Program on data requirement list DD 1423 as required by paragraph 3.3.1.

6.4.16   Specify First Article Test Data in accordance with UDI-T-21349, Report, First Article (preproduction) Test, on data requirement list DD 1423 as required by paragraph 4.2.1.

6.5 <u>Type Designation</u> - The parenthesis (*), when used in the type designation, will be deleted or replaced by either a number or letter furnished by the procuring activity upon application by the contractor for assignment of nomenclature in accordance with 3.3.6. The complete type number shall be used on nameplates, shipping records and instruction books, as applicable.

6.6 <u>Definitions</u>

<u>Failure</u> - The term failure shall be as defined in MIL-STD-781.

<u>Monitor</u> - To keep track of, regulate or control.

6.7 <u>Cables and connectors</u> - The following list of vendors, cables and connectors or equal may be used when specified in the contract.

Part Number	Reference Designation	Receptacle Type	
8703019	W1	7117494-111	Provides digital control between the Test Unit and the Navigational Computer.
8703023	W2	M81511/ 46FE01P3	Provides power to the Navigational Computer
		7117494-211	Provides analog, discrete and digital input/output between the Test Unit and Navigational Computer.
8703027	W3	7117494-212	Provides interface between the Test Unit and Navigational computer for simulated display and panel signals.
8703031	W4	7117494-212	Provides fault isolation signals for Navigational computer.
8703035	W5	M81511/ 46FD02P3	Provides power to the TACCO and SENSO panels.
		7117494-311	Provides total logic interface between the Test Unit and TACCO and SENSO panels.

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Part Number	Reference Designation	Receptacle Type	
8703039	W6	M81511/46FD03PI	Provides primary power to the Display indicator
		7117494-113	Provides interface between Test Unit and Display
		7117494-312	Provides fault isolation signals for the Display indicator
8703043	W7	MS3106A-20	Provides 115 Vac, 400 Hz 3∅ WYE primary power to the Test Unit
8703171	W8	MS3106A-16-11S	Provides 28 VDC primary power to the Test Unit
8703175	W9	M81511/46FD03PI	Provides +28 VDC and 115 VAC, 400 Hz to the Navigational Computer

1/   Part numbers are Teledyne Systems Company, 19601 Nordhoff Street, Northridge, CA 91324 numbers.

Preparing Activity:

Navy - AS

Project No. 5825-N011

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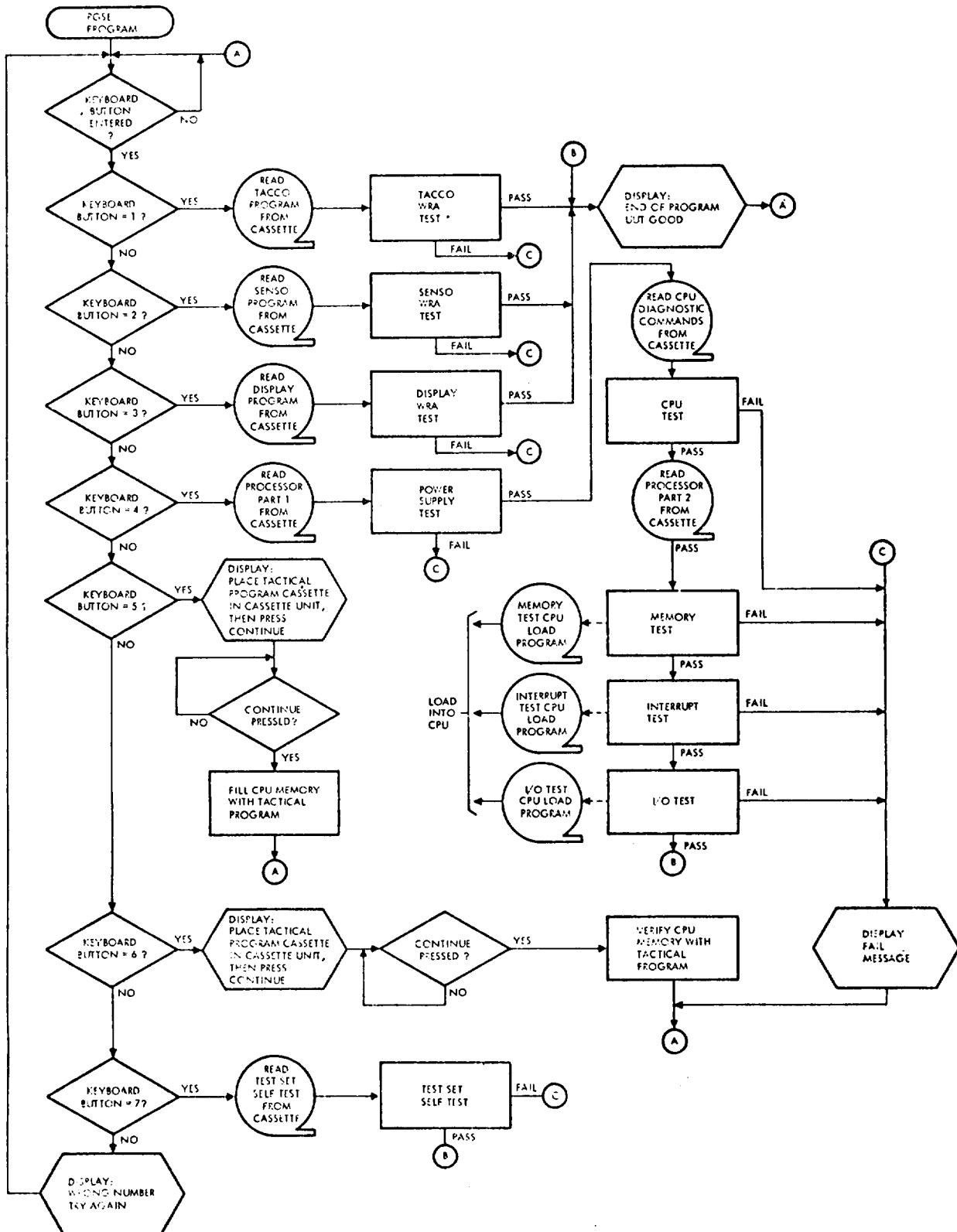
MIL-E-85288(AS)

Figure 1. Exective Software Operation

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APPENDIX A

PERFORMANCE CHARACTERISTICS AND
EXTERNAL INTERFACE PIN DATA

Receiver Type 1

1000 PF

DS8820A
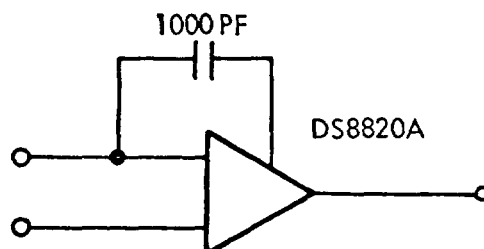
. PARAMETER		CONDITIONS			MIN	TYP	MAX	UNITS
V_{TH}	Differential Threshold Voltage	$I_{OUT} = -400\,\mu A$	$-3V \leq V_{CM} \leq +3V$			0.06	0.5	V
		$V_{OUT} \geq 2.5V$	$-15V \leq V_{CM} \leq +15V$			0.06	1.0	V
		$I_{OUT} = +16\,mA,$	$-3V \leq V_{CM} \leq -3V$			-0.08	-0.5	V
		$V_{OUT} \leq 0.4V$	$-15V \leq V_{CM} \leq +15V$,			-0.08	-1.0	V
R_I^-	Inverting Input Resistance	$-15V \leq V_{CM} \leq +15V$			3.6	5		$k\Omega$
R_I^+	Non Inverting Input Resistance	$-15V \leq V_{CM} \leq +15V$			1.8	2.5		$k\Omega$
R_T	Line Termination Resistance	$T_A = 25^{\circ}C$			120	170	250	Ω
I_I^-	Inverting Input Current	$V_{CM} = 15V$				3.0	4.2	mA
		$V_{CM} = 0V$				0	-0.5	mA
		$V_{CM} = -15V$				-3.0	-4.2	mA
I_I^+	Non Inverting Input Current	$V_{CM} = 15V$				5.0	7.0	mA
		$V_{CM} = 0V$				-1.0	-1.6	mA
		$V_{CM} = -15V$				-7.0	-9.8	nA
I_{CC}	Power Supply Current	I_{OUT} = Logical "0"	$V_{DIFF} = -1V$	$V_{CM} = 15V$		3.9	6.0	mA
				$V_{CM} = -15V$		9.2	14.0	mA
			$V_{DIFF} = -05V,$	$V_{CM} = 0V$		6.5	10.2	mA

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Receiver Type 1 (Continued)

PARAMETER		CONDITIONS	MIN.	TYP.	MAX	UNITS
V_{OH}	Logical "1" Output Voltage	$I_{OUT} = -400\mu A$, $V_{DIFF} = 1V$	2.5	4.0	5.5	V
V_{OL}	Logical "0" Output Voltage	$I_{OUT} = +16 mA$, $V_{DIFF} = -1V$	0	0.22	0.4	V
V_{SH}	Logical "1" Strobe Input Voltage	$I_{OUT} = +16 mA$, $V_{OUT} \leq 0.4V$, $V_{DIFF} = -3V$	2.1			V
V_{SL}	Logical "0" Strobe Input Voltage	$I_{OUT} = -400\mu A$, $V_{OUT} \geq 2.5V$, $V_{DIFF} = -3V$			0.9	V
I_{SH}	Logical "1" Strobe Input Current	$V_{STROBE} = -5.5V$, $V_{DIFF} = 3V$		0.01	5.0	μA
I_{SL}	Logical "0" Strobe Input Current	$V_{STROBE} = 0.4V$, $V_{DIFF} = -3V$		-1.0	-1.4	mA
I_{SC}	Output Short Circuit Current	$I_{OUT} = 0V$, $V_{CC} = 5.5V$, $V_{STROBE} = 0V$	-2.8	-4.5	-6.7	mA
SWITCHING CHARACTERISTICS						
PARAMETER		CONDITIONS	MIN.	TYP.	MAX	UNITS
t_{pd0}	Propagation Delay, Differential Input to "0" Output	$V_{CC} = 5V$, $T_A = 25°C$		30	45	ns
t_{pd1}	Propagation Delay, Differential Input to "1" Output	$V_{CC} = 5V$, $T_A = 25°C$		27	40	ns
t_{pd0}	Propagation Delay, Strobe Input to "0" Output	$V_{CC} = 5V$, $T_A = 25°C$		16	25	ns
t_{pd1}	Propagation Delay, Strobe Input to "1" Output	$V_{CC} = 5V$, $T_A = 25°C$		18	30	ns

Receiver Type 2
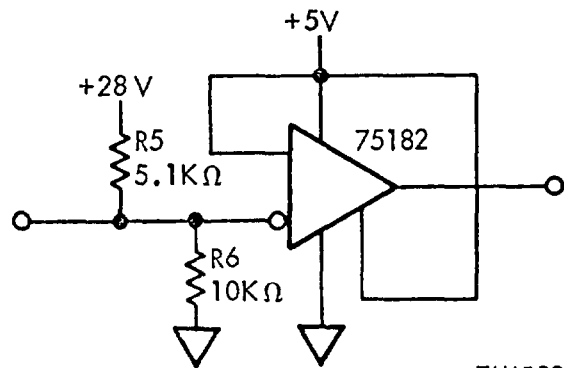
TII1523

Input Current	-5.5 ± 0.5 mA at $V_{IN} = 0V$
V_{IN} High	Open
V_{IN} Low	Gnd
Pulse Width	2 ms min

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Receiver Type 3

TII1524
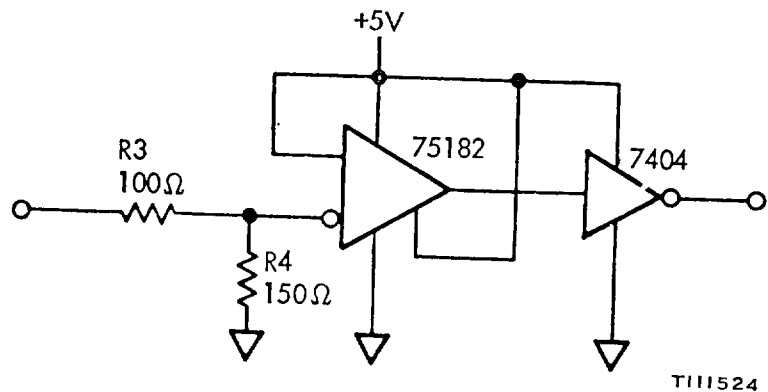
Input Current	at V_{IN} = 25V
V_{IN} High	28V Nominal
V_{IN} Low	0 ± 0.5V
Pulse Width	2 ms min

Receiver Type 4
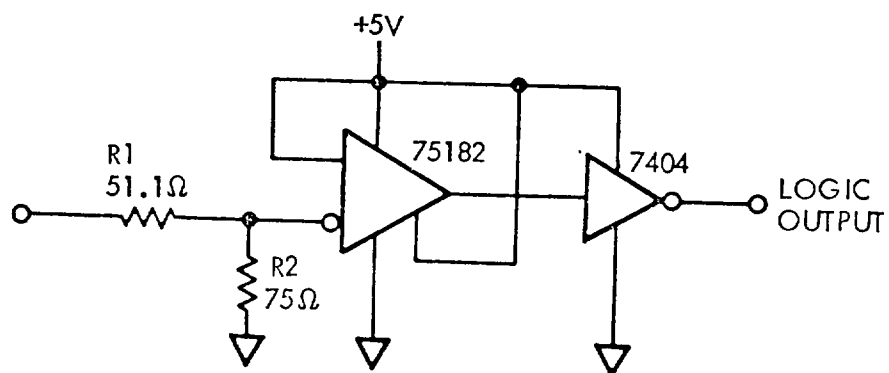
Input Current	200 ± 20 mA at V_{IN} = 25V
V_{IN} High	28 V Nominal
V_{IN} Low	0 ± 0.5V
Pulse Width	2 ms min

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Receiver Type 5

+5V

SN54LS240
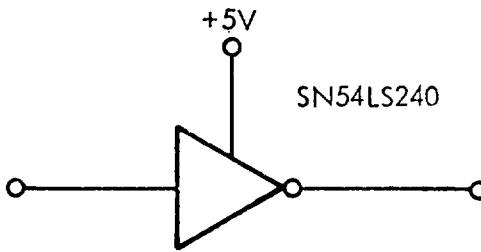
PARAMETER		TEST CONDITIONS		SN54LS'		
				MIN	TYP	MAX
V_{IH}	High-level input voltage			2		
V_{IL}	Low-level input voltage					0.7
V_{IK}	Input clamp voltage	V_{CC} = MIN,	I_I = −18 mA			−1.5
	Hysteresis $(V_{T+} - V_{T-})$	V_{CC} = MIN		0.2	0.4	
V_{OH}	High-level output voltage	V_{CC} = MIN, V_{IL} = 0.8 V,	V_{IH} = 2 V, I_{OH} = MAX	2.4	3.4	
		V_{CC} = MIN, V_{IL} = 0.5 V,	V_{IH} = 2 V, I_{OH} = MAX	2		
V_{OL}	Low-level output voltage	V_{CC} = MIN, V_{IH} = 2 V, V_{IL} = V_{IL}max	I_{OL} = 12 mA			0.4
			I_{OL} = 24 mA			
I_{OZH}	Off-state output current, high-level voltage applied	V_{CC} = MAX, V_{IH} = 2 V, V_{IL} = V_{IL}max	V_O = 2.7 V			20
I_{OZL}	Off-state output current, low-level voltage applied		V_O = 0.4 V			−20
I_I	Input current at maximum input voltage	V_{CC} = MAX,	V_I = 7 V			0.1
I_{IH}	High-level input current, any input	V_{CC} = MAX,	V_I = 2.7 V			20
I_{IL}	Low-level input current	V_{CC} = MAX,	V_{IL} = 0.4 V			−0.2
I_{OS}	Short circuit output current	V_{CC} = MAX		−50		−225
I_{CC}	Supply current	Outputs high	V_{CC} = MAX, Outputs open		13	23
		Outputs low			26	44
		All outputs disabled			29	50

switching characteristics

PARAMETER		TEST CONDITIONS		'LS240		
				MIN	TYP	MAX
t_{PLH}	Propagation delay time, low-to-high level output	C_L = 45 pF,	R_L = 667 Ω		9	14
t_{PHL}	Propagation delay time, high-to-low level output				12	18
t_{PZL}	Output enable time to low level				20	30
t_{PZH}	Output enable time to high level				15	23
t_{PLZ}	Output disable time from low level	C_L = 5 pF,	R_L = 667 Ω		15	25
t_{PHZ}	Output disable time from high level				10	18

Receiver Type 6

V_{IN} High	+28V Nominal
I_{IN}	150 ± 15 mA
V_{IN} Low	0 ± 0.5 V
Pulse Width	0.2 ms min
Output Must Sink and Source	150 mA

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DC Analog 8 (DAC)

Output Impedance	0.05Ω Typical
Output Voltage	± 2.5 V
Output Current	± 5 mA
Accuracy	0. 5% of full scale range
Resolution	12 bits
Conversion Speed	$5\,\mu$ sec
Input Code	Complementary two's complement

AC Analog 9 (DAC)

V_{OUT}	3V RMS (AC coupled) at 0° or 180° with respect to Bϕ
Output Load	$20\,k\Omega$
Input Code	12 bits straight binary
Settling Time	$15\,\mu$ sec to 0. 01%
Error	0. 03% relative to reference voltage at 25°C
Temperature Stability	20 PPM/^{o}C
Frequency	400 HZ

AC Analog 10 (DAC)

V_{OUT}	7. 5V RMS (AC coupled) at 0° or 180° with respect to Bϕ
Frequency	400 HZ
Output Load	$20\,k\Omega$
Input Code	12 bits straight binary
Settling Time	$15\,\mu$ sec to 0. 01%
Error	0. 03% relative to reference voltage at 25°C
Temperature Stability	20 PPM/^{o}C

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Driver Type 1

8830
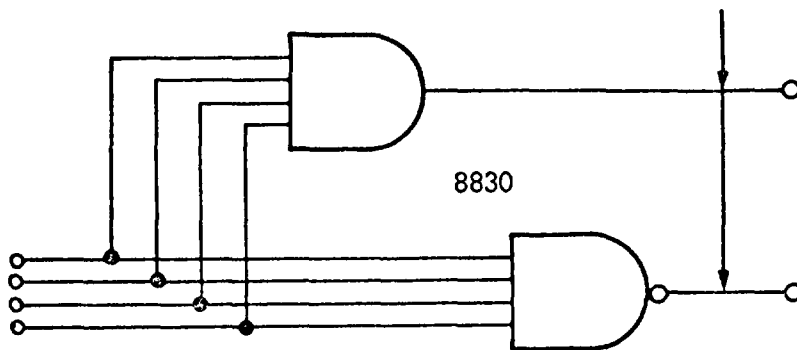
	PARAMETER	CONDITIONS		MIN.	TYP.	MAX.	UNITS
V_{IH}	Logical "1" Input Voltage			2.0			V
V_{IL}	Logical "0" Input Voltage					0.8	V
V_{OH}	Logical "1" Output Voltage	$V_{IN} = 0.8V$	$I_{OUT} = -0.6\ mA$	2.4			V
			$I_{OUT} = 40\ mA$	1.8	3.3		V
V_{OL}	Logical "0" Output Voltage	$V_{IN} = 2.0V$	$I_{OUT} = 32\ mA$		0.2	0.4	V
			$I_{OUT} = 40\ mA$		0.22	0.5	V
I_{IH}	Logical "1" Input Current	$V_{IN} = 2.4V$				120	μA
		$V_{IN} = 5.5V$				2	mA
I_{IL}	Logical "0" Input Current	$V_{IN} = 0.4V$				4.8	mA
I_{SC}	Output Short Circuit Current	$V_{CC} = 5.0V,\ T_A = 125°C$		40	100	120	mA
I_{CC}	Supply Current	$V_{IN} = 5.0V,\ (Each\ Driver)$			11	18	mA

SWITCHING CHARACTERISTICS

	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNITS
t_{pd1}	Propagation Delay AND Gate	$T_A = 25°C,\ V_{CC} = 5.0V$		8	12	ns
t_{pd0}		$C_L = 15\ pf$		11	18	ns
t_{pd1}	Propagation Delay NAND Gate	$T_A = 25°C,\ V_{CC} = 5.5V$		8	12	ns
t_{pd0}		$C_L = 15\ pF.$		5	8	ns
t_1	Differential Delay	Load, 100Ω and 5000 pF		12	16	ns
t_2	Differential Delay	Load, 100Ω and 5000 pF		12	16	ns

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Driver Type 2
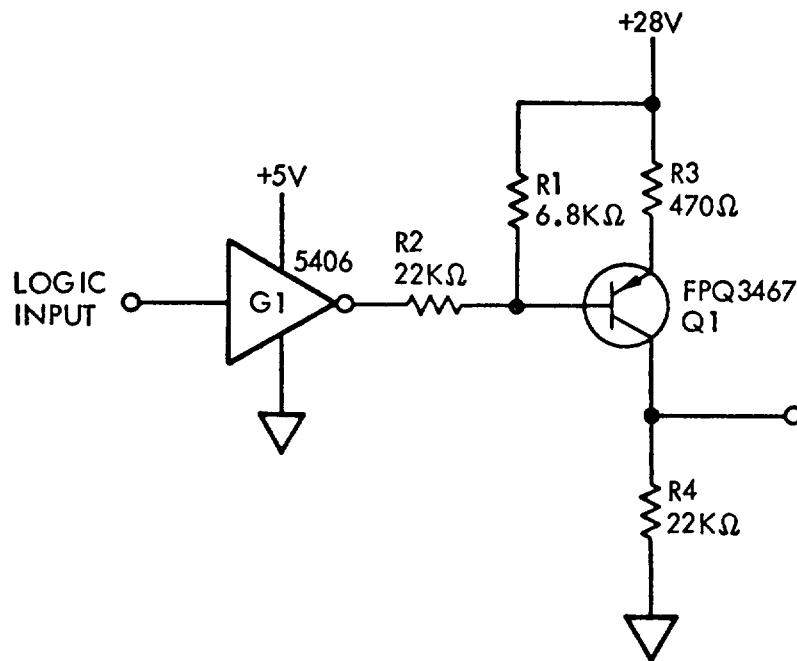
V_{OUT} High   28 ±5V

Current Source   -3mA max.

V_{OUT} Low   0 ± 0.5V

Driver Type 3

SN5406
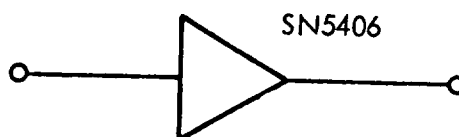
V_{OUT} High   Open

V_{OUT} Low   .4V max (I_{OL} = 5 mA)

32
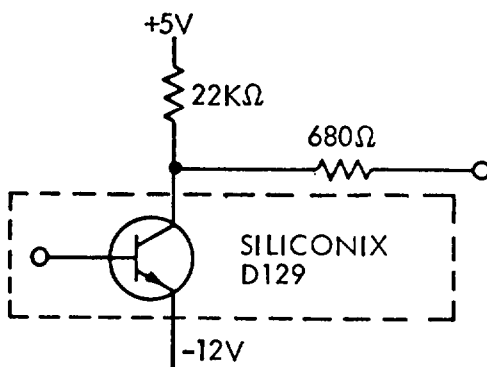
Driver Type 4

$$V_{OUT} \text{ High} \qquad +5 \pm 0.5V$$
$$V_{OUT} \text{ Low} \qquad -11.3 \pm 1V \qquad (10 \text{ k}\Omega \text{ load})$$
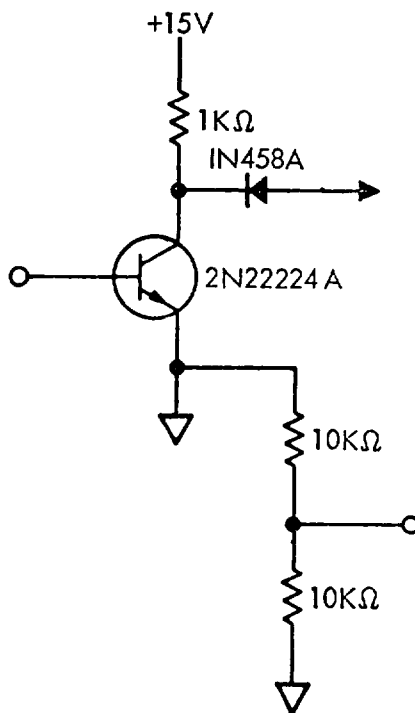
Driver Type 5

Output Characteristics

$$V_{OUT} \text{ High} \qquad \text{Open (Back biased diode to 15V)}$$
$$V_{OUT} \text{ Low} \qquad 1 \pm 0.5V$$

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Driver Type 6 (Hex Bus Driver)

SN54366/SN54365
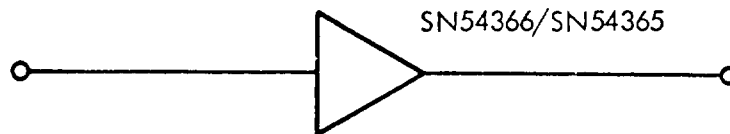
PARAMETER	TEST CONDITIONS		MIN	TYP	MAX	UNIT
V_{IH} High-level input voltage			2			V
V_{IL} Low-level input voltage					0.8	V
V_I Input clamp voltage	V_{CC} = MIN, I_I = -12 mA				-1.5	V
V_{OH} High-level output voltage	V_{CC} = MIN, V_{IH} = 2V V_{IL} = 0.8V, I_{OH} = MAX		2.4	3.1		V
V_{OL} Low-level output voltage	V_{CC} = MIN, V_{IH} = 2V V_{IL} = 0.8V, I_{OL} = 32 mA				0.4	V
V_O Output clamp voltage	V_{CC} = 0 V	I_O = 12 mA			1.5	
		I_O = 12 mA			-1.5	V
I_{OZH} Off-state output current, high-level voltage applied	V_{CC} = MAX, V_{IH} = 2V V_O = 2.4V				40	μA
I_{OZL} Off-state output current, low-level voltage applied	V_{CC} = MAX, V_{IH} = 2V V_O = 0.4V				-40	μA
I_I Input current maximum input voltage	V_{CC} = MAX, V_I = 5.5V				1	mA
I_{IH} High-level input current	V_{CC} = MAX, V_{IH} = 2.4V				40	μA
I_{IL} Low-level input current	A input	V_{CC} = MAX, V_I = 0.5V Both $\overline{G}$ inputs at 2V			-40	μA
		V_{CC} = MAX, V_I = 0.4V Both $\overline{G}$ inputs at 0.4V			-1.6	mA
	$\overline{G}$ input	V_{CC} = MAX, V_I = 0.4V			-1.6	mA
I_{OS} Short-circuit output current	V_{CC} = MAX, V_I = 0.4V		-40		-130	mA
I_{CC} Supply current	V_{CC} = MAX	'365		65	85	mA
		'366		59	77	

PARAMETER	TEST CONDITIONS	'365 MIN	MAX	'366 MIN	MAX	UNIT
t_{PLH} Propagation delay time, low-to-high-level output	C_L = 50 pF, R_L = 400Ω		16		17	ns
t_{PHL} Propagation delay time, high-to-low-level output			22		16	ns
t_{ZH} Output enable time to high level			35		35	ns
t_{ZL} Output enable time to low level			37		37	ns
t_{HZ} Output disable time from high level	C_L = 5 pF, R_L = 400Ω		11		11	ns
t_{LZ} Output disable time from low level			27		27	ns

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Driver Type 7

Over Temperature Sense and Control

HI-201

0.22MF
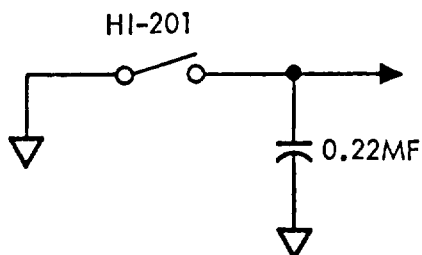
Analog Signal Range	Open or gnd
ON Resistance	100Ω max (±0.10V, $I = 1$ mA)
OFF Input Leakage Current	2 nA Typical
OFF Output Leakage Current	2 nA Typical
ON Leakage Current	2 nA Typical
Switch ON Time	185 ns Typical
Switch OFF Time	220 ns Typical

Synchro A Simulator

Output Characteristics (Digital to Synchro Converter)

V_{OUT}	11.8V RMS L-L synchro
R_L	100 kΩ load min
Freq	400 HZ
Accuracy	±4 arc min
Resolution	1.3 arc min
Input Code	14 bit natural parallel binary
Settling Time	100 μsec
Initial Set Up Time	5 ms

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Synchro A Simulator - Continued

Output Characteristics (Precision Table)

V_{OUT}	11.8V RMS L-L synchro
RL	100 kΩ load min
Freq	400 HZ
Accuracy	± 2 arc min
Relay Settling Time	5 ms
Angle Selection	6 angles

Synchro C Simulator

Output Characteristics (D/S Converter)

V_{OUT} Synchro	2V RMS L-L synchro
RL	100 kΩ min load
Freq	400 HZ ($102^\circ \pm 5^\circ$ lag from Bϕ)
Accuracy	±15 arc min
Resolution	1.3 arc min
Input Code	14 bit natural parallel binary
Settling Time	100 μsec

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Synchro B Simulator
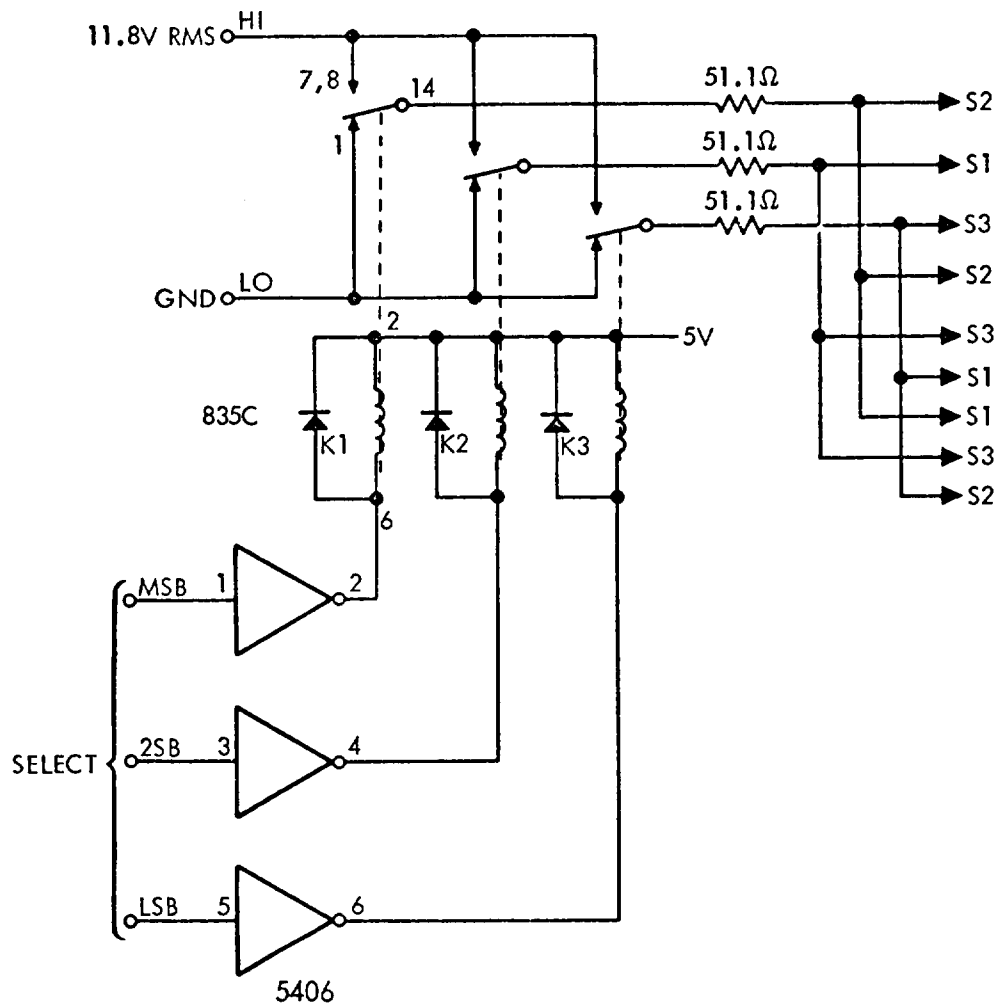
Output Characteristics

V_{OUT}	11.8V RMS L-L synchro
RL	100 kΩ load min
Freq	400 HZ
Accuracy	±2 arc min
Relay Settling Time	5 ms
Angle Selection	6 angles

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Synchro R

Input Characteristics (S/D Converter)

Synchro	11.8V RMS L-L synchro
Frequency	400 HZ
Resolution	14 bits
Accuracy	±6 arc min
Step Response	300 ms
Input Selection Relay Switching Time	5 ms

Load (1) Scott T Transformer

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DC Analog 1 (A/D)

Load Impedance	250 kΩ
Input Voltage Range	±10V DC
Conversion Accuracy	1% FSR
Resolution	12 bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

DC Analog 2 (A/D)

Load Impedance	250 kΩ
Input Voltage Range	±20V DC
Conversion Accuracy	1%
Resolution	12 bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

DC Analog 3 (A/D)

Load Impedance	250 kΩ
Input Voltage Range	±30V DC
Conversion Accuracy	1%
Resolution	12 bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

DC Analog 4 (A/D)

Load Impedance	100 kΩ
Input Voltage Range	±10V DC
Conversion Accuracy	1%
Resolution	12 Bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

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DC Analog 5 (A/D)

Load Impedance	100 kΩ
Input Voltage Range	±20V DC
Conversion Accuracy	1%
Resolution	12 bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

DC Analog 6 (A/D)

Load Impedance	100 kΩ
Input Voltage Range	±40V DC
Conversion Accuracy	1%
Resolution	12 bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

DC Analog 7 (A/D)

Load Impedance	200 kΩ
Input Voltage Range	±10V DC
Conversion Accuracy	1%
Resolution	12 bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

AC/DC Analog 1 (A/D)

Load Impedance	100 kΩ
Input Voltage Range	±10V RMS or ± 10 V DC
Conversion Accuracy	1%
Resolution	12 bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

AC/DC Analog 2 (A/D)

Load Impedance	100 kΩ
Input Voltage Range	+20V RMS or +20V DC
Conversion Accuracy	1%
Resolution	12 bits (LSB 19.53 mV)
Conversion Speed	21 μsec
Output Code	Complementary two's complement

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W9-P2-1	J1-1	115V ØA Power	400 Hz Proc. Power	Aircraft		ØA
W9-P2-2	J1-2	115V ØB Power	400 Hz Proc. Power	Aircraft		ØB
W9-P2-3	J1-3	115V ØC Power	400 Hz Proc. Power	Aircraft		ØC
W9-P2-4	J1-4	115V Neutral	400 Hz Proc. Power	Aircraft		NEUTRAL
W9-P2-5	J1-5	Chassis Gnd	400 Hz Proc. Power	Aircraft		CHAGND
W9-P2-6	J1-6	Power	+28 VDC	Aircraft		+28 VDC
W9-P2-7	J1-7	Gnd	+28 VDC RTN	Aircraft		+28 VR
W9-P2-8	J1-8	N/C				
W9-P2-9	J1-9	N/C				

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
	J2-1					
	J2-2					
	J2-3	N/C				
	J2-4	N/C				
W2-P4-8	J2-5	Driver Type 2	Sonar Identification	Sonar		APSID*
W2-P4-3	J2-6	Receiver Type 1	Data Acknowledge High		Sonar	DTACKH
W2-P4-4	J2-7	Receiver Type 1	Data Acknowledge Low		Sonar	DTACKL
W2-P4-9	J2-8	Driver Type 1	Data Transfer High	Sonar		DAXFR
W2-P4-10	J2-9	Driver Type 1	Data Transfer Low	Sonar		DAXFR*
W2-P4-15	J2-10	Driver Type 1	Mad Transfer High	Sonar		MAXFR
W2-P4-16	J2-11	Driver Type 1	Mad Transfer Low	Sonar		MAXFR*
W2-P4-23	J2-12	Receiver Type 1	Mad Acknowledge High		Sonar	MAACK
W2-P4-24	J2-13	Receiver Type 1	Mad Acknowledge Low		Sonar	MAACK*
W2-P3-A1	J2-14	Driver Type 1	Sonar Serial Data (+)	Sonar		SNRDA+
W2-P3-A2	J2-15	Driver Type 1	Sonar Serial Data (-)	Sonar		SNRDA-
W2-P3-A3	J2-16	Driver Type 1	Sonar Clock (+)	Sonar		SNRCK+
W2-P3-A4	J2-17	Driver Type 1	Sonar Clock (-)	Sonar		SNRCK-
W2-P3-A5	J2-18	Gnd	Dip Sonar Rtn	Sonar		GND DSN
W2-P3-A6	J2-19	Synchro B	Range A S1	Sonobuoy Proc.		RNGAS1
W2-P3-B1	J2-20	Synchro B	Range A S2	Sonobuoy Proc.		RNGAS2
W2-P3-B2	J2-21	Synchro B	Range A S3	Sonobuoy Proc.		RNGAS3
W2-P3-B3	J2-22	Synchro B	Range B S1	Sonobuoy Proc.		RNGBS1
W2-P3-D3	J2-23	Gnd	Auto Pilot Return	ASW		GNDASW
W2-P3-B6	J2-24	Driver Type 2	Cable Range	ASW		CANEN*
DF-P3-C1	J2-25	Driver Type 3	Fly-To-Point	ASW		DFTPI*
W2-P3-C2	J2-26	Driver Type 2	Range Hold B	Control, Recorder		RAHLB
W2-P3-C3	J2-27	Driver Type 2	Range Hold A	Control, Recorder		RAHLA
W2-P3-C4	J2-28	Gnd	Range Read RTN	Sonobuoy Recorder		RNGR2R
W2-P3-C5	J2-29	Receiver Type 6	Range Read 2	Sonobuoy Recorder		RNGRD2
W2-P3-C6	J2-30	Driver Type 2	Range Read 1	Sonobuoy Recorder		RNGRD1
W2-P3-B5	J2-31	Synchro	Range B S3	From Sonobuoy Proc.		RNGBS3
W2-P3-B4	J2-32	Synchro	Range B S2	From Sonobuoy Proc.		RNGBS2
W2-P3-D1	J2-33	Receiver Type 1	ASW Serial Data (+)		ASW	ASW AP(+)
W2-P3-D2	J2-34	Receiver Type 1	ASW Serial Data (-)		ASW	ASW AP(-)

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W2-P3-D4	J2-35	Driver Type 2	Spare Driver Type 2			SPO11
W2-P3-D5	J2-36	Driver Type 2	Spare Driver Type 2			SPO12
W2-P3-D6	J2-37	Receiver Type 3	Spare Receiver Type3			SD001
W2-P3-E1	J2-38	Receiver Type 3	Spare Receiver Type 3			SD002
W2-P3-E2	J2-39	Gnd	Spare Return			SDDR
W2-P3-E3	J2-40	Driver Type 2	Night Lighting	Sensor Console Control		NTLTG
W2-P3-E4	J2-41	Gnd	Night Lighting RTN	Sensor Console Control		NTLTGR
W2-P3-E5	J2-42	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU01
W2-P3-E6	J2-43	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU02
W2-P3-F1	J2-44	Driver Type 2	EFGH Select	Channel Select Control		EFGH
W2-P3-F2	J2-45	Gnd	Tube Loaded RTN			STUR
W2-P3-F3	J2-46	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU12
W2-P3-F4	J2-47	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU11
W2-P3-F5	J2-48	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU10
W2-P3-F6	J2-49	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU09
W2-P3-G1	J2-50	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU08
W2-P3-G2	J2-51	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU07
W2-P3-G3	J2-52	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU06
W2-P3-G4	J2-53	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU05
W2-P3-G5	J2-54	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU04
W2-P3-G6	J2-55	Driver Type 3	Tube Loaded	Sonobuoy Launch Tubes		STU03
W2-P3-H1	J2-56	Driver Type 2	Channel Select	Channel Select Control		AB/EF
W2-P3-H2	J2-57	Driver Type 2	Channel Select	Channel Select Control		AC/EG
W2-P3-H3	J2-58	Driver Type 2	Channel Select	Channel Select Control		BD/FH
W2-P3-H4	J2-59	Driver Type 2	Channel Select	Channel Select Control		CD/GH
W2-P3-H5	J2-60	Driver Type 4	RF Channel Code	Sonobuoy		SRAA
W2-P3-H6	J2-61	Driver Type 4	RF Channel Code	Sonobuoy		SRAB
W2-P3-J1	J2-62	Driver Type 4	RF Channel Code	Sonobuoy		SRAC
W2-P3-J2	J2-63	Driver Type 4	RF Channel Code	Sonobuoy		SRAD
W2-P3-J3	J2-64	Driver Type 4	RF Channel Code	Sonobuoy		SRAE
W2-P3-J4	J2-65	Driver Type 4	RF Channel Code	Sonobuoy		SRBA
W2-P3-J5	J2-66	Driver Type 4	RF Channel Code	Sonobuoy		SRBB
W2-P3-J6	J2-67	Driver Type 4	RF Channel Code	Sonobuoy		SRDD
W2-P3-K1	J2-68	Driver Type 4	RF Channel Code	Sonobuoy		SRDB

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W2-P3-K2	J2-69	Driver Type 4	RF Channel Code	Sonobuoy		SRDB*
W2-P3-K3	J2-70	Driver Type 4	RF Channel Code	Sonobuoy		SRDA*
W2-P3-K4	J2-71	Driver Type 4	RF Channel Code	Sonobuoy		SRCE*
W2-P3-K5	J2-72	Driver Type 4	RF Channel Code	Sonobuoy		SRCD*
W2-P3-K6	J2-73	Driver Type 4	RF Channel Code	Sonobuoy		SRCC*
W2-P3-L1	J2-74	Driver Type 4	RF Channel Code	Sonobuoy		SRCB*
W2-P3-L2	J2-75	Driver Type 4	RF Channel Code	Sonobuoy		SRCA*
W2-P3-L3	J2-76	Driver Type 4	RF Channel Code	Sonobuoy		SRBE*
W2-P3-L4	J2-77	Driver Type 4	RF Channel Code	Sonobuoy		SRBD*
W2-P3-L5	J2-78	Driver Type 4	RF Channel Code	Sonobuoy		SRBC*
W2-P3-L6	J2-79	Driver Type 4	RF Channel Code	Sonobuoy		SRDE*
W2-P3-M1	J2-80	Driver Type 4	RF Channel Code	Sonobuoy		SREA*
W2-P3-M2	J2-81	Driver Type 4	RF Channel Code	Sonobuoy		SREB*
W2-P3-M3	J2-82	Driver Type 4	RF Channel Code	Sonobuoy		SREC*
W2-P3-M4	J2-83	Driver Type 4	RF Channel Code	Sonobuoy		SRED*
W2-P3-N5	J2-84	Driver Type 4	RF Channel Code	Sonobuoy		SREE*
W2-P3-N6	J2-85	Driver Type 4	RF Channel Code	Sonobuoy		SRFA*
W2-P3-N1	J2-86	Driver Type 4	RF Channel Code	Sonobuoy		SRFB*
W2-P3-N2	J2-87	Driver Type 4	RF Channel Code	Sonobuoy		SRFC*
W2-P3-N3	J2-88	Driver Type 4	RF Channel Code	Sonobuoy		SRFD*
W2-P3-N4	J2-89	Driver Type 4	RF Channel Code	Sonobuoy		SRFE*
W2-P3-N5	J2-90	Driver Type 4	RF Channel Code	Sonobuoy		SRHF*
W2-P3-N6	J2-91	Driver Type 4	RF Channel Code	Sonobuoy		SRHD*
W2-P3-P1	J2-92	Driver Type 4	RF Channel Code	Sonobuoy		SRHC*
W2-P3-P2	J2-93	Driver Type 4	RF Channel Code	Sonobuoy		SRHB*
W2-P3-P3	J2-94	Driver Type 4	RF Channel Code	Sonobuoy		SRNA*
W2-P3-P4	J2-95	Driver Type 4	RF Channel Code	Sonobuoy		SRGE*
W2-P3-P5	J2-96	Driver Type 4	RF Channel Code	Sonobuoy		SRGD*
W2-P3-P6	J2-97	Driver Type 4	RF Channel Code	Sonobuoy		SRGC*
W2-P3-R1	J2-98	Driver Type 4	RF Channel Code	Sonobuoy		SRGB*
W2-P3-R2	J2-99	Driver Type 4	RF Channel Code	Sonobuoy		SRGA*
W2-P3-R3	J2-100	Gnd	Sonobuoy Rec Return	Sonobuoy		SBRCVR
W2-P3-R4	J2-101	Receiver Type 4	Smoke Launch		Launch Control	SMCLCH

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W2-P3-R5	J2-102	Gnd	Smoke Launch RTN		Launch Control	SMOLCR
	J2-103 Thru J2-121	N/C				

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CONN TEST ST	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W4-P2-A1	J3-1	Receiver Type 5	Peak Detect		Test	SSCPK
W4-P2-A2	J3-2	Receiver Type 5	3 MHZ Clock		Test	3MHZA*
W4-P2-A3	J3-3	Gnd	RTN		Test	3MHZA*R
W4-P2-A4	J3-4	Receiver Type 5	62.5 KHZ Clock		Test	NBCK*
W4-P2-A5	J3-5	Receiver Type 5	DMA Acknowledge Enable		Test	DMAKE1
W4-P2-A6	J3-6	Receiver Type 5	Mem Busy		Test	MBUSY*
W4-P2-B1	J3-7	Receiver Type 5	DMA Request		Test	DMACR
W4-P2-B2	J3-8	Receiver Type 5	DMA Acknowledge		Test	DMAK
W4-P2-B3	J3-9	Receiver Type 5	MEM Timing Signal		Test	MWAIT*
W4-P2-B4	J3-10	Receiver Type 5	Discrete Signal		Test	DLI08
W4-P2-B5	J3-11	Receiver Type 5	Discrete Signal		Test	DLI07
W4-P2-B6	J3-12	Receiver Type 5	RAM Data Sel		Test	S1B
W4-P2-C1	J3-13	Receiver Type 5	RAM Data Sel		Test	S2B
W4-P2-C2	J3-14	Receiver Type 5	RAM ZC Select		Test	C0B
W4-P2-C3	J3-15	Receiver Type 5	RAM ZC Select		Test	C1B
W4-P2-C4	J3-16	Receiver Type 5	RAM ZC Select		Test	C2B
W4-P2-C5	J3-17	Receiver Type 5	RAM ZB Select		Test	A0A
W4-P2-C6	J3-18	Receiver Type 5	RAM ZB Select		Test	A1A
W4-P2-D1	J3-19	Receiver Type 5	RAM ZB Select		Test	A2A
W4-P2-D2	J3-20	Receiver Type 5	Arith Inst Bit		Test	ACA*
W4-P2-D3	J3-21	Receiver Type 5	Arith Inst Bit		Test	ACC1*
W4-P2-D4	J3-22	Receiver Type 5	Arith Inst Bit		Test	ACB*
W4-P2-D5	J3-23	Spare			Test	
W4-P2-D6	J3-24	Receiver Type 5	DMA Add		Test	MA00
W4-P2-E1	J3-25	Receiver Type 5	DMA Add		Test	MA01
W4-P2-E2	J3-26	Receiver Type 5	Memory Read/Write Control		Test	MODE
W4-P2-E3	J3-27	Receiver Type 5	RAM ZC Select		Test	C2A
W4-P2-E4	J3-28	Receiver Type 5	RAM ZC Select		Test	C1A
W4-P2-E5	J3-29	Receiver Type 5	RAM ZC Select		Test	C0A
W4-P2-E6	J3-30	Receiver Type 5	RAM Input Select		Test	S2A
W4-P2-F1	J3-31	Receiver Type 5	RAM Input Select		Test	S1A
W4-P2-F2	J3-32	Receiver Type 5	RAM Input Select		Test	S0A

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W4-P2-F3	J3-33	Receiver Type 5	DMA Add		Test	MA02
W4-P2-F4	J3-34	Receiver Type 5	DMA Add		Test	MA03
W4-P2-F5	J3-35	Receiver Type 5	DMA Add		Test	MA04
W4-P2-F6	J3-36	Receiver Type 5	DMA Add		Test	MA05
Wr-P2-Gl	J3-37	Receiver Type 5	Computer Power On Detect		Test	CON
W4-P2-G2	J3-38	Receiver Type 5	Ext Mem Control		Test	GX1M*
W4-P2-G3	J3-39	Receiver Type 5	Gated Clock A		Test	ECPA
W4-P2-G4	J3-40	Receiver Type 5	Gated Clock B		Test	ECPB
W4-P2-G5	J3-41	Receiver Type 5	Arith Inst		Test	MC
W4-P2-G6	J3-42	Receiver Type 5	DMA Add		Test	MA06
W4-P2-H1	J3-43	Receiver Type 5	DMA Add		Test	MA07
W4-P2-H2	J3-44	Receiver Type 5	DMA Add		Test	MA08
W4-P2-H3	J3-45	Receiver Type 5	DMA Add		Test	MA09
W4-P2-H4	J3-46	Receiver Type 5	Computer Power ON		Test	ON
W4-P2-H5	J3-47	Gnd			Test	GNDP1B
W4-P2-H6	J3-48	Gnd			Test	GNDP1C
W4-P2-J1	J3-49	Receiver Type 5	Arith Inst		Test	MADD
W4-P2-J2	J3-50	Receiver Type 5	Arith Inst		Test	MSUB
W4-P2-J3	J3-51	Receiver Type 5	Arith Inst		Test	MIC
W4-P2-J4	J3-52	Receiver Type 5	DMA Add		Test	MA10
W4-P2-J5	J3-53	Receiver Type 5	DMA Add		Test	MA11
W4-P2-J6	J3-54	Receiver Type 5	DMA Add		Test	MA12
W4-P2-K1	J3-55	Receiver Type 5	Mem Busy		Test	MBUS
W4-P2-K2	J3-56		Discrete Mux Enable		Test	IDS03
W4-P2-K3	J3-57		Discrete Mux Enable		Test	IDS02
W4-P2-K4	J3-58		Discrete Mux Enable		Test	IDS00
W4-P2-K5	J3-59	Receiver Type 5	Phase Ctr Load Control		Test	NTC
W4-P2-K6	J3-60	Receiver Type 5	Phase Ctr Load Control	Test		FTC
W4-P2-L1	J3-61	Receiver Type 5	DMA Add	Test		MA13
W4-P2-L2	J3-62	Receiver Type 5	DMA Add	Test		MA14
W4-P2-L3	J3-63	Receiver Type 5	DMA Add	Test		MA15
W4-P2-L4	J3-64	Receiver Type 5	Phase Ctr Load Control	Test		DTC
W4-P2-L5	J3-65	Receiver Type 5	Proc Mem Cycle	Test		PMAC

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W4-P2-L6	J3-66	Receiver Type 5	Memory Disable	Test		MEMD
W4-P2-M1	J3-67	Receiver Type 5	RAM Data Input Sel	Test		S0B
W4-P2-M2	J3-68	Receiver Type 5	Power OFF Interrupt	Test		ON1*
W4-P2-M3	J3-69	Receiver Type 5	Sonar Data Interrupt	Test		SINT
W4-P2-M4	J3-70	Receiver Type 5	Display Interrupt	Test		APINT
W4-P2-M5	J3-71	Gnd	Spare			
W4-P2-M6	J3-72	Receiver Type 5	A/D Control Sig	Test		SAPRO*
W4-P2-N1	J3-73	Receiver Type 5	A/D Clocks	Test		SARCP*
W4-P2-N2	J3-74	Gnd		Test		SARCPR
W4-P2-N3	J3-75	Receiver Type 5	A/D Conv Int	Test		INT06
W4-P2-N4	J3-76	Receiver Type 5	Panel Interrupt	Test		PDINT
W4-P2-N5	J3-77	Receiver Type 5	Real Time Interrupt	Test		INT04
W4-P2-N6	J3-78	Receiver Type 5	Bit Interrupt	Test		INT03
W4-P2-P1	J3-79	Gnd		Test		GNDPIA
W4-P2-P2	J3-80	Receiver Type 5	A/D Control Signal	Test		NORM*
W4-P2-P3	J3-81	Receiver Type 5	A/D Control Signal		Test	TRANS*
W4-P2-P4	J3-82	Receiver Type 5	A/D Control Signal		Test	SAMRN*
W4-P2-P5	J3-83	Receiver Type 5	A/D Control Signal		Test	SAMRP*
W4-P2-P6	J3-84	Receiver Type 5	A/D Control Signal		Test	ADSLC
W4-P2-R1	J3-85	Receiver Type 5	A/D Control Signal		Test	NAD*
W4-P2-R2	J3-86	Receiver Type 5	A/D Control Signal		Test	ADSLO
W4-P2-R3	J3-87	Receiver Type 5	A/D Data		Test	CSARD
W4-P2-R4	J3-88	Receiver Type 5	A/D Control Signal		Test	SAMPR*
W4-P2-R5	J3-89	Receiver Type 5	Start S/D Conversion		Test	TPSSC*
W4-P2-R6	J3-90	Receiver Type 5	A/D Conv Address		Test	SAM00*
W4-P2-S1	J3-91	Receiver Type 5	A/D Conv Address		Test	SAM04*
W4-P2-S2	J3-92	Gnd				GSARDR

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W3-P3-A1	J4-1	Driver Type 1	Panel Input Serial Data (16 Bits)	TACCO		TACCO-
W3-P3-A2	J4-2	Driver Type 1	Panel Input Serial Data (16 Bits)	TACCO		TACCO+
W3-P3-A3	J4-3	Driver Type 1	Panel Input Serial Data (16 Bits)	SENSO		SENSO+
W3-P3-B2	J4-8	Reciever Type 1	Panel Address		TACCO	P ANA0-
W3-P3-B3	J4-9	Receiver Type 1	Panel Address		TACCO	PANA0+
W3-P3-B4	J4-10	Receiver Type 1	Panel Address		TACCO	PANA1-
W3-P3-B5	J4-11	Receiver Type 1	Panel Address		TACCO	PANA1+
W3-P3-B6	J4-12	DC Analog 8	Hook X Axis		TACCO	X HOOK
W3-P3-C1	J4-21	Receiver Type 1	Panel Address		TACCO	PANA2-
W3-P3-C2	J4-22	Receiver Type 1	Panel Address		TACCO	PANA2+
W3-P3-C3	J4-23	Receiver Type 1	Panel Address		TACCO	PANA3-
W3-P3-C4	J4-24	Receiver Type 1	Panel Address		TACCO	PANA3+
W3-P3-A4	J4-25	Driver Type 1	Panel Input Serial Data (16 Bits)	SENSO		SENSO-
W3-P3-A5	J4-26	DC Analog 1	Hook Excitation (+6V)		TACCO	+6V
W3-P3-A6	J4-27	DC Analog 1	Hook Excitation (-6V)		TACCO	-6V
W3-P3-M1	J4-28	DC Analog 1	+5VDC ±10%		SENSO	+5VDC
W3-P3-M2	J4-29	Gnd	Gnd		SENSO	GND
W3-P3-M3	J4-30	DC Analog 3	+28V Variable		SENSO	+28 VLT
W3-P3-M4	J4-31	Gnd	+28V RTN		SENSO	+28 VLR
W3-P3-C5	J4-40	Receiver Type 1	16 Bit Shift Frame		TACCO	PANSF-
W3-P3-C6	J4-41	Receiver Type 1	16 Bit Shift Frame		TACCO	PANSF+
W3-P3-D1	J4-42	Receiver Type 1	Panel Clock (62.5 KHz)		TACCO	PANCK-
W3-P3-D2	J4-43	Receiver Type 1	Panel Clock (62.5 KHz)		TACCO	PANCK+
W3-P3-D3	J4-44	Receiver Type 1	Panel Data (16 Bit Serial)		TACCO	PDATO-
W3-P3-D4	J4-45	Receiver Type 1	Panel Data (16 Bit Serial)		TACCO	PDATO+
W3-P3-B1	J4-48	DC Analog 8	Hook Y Axis	TACCO		Y HOOK
W3-P3-E1	J4-49	Discrete 1	DIM Control	SENSO		DIMA
W3-P3-E2	J4-50	Discrete 1	DIM Control	SENSO		DIMB

CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W3-P3-E3	J4-51	DC Analog 1	2-4V		SENSO	2-4V
W3-P3-E4	J4-52	Gnd	2-4V Return		SENSO	2-4VR
	J4-61	Receiver Type 1	Panel Data (16 Bit Serial)		SENSO	PDATO+

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W1-P2-A1	J5-1	Driver Type 6	Inhibit Clocks	Test		INH*
W1-P2-A2	J5-2	Gnd	Inhibit Clocks RTN	Test		INH*R
W1-P2-A3	J5-3	Driver Type 6	Ext Mem Enable	Test		XTM*
W1-P2-A4	J5-4	Gnd	Ext Mem Enable RTN	Test		XTM*R
W1-P2-A5	J5-5	Driver Type 6	DMA Enable	Test		DMAET
W1-P2-A6	J5-6	Gnd	DMA Enable RTN	Test		DMAETR
W1-P2-B1	J5-7	N/C				
W1-P2-B2	J5-8	N/C				
W1-P2-B3	J5-9	Driver Type 6	Bit Enable	Test		RINT0*
W1-P2-B4	J5-10	Gnd	Bit Enable RTN	Test		RINT0*R
	J5-11	N/C				
	J5-12	N/C				
W1-P2-B5	J5-13	DC Analog 3	+26V Monitor		Test	+26 VM0
	J5-14	N/C				
W1-P2-C1	J5-15	Receiver Type 7	Memory Disable		Test	MEND*
W1-P2-C2	J5-16	Gnd	Memory Disable RT		Test	MEND*R
W1-P2-C3	J5-17	Receiver Type 7	Clock Disable		Test	CLD
W1-P2-C4	J5-18	Gnd	Clock Disable RTN		Test	CLDR
W1-P2-C5	J5-19	Receiver Type 5	Halt on Error		Test	HALT*
W1-P2-C6	J5-20	Gnd	Halt on Error RTN		Test	HALT*R
W1-P2-D1	J5-21	Receiver Type 5	3 MHz Clock		Test	TECK*
W1-P2-D2	J5-22	Gnd	3 MHz Clock RTN		Test	TECK*R
W1-P2-D3	J5-23	Receiver Type 5	Enable Proc 2		Test	A3A
W1-P2-D4	J5-24	Gnd	Enable Proc 2 RTN		Test	A3AR
	J5-25		.			
W1-P2-D5	J5-26	DC Analog 2	-12V Monitor		Test	-12VM0
W1-P2-D6	J5-27	DC Analog 2	-15V Monitor		Test	-15VM0
	J5-28	N/C				
W1-P2-E1	J5-29	Driver Type 6	Ext Mem Input	Test	NAV COMP	I00
W1-P2-E2	J5-30	Driver Type 6	Ext Mem Input	Test	NAV COMP	I01
W1-P2-E3	J5-31	Driver Type 6	Ext Mem Input	Test	NAV COMP	I02

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W1-P2-E4	J5-32	Gnd	Ext Mem Input RTN	Test	NAV COMP	LGND01
W1-P2-E5	J5-33	Driver Type 6	Ext Mem Input	Test	NAV COMP	I03
W1-P2-E6	J5-34	Driver Type 6	Ext Mem Input	Test	NAV COMP	I04
W1-P2-F5	J5-35	Driver Type 6	Ext Mem Input	Test	NAV COMP	I05
W1-P2-F6	J5-36	Gnd	Ext Mem Input RTN	Test	NAV COMP	LGND02
W1-P2-F1	J5-37	Driver Type 6	Ext Mem Input	Test	NAV COMP	I06
W1-P2-F2	J5-38	Driver Type 6	Ext Mem Input	Test	NAV COMP	I07
W1-P2-F3	J5-39	Driver Type 6	Ext Mem Input	Test	NAV COMP	I08
W1-P2-F4	J5-40	Gnd	Ext Mem Input RTN	Test	NAV COMP	LGND03
W1-P2-G1	J5-41	Driver Type 6	Ext Mem Input	Test	NAV COMP	I09
W1-P2-G2	J5-42	Driver Type 6	Ext Mem Input	Test	NAV COMP	I10
W1-P2-G3	J5-43	Driver Type 6	Ext Mem Input	Test	NAV COMP	I11
W1-P2-G4	J5-44	Gnd	Ext Mem Input RTN	Test	NAV COMP	LGND04
W1-P2-G5	J5-45	Driver Type 6	Ext Mem Input	Test	NAV COMP	I12
W1-P2-G6	J5-46	Driver Type 6	Ext Mem Input	Test	NAV COMP	I13
W1-P2-H5	J5-47	Driver Type 6	Ext Mem Input	Test	NAV COMP	I14
W1-P2-H6	J5-48	Gnd	Ext Mem Input RTN	Test	NAV COMP	LGND05

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W1-P2-H1	J5-49	Driver Type 6	Ext Mem Input	Test	NAV COMP	115
W1-P2-H2	J5-50	Driver Type 6	Ext Mem Input	Test	NAV COMP	116
W1-P2-H3	J5-51	Driver Type 6	Ext Mem Input	Test	NAV COMP	117
W1-P2-H4	J5-52	Gnd	Ext Mem Input RTN	Test	NAV	LGND06
	J5-53 Thru J5-60	N/C				
W1-P1-B4	J5-61	Receiver Type 5	Interrupt	Test	NAV COMP	INT14
W1-P1-B5	J5-62	Gnd		Test	NAV COMP	
	J5-63	Receiver Type 5	Interrupt	Test	NAV COMP	INT15
W1-P1-K6	J5-64	Gnd		Test	NAV COMP	
W1-P2-K1	J5-65	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB00
W1-P2-K2	J5-66	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB01
W1-P2-K3	J5-67	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB02
W1-P2-K4	J5-68	Gnd	Proc. Data RTN	NAV COMP	Test	LGND09
W1-P2-L1	J5-69	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB03
W1-P2-L2	J5-70	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB04
W1-P2-L3	J5-71	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB05
W1-P2-L4	J5-72	Gnd	Proc. Data RTN	NAV COMP	Test	LGND10
W1-P2-L5	J5-73	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB06
W1-P2-L6	J5-74	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB07
W1-P2-M5	J5-75	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB08
W1-P2-M6	J5-76	Gnd	Proc. Data RTN	NAV COMP	Test	LGND11
W1-P2-M1	J5-77	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB09
W1-P2-M2	J5-78	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB10
W1-P2-M3	J5-79	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB11
W1-P2-M4	J5-80	Gnd	Proc. Data RTN	NAV COMP	Test	LGND12

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W1-P2-N1	J5-81	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB12*
W1-P2-N2	J5-82	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB13*
W1-P2-N3	J5-83	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB14*
W1-P2-N4	J5-84	Gnd	Proc. Data RTN	NAV COMP	Test	LGND13
W1-P2-N5	J5-85	Receiver Type 5	Proc. Data	NAV COMP	Test	ZB15*
W1-P2-N6	J5-86	N/C		NAV COMP	Test	ZB16*
W1-P2-P5	J5-87	N/C		NAV COMP	Test	ZB17*
W1-P2-P6	J5-88	Gnd		NAV COMP	Test	LGND14
	J5-89					
	Thru	N/C				
	J5-99					
W1-P2-R5	J5-100	DC Analog 1	+5V Monitor	NAV COMP	Test	+5VM0
W1-P2-S1	J5-101	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC00*
W1-P2-S2	J5-102	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC01*
W1-P2-S3	J5-103	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC02*
W1-P2-S4	J5-104	Gnd	Proc. Address RTN	NAV COMP	Test	LGND17
W1-P2-S5	J5-105	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC03*
W1-P2-S6	J5-106	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC04*
W1-P2-T5	J5-107	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC05*
W1-P2-T6	J5-108	Gnd	Proc. Address RTN	NAV COMP	Test	LGND18
W1-P2-T1	J5-109	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC06*
W1-P2-T2	J5-110	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC07*
W1-P2-T3	J5-111	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC08*
W1-P2-T4	J5-112	Gnd	Proc. Address RTN	NAV COMP	Test	LGND19
W1-P2-U5	J5-113	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC09*
W1-P2-U6	J5-114	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC10*
W1-P2-V5	J5-115	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC11*
W1-P2-V6	J5-116	Gnd	Proc. Address RTN	NAV COMP	Test	LGND20
W1-P2-V1	J5-117	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC12*
W1-P2-V2	J5-118	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC13*
W1-P2-V3	J5-119	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC14*
W1-P2-V4	J5-120	Gnd	Proc. Address RTN	NAV COMP	Test	LGND21
W1-P2-W1	J5-121	Receiver Type 5	Proc. Address	NAV COMP	Test	ZC15*
W1-P2-W2	J5-122	N/C				ZC16*

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W1-P2-W3	J5-123	N/C		NAV COMP		ZC17*
W1-P2-W4	J5-124	Gnd		NAV COMP		LGND22
	J5-125					
	Thru	N/C				
	J5-132					
W1-P2-Y1	J5-133	Receiver Type 5	Proc. Phase A	NAV COMP	Test	TPHA
W1-P2-Y2	J5-134	Receiver Type 5	Proc. Phase RTN	NAV COMP	Test	TPHAR
W1-P2-Y3	J5-135	Receiver Type 5	Proc. Phase B	NAV COMP	Test	TPHB
W1-P2-Y4	J5-136	Gnd	Proc. Phase B RTN	NAV COMP	Test	TPHBR
W1-P2-Y5	J5-137	Receiver Type 5	Proc. Phase C	NAV COMP	Test	TPHC
W1-P2-Y6	J5-138	Gnd	Proc. Phase C RTN	NAV COMP	Test	TPHCR
W1-P2-Z1	J5-139	Receiver Type 5	Proc. Phase 3	NAV COMP	Test	PH3B
W1-P2-Z2	J5-140	Gnd	Proc. Phase 3 RTN	NAV COMP	Test	PH3BR
	J5-141	N/C		NAV COMP		
W1-P2-Z3	J5-142	DC Analog 2	+15V Monitor	NAV COMP	Test	+15VMO
W1-P2-Z4	J5-143	Receiver Type 5	Proc. Inst Bit	NAV COMP	Test	TICA*
W1-P2-Z5	J5-144	Receiver Type 5	Proc. Inst Bit	NAV COMP	Test	TICB*
W1-P2-Z6	J5-145	Gnd	Proc. Inst Bit RTN	NAV COMP	Test	LG25
W1-P2-/A1	J5-146	Receiver Type 5	Proc. Inst Bit	NAV COMP	Test	TICC*
W1-P2-/A2	J5-147	Receiver Type 5	Proc. Inst Bit	NAV COMP	Test	ITCD*
W1-P2-/A3	J5-148	Gnd	Proc. Inst Bit RTN	NAV COMP	Test	LG26
W1-P2-/A4	J5-149	Receiver Type 5	Proc. Inst IDX	NAV COMP		TICE*
W1-P2-/A5	J5-150	Receiver Type 5	Proc. Inst IDX	NAV COMP	Test	TIBA*
W1-P2-/A6	J5-151	Gnd	Proc. Inst IDX RTN	NAV COMP	Test	LG27
W1-P2-U1	J5-152	Receiver Type 5	Proc. Inst IDX	NAV COMP	Test	TIBB*
W1-P2-U2	J5-153	Receiver Type 5	Proc. Inst IDX	NAV COMP	Test	TIBC*
W1-P2-U3	J5-154	Gnd	Proc. Inst IDX RTN	NAV COMP	Test	LG28
	J5-155	N/C				

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W2-P4-1	J6-1	Spare DC				SPDC1
W2-P4-2	J6-2	Spare RTN				SPDC1R
W2-P4-3	J6-3	N/C				
W2-P4-4	J6-4	N/C				
W2-P4-5	J6-5	Gnd LF	Lift Flag RTN	,		LFTLR
W2-P4-6	J6-6	Receiver Type 2	Lift Flag BDHI		BDHI	FLTFL*
W2-P4-7	J6-7	Synchro S3	Fly to Range (Unit)		BDHI	OPUS3
W2-P4-8	J6-8	N/C				
W2-P4-9	J6-9	N/C				
W2-P4-10	J6-10	N/C				
W2-P4-11	J6-11	Synchro S1	Spare			SPSYS1
W2-P4-12	J6-12	Synchro S1	Fly to Bearing		BDHI	UBRGS1
W2-P4-13	J6-13	Synchro S3	True Air Speed	TAS Transducer		TASS3
W2-P4-14	J6-14	Synchro S2	Fly to Range (Unit)		BDHI	OPUS2
W2-P4-15	J6-15	N/C				
W2-P4-16	J6-16	N/C				
W2-P4-17	J6-17	N/C				
W2-P4-18	J6-18	Synchro S2	Spare		.	SPSYS2
W2-P4-19	J6-19	Synchro S2	Fly to Bearing		BDHI	OBRGS2
W2-P4-20	J6-20	Synchro S2	Heading	AHRS	AHRS	MHDS2
W2-P4-21	J6-21	Synchro S2	True Airspeed	TAS		TASS2
W2-P4-22	J6-22	Synchro S1	Fly to Range (Unit)		BDHI	OPUS1
W2-P4-23	J6-23	N/C				
W2-P4-24	J6-24	N/C				
W2-P4-25	J6-25	Synchro S3	Spare			
W2-P4-26	J6-26	Synchro S3	Fly to Bearing		BDHI	OBRGS3
W2-P4-27	J6-27	Synchro S3	Heading	AHRS		MHDS3
W2-P4-28	J6-28	Synchro S1	Heading	AHRS		MHDS1
W2-P4-29	J6-29	Synchro S1	True Airspeed	TAS		TASS1
W2-P4-30	J6-30	Synchro S3	Fly to Range (Tens)		BDHI	OPTS3
W2-P4-31	J6-31	N/C				
W2-P4-32	J6-32	N/C				
W2-P4-33	J6-33	AC Analog 9	Drift Velocity	Doppler		VDA
W2-P4-34	J6-34	Synchro S1	Fly to Range (Hundreds)		BDHI	OPHS1

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W2-P4-35	J6-35	Synchro Ref	Synchro Ref	AHRS		IDEXHI
W2-P4-36	J6-36	Gnd	REF Return	AHRS		IDEXLO
W2-P4-37	J6-37	Synchro S2	Fly to Range (Tens)		BDHI	OPTS2
W2-P4-38	J6-38	N/C				
W2-P4-39	J6-39	N/C				
W2-P4-40	J6-40	N/C				
W2-P4-41	J6-41	AC Analog 10	Heading Velocity	Doppler		VHA
W2-P4-42	J6-42	Synchro S2	Fly to Range (Hundreds)		BDHI	OPHS2
W2-P4-43	J6-43	Synchro S3	Fly to Range (Hundreds)		BDHI	OPHS3
W2-P4-44	J6-44	Synchro S1	Fly to Range (Tens)		BDHI	OPTS1
W2-P4-45	J6-45					
W2-P4-46	J6-46					
W2-P4-47	J6-47					
W2-P4-48	J6-48	115V Ref	Doppler Supply Voltage	(Ref) Doppler		EXCIT
W2-P4-49	J6-49	Gnd	RTN	Doppler		VELCOM
W2-P4-50	J6-50	Driver Type 2	Out of Memory			DROOM
W2-P4-51	J6-51	N/C				
W2-P4-52	J6-52	Ground	Continuity Out			
W2-P4-53	J6-53	Ground	Continuity In			
W2-P4-54	J6-54	N/C				
W2-P4-55	J6-55	N/C				
W2-P4-A	J6-A	Shield Gnd				
W2-P4-B	J6-B	Shield Gnd				
W2-P4-C	J6-C	Shield Gnd				
W2-P4-D	J6-D	Shield Gnd				
W2-P4-I	J6-I	Shield Gnd				
W2-P4-J	J6-J	Shield Gnd				
W2-P4-K	J6-K	Shield Gnd				

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
	J7-1	N/C				
	J7-2	N/C				
	J7-3	N/C				
	J7-4	N/C				
W3-P3-F1	J7-5	Receiver Type 8	Display Data		Display	DAT06(-)
W3-P3-F2	J7-6	Receiver Type 8	Display Data		Display	DTA06(+)
W3-P3-A7	J7-7	Receiver Type 8	Display Data		Display	DTA07(-)
	J7-8	Gnd	Gnd			
	J7-9	N/C				
	J7-10	N/C				
W3-P3-B8	J7-11	Receiver Type 8	Display Data		Display	DTA05(+)
W3-P3-G2	J7-12	Receiver Type 8	Display Data		Display	DTA12(+)
W3-P3-C7	J7-13	Receiver Type 8	Display Data		Display	DTA13(-)
W3-P3-A8	J7-14	Receiver Type 8	Display Data		Display	DTA07(+)
W3-P3-D7	J7-15	Receiver Type 8	Display Strobe		Display	DTAST(-)
	J7-16	N/C				
	J7-17	N/C				
W3-P3-B7	J7-18	Receiver Type 1	Display Data		Display	DTA05(-)
W3-P3-G1	J7-19	Receiver Type 1	Display Data		Display	DTA12(-)
W3-P3-H1	J7-20	Driver Type 1	Request Fr Display		Display	DTARQ(-)
W3-P3-C8	J7-21	Receiver Type 8	Display Data		Display	DTA13(+)
W3-P3-E8	J7-22	Receiver Type 8	Display Data		Display	DTA08(+)
W3-P3-D8	J7-23	Receiver Type 8	Display Strobe		Display	DTAST(-)
	J7-24	N/C				
W3-P3-J2	J7-25	Receiver Type 8	Display Data		Display	DTA04(+)
W3-P3-N2	J7-26	Receiver Type 8	Display Data		Display	DTA11(+)
W3-P3-K2	J7-27	Receiver Type 8	Display Data		Display	DTA15(+)
W3-P3-H2	J7-28	Driver Type 1	Request Fr Display	Display		DTARQ(+)
W3-P3-M7	J7-29	Receiver Type 8	Display Data		Display	DTA14(-)
W3-P3-E7	J7-30	Receiver Type 8	Display Data		Display	DTA08(-)
W3-P3-M5	J7-31	Receiver Type 8	Display Data		Display	DTA00(-)
	J7-32	N/C				
W3-P3-J1	J7-33	Receiver Type 8	Display Data		Display	DTA04(-)
W3-P3-N1	J7-34	Receiver Type 8	Display Data		Display	DTA11(-)

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CONN TEST SET	CONN NAV COMP	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W3-P3-K1	J7-35	Receiver Type 8	Display Data		Display	DTA15(-)
W3-P3-M8	J7-36	Receiver Type 8	Display Data		Display	DTA14(+)
W3-P3-K3	J7-37	Receiver Type 8	Display Data		Display	DTA09(-)
W3-P3-M6	J7-38	Receiver Type 8	Display Data		Display	DTA00(+)
	J7-39	N/C				
	J7-40	N/C				
W3-P3-L4	J7-41	Receiver Type 8	Display Data		Display	DTA03(+)
W3-P3-L6	J7-42	Receiver Type 8	Display Data		Display	DTA10(+)
W3-P3-L5	J7-43	Receiver Type 8	Display Data		Display	DTA10(-)
W3-P3-K4	J7-44	Receiver Type 8	Display Data		Display	DTA09(+)
W3-P3-45	J7-45	Receiver Type 8	Display Data		Display	DTA01(-)
	J7-46	N/C				
	J7-47	N/C				
W3-P3-L3	J7-48	Receiver Type 8	Display Data		Display	DTA03(-)
W3-P3-L2	J7-49	Receiver Type 8	Display Data		Display	DTA02(+)
W3-P3-L1	J7-50	Receiver Type 8	Display Data		Display	DTA02(-)
W3-P3-K6	J7-51	Receiver Type 8	Display Data		Display	DTA01(+)
	J7-52					
	Thru	N/C				
	J7-55					

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CONN TEST SET	CONN TACCO	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W5-P1-1	J1-1	Power	+5VDC ±10% @ 1 Amp	NAV COMP		+5VDC1
W5-P1-2	J1-2	Ground	Ground	NAV COMP		+5VDC RET
W5-P1-3	J1-3	Power	Pins 1 and 3 connected in Panel	NAV COMP		+5VDC2
W5-P1-2	J1-4	Ground	Ground	NAV COMP		+5VDC RET
W5-P3-Shell	J1-5	Ground	Shield Ground	NAV COMP		
	J1-6	N/C				
	J1-7	N/C				
	J1-8	N/C				
W5-P1-4	J1-9	Power	+28VDC ±2V @ 2 Amps (+28V Green)	NAV COMP		+28V Green
W5-P1-2	J1-10	Ground	+28V RTN	NAV COMP		+28V Lighting RET
	J1-11	N/C				
	J1-12	N/C				
W5-P2-A1	J1-13	Discrete 2	Power On Signal	NAV COMP		PWR ON
	J1-14	N/C				
	J1-15	N/C				
	J1-16	N/C				
W5-P1-6	J1-17	Power	+28VDC +VDC 1.9 Amps (+28VDC Red)	Aircraft		+28VDC Red
W5-P1-7	J1-18	Ground	+28V RTN	Aircraft		+28VDC RET
W5-P1-8	J1-19	Ground	Chassis Ground	Aircraft		Chassis Gnd

CONN TEST SET	CONN TACCO	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W5-P2-A2	J2-1	Receiver Type 1	Serial Data (-)		NAV COMP COMP	TACCO (-)
W5-P2-A3	J2-2	Receiver Type 1	Serial Data (+)		NAV COMP	TACCO (+)
W5-P2-A4	J2-3	Driver Type 1	Panel Address (-)	NAV COMP		PANA0(-)
W5-P2-A5	J2-4	Driver Type 1	Panel Address (+)	NAV COMP		PANA0(+)
W5-P2-A6	J2-5	Driver Type 1	Panel Address (-)	NAV COMP		PANA1(-)
W5-P2-B1	J2-6	Driver Type 1	Panel Address (+)	NAV COMP		PANA1(+)
W5-P2-B2	J2-7	Driver Type 1	Panel Address (-)	NAV COMP		PANA2(-)
W5-P2-B3	J2-8	Driver Type 1	Panel Address (+)	NAV COMP		PANA2(+)
	J2-9	N/C				
W5-P2-B4	J2-10	Driver Type 1	Panel Address (-)	NAV COMP		PANA3(-)
W5-P2-B5	J2-11	Driver Type 1	Panel Address (+)	NAV COMP		PANA4(+)
W5-P2-B6	J2-12	Driver Type 1	Panel Shift Frame (-)	NAV COMP		PANSF(-)
W5-P2-C1	J2-13	Driver Type 1	Panel Shift Frame (+)	NAV COMP		PANSF(+)
W5-P2-C2	J2-14	Driver Type 1	Panel Clock (-) (62.5 KHz)	NAV COMP		PANCK(-)
W5-P2-C3	J2-15	Driver Type 1	Panel Clock (+) (62.5 KHz)	NAV COMP		PANCK(+)
W5-P2-C4	J2-16	Driver Type 1	Serial Data (-) (16 Bits)	NAV COMP		PDATO(-)
W5-P2-C5	J2-17	Driver Type 1	Serial Data (+) (16 Bits)	NAV COMP		PDATO(+)
	J2-18 thru J2-33	N/C				
W5-P1-9	J2-34	Power	+6VDC ±3% 200 MA	NAV COMP		+6V
W5-P1-10	J2-35	Power	-6VDC ±3% 200 MA	NAV COMP		-6V
W5-P2-D1	J2-36	DC Analog 5	DC Analog Voltage	NAV COMP		X HOOK
W5-P2-D2	J2-37	DC Analog 5	DC Analog Voltage	NAV COMP		Y HOOK

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CONN TEST SET	CONN SENSO	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W5-P1-5	J1-1	Power	+5VDC ±10% @ 1.1 Amps	NAV COMP		+5VDC1
W5-P1-2	J1-2	Gnd	Ground	NAV COMP		+5VDC RET
W5-P1-13	J1-3	Power	Pins 1 and 3 connected in panel	NAV COMP		+5VDC2
W5-P1-14	J1-4	Gnd	Ground			+5VDC RET
W5-P1-14	J1-5	N/C		NAV COMP		
	J1-6	N/C				
W5-P2-D3	J1-7	Receiver Type 5	DIM Control		NAV COMP	DIMA
W5-P2-D4	J1-8	Receiver Type 5	DIM Control		NAV COMP	DIMB
W5-P1-15	J1-9	Power	+28VDC ±2V @ .5 Amps	NAV COMP		+28VDC Lighting
W5-P1-16	J1-10	Gnd	+28V RTN	NAV COMP		+28VDC Lighting RET
	J1-11		Chassis Gnd			Chassis Gnd
	J1-12		Chassis Gnd			Chassis Gnd
	J1-13	N/C				
W5-P1-17	J1-14	Power	2V to 4VDC @ .42 Amps	NAV COMP		+2 to +4 VDC
W5-P1-18	J1-15	Gnd	2V to 4V RTN	NAV COMP		+2 to +4 VDC RET
	J1-16	N/C				
W5-P1-11	J1-17	Power	+28VDC +2V @ .75 Amps	Aircraft		+28VDC
W5-P1-12	J1-18	Gnd	+28V RTN	Aircraft		+28VDC RET

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CONN TEST SET	CONN SENSO	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W5-P1-19	J1-19	Gnd	Chassis Gnd	Aircraft		Chassis GND

CONN TEST SET	CONN SENSO	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W5-P2-D5	J2-1	Receiver Type 1	16 Bit Serial Data (-)	NAV COMP		SENSO(-)
W5-P2-D6	J2-2	Receiver Type 1	16 Bit Serial Data (+)	NAV COMP		SENSO(+)
W5-P2-E1	J2-3	Driver Type 1	Parallel Address Line (-)	NAV COMP		PANA0(-)
W5-P2-E2	J2-4	Driver Type 1	Parallel Address Line (+)	NAV COMP		PANA0(+)
W5-P2-E3	J2-5	Driver Type 1	Parallel Address Line (-)	NAV COMP		PANA1(-)
W5-P2-E4	J2-6	Driver Type 1	Parallel Address Line (+)	NAV COMP		PANA1(+)
W5-P2-E5	J2-7	Driver Type 1	Parallel Address Line (-)	NAV COMP		PANA2(-)
W5-P2-E6	J2-8	Driver Type 1	Parallel Address Line (+)	NAV COMP		PANA2(+)
	J2-9	N/C				
W5-P2-F1	J2-10	Driver Type 1	Parallel Address Line (-)	NAV COMP		PANA3(-)
W5-P2-F2	J2-11	Driver Type 1	Parallel Address Line (+)	NAV COMP		PANA3(+)
W5-P2-F3	J2-12	Driver Type 1	16 Bit Shift Frame	NAV COMP		PANSF(-)
W5-P2-F4	J2-13	Driver Type 1	16 Bit Shift Frame	NAV COMP		PANSF(+)
W5-P2-F5	J2-14	Driver Type 1	62.5 KHz Sq Wave (-)	NAV COMP		PANCK(-)
W5-P2-F6	J2-15	Driver Type 1	62.5 KHz Sq Wave (+)	NAV COMP		PANCK(+)
W5-P2-G1	J2-16	Driver Type 1	16 Bit Serial Data (-)	NAV COMP		PDAT1(-)
W5-P2-G2	J2-17	Driver Type 1	16 Bit Serial Data (+)	NAV COMP		PDAT1(+)

CONN TEST SET	CONN DISPLAY	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W6-P3-A1	J1-1	Receiver Type 1	Data Request (+)		NAV Comp	DTARQ(+)
W6-P3-A2	J1-2	Receiver Type 1	Data Request (-)		NAV Comp	DTARQ(-)
W6-P3-A3	J1-3	Driver Type 1	Parallel Data Bit 15 (+)	NAV Comp		DTA15(+)
W6-P3-A4	J1-4	Driver Type 1	Parallel Data Bit 15 (-)	NAV Comp		DTA15(-)
W6-P3-A5	J1-5	Driver Type 1	Parallel Data Bit 14 (+)	NAV Comp		DTA14(+)
W6-P3-A6	J1-6	Driver Type 1	Parallel Data Bit 14 (-)	NAV Comp		DTA14(-)
W6-P3-B1	J1-7	Driver Type 1	Parallel Data Bit 13 (+)	NAV Comp		DTA13(+)
W6-P3-B2	J1-8	Driver Type 1	Parallel Data Bit 13(-)	NAV Comp		DTA13(-)
W6-P3-B3	J1-9	Driver Type 1	Parallel Data Bit 12 (+)	NAV Comp		DTA12(+)
W6-P3-D1	J1-10	Driver Type 1	Parallel Data Bit 07 (+)	NAV Comp		DTA07(+)
W6-P3-B6	J1-11	Driver Type 1	Parallel Data Bit 08 (-)	NAV Comp		DTA08(-)
W6-P3-B5	J1-12	Driver Type 1	Parallel Data Bit 08 (+)	NAV Comp		DTA08(+)
W6-P3-C2	J1-13	Driver Type 1	Parallel Data Bit 09 (-)	NAV Comp		DTA09(-)
W6-P3-C1	J1-14	Driver Type 1	Parallel Data Bit 09(+)	NAV Comp		DTA09(+)
W6-P3-C4	J1-15	Driver Type 1	Parallel Data Bit 10 (-)	NAV Comp		DTA10(-)
W6-P3-C3	J1-16	Driver Type 1	Parallel Data Bit 10')	NAV Comp		DTA10(+)
W6-P3-C6	J1-17	Driver Type 1	Parallel Data Bit 11(-)	NAV Comp		DTA11(-)
W6-P3-C5	J1-18	Driver Type 1	Parallel Data Bit 11 (+)	NAV Comp		DTA11(+)
W6-P3-B4	J1-19	Driver Type 1	Parallel Data Bit 12 (-)	NAV Comp		DTA12(-)
W6-P3-D2	J1-20	Driver Type 1	Parallel Data Bit 07 (-)	NAV Comp		DTA07(-)
W6-P3-D3	J1-21	Driver Type 1	Parallel Data Bit 06 (+)	NAV Comp		DTA06(-)
W6-P3-D4	J1-22	Driver Type 1	Parallel Data Bit 06 (-)	NAV Comp		DTA06(-)
W6-P3-D5	J1-23	Driver Type 1	Parallel Data Bit 05 (+)	NAV Comp		DTA05(+)
W6-P3-D6	J1-24	Driver Type 1	Parallel Data Bit 05 (-)	NAV Comp		DTA05(-)
W6-P3-E1	J1-25	Driver Type 1	Parallel Data Bit 04 (+)	NAV Comp		DTA04(-)
W6-P3-E2	J1-26	Driver Type 1	Parallel Data Bit 04 (-)	NAV Comp		DTA04(-)
W6-P3-E3	J1-27	Driver Type 1	Parallel Data Bit 03 (+)	NAV Comp		DTA03(+)
W6-P3-E4	J1-28	Driver Type 1	Parallel Data Bit 03 (-)	NAV Comp		DTA03(-)
W6-P3-E5	J1-29	Driver Type 1	Parallel Data Bit 02 (+)	NAV Comp		DTA02(+)
W6-P3-E6	J1-30	Driver Type 1	Parallel Data Bit 02 (-)	NAV Comp		DTA02(-)
W6-P3-F1	J1-31	Driver Type 1	Parallel Data Bit 01 (+)	NAV Comp		DTA01(+)
W6-P3-F2	J1-32	Driver Type 1	Parallel Data Bit 01 (-)	NAV Comp		DTA01(-)
W6-P3-F3	J1-33	Driver Type 1	Parallel Data Bit 00 (+)	NAV Comp		DTA00(+)
W6-P3-F4	J1-34	Driver Type 1	Parallel Data Bit 00 (-)	NAV Comp		DTA00(-)

CONN TEST SET	CONN DISPLAY	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W6-P3-F5	J1-35	Driver Type 1	Strobe (+)	NAV Comp		DTAST(+)
W6-P3-F6	J1-36	Driver Type 1	Strobe (-)	NAV Comp		DTAST(-)
W6-P1-1	J1-37	Gnd	Logic Gnd	NAV Comp		GND06
W6-P2-G1	J1-38	Spare				SPP4A
W6-P2-G2	J1-39	Spare				SPP4B
	J1-40	N/C				
W6-P1-2	J1-41	Power	+28VDC ±2VDC	Aircraft		+28VLT
W6-P1-3	J1-42	Gnd	+28VDC RTN	Aircraft		28VLT RET
	J1-43	N/C				
W6-P1-5	J1-44	Power	+28VDC ±2V	Aircraft		+28VPW
W6-P1-6	J1-45	RTN	+28VDC RTN	Aircraft		28VPW RET
	J1-46	N/C				
W6-P1-4	J1-47	Gnd	Chassis Gnd	Aircraft		GND CHA
W6-P3-G3	J1-48	Spare				SPP4C
W6-P3-G4	J1-49	Spare				SPP4D
W6-P1-7	J1-50	115V ØA Power	115V 400 HZ +	Aircraft		+115V
W6-P1-8	J1-51	115V Neutral	115V 400 HZ -	Aircraft		-115V

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CONN TEST SET	CONN DISPLAY	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W6-P2-A1	J2-1	Driver Type 7	Overtemp Sense & Control	Test		OTMPSN
W6-P2-A2	J2-2	Gnd	Chassis Gnd		Test	CHGRD1
W6-P5-3	J2-3	Gnd	Power Supply Gnd		Test	PWRGR1
W6-P2-A4	J2-4	AC/DC Analog 1	X Yoke Current Sample		Test	XSAMP
W6-P2-A5	J2-5	AC/DC Analog 1	Y Yoke Current Sample		Test	YSAMP
W6-P2-A6	J2-6	AC/DC Analog 2	X DAC Output		Test	XDAC
W6-P2-B1	J2-7	AC/DC Analog 2	Y DAC Output		Test	YDAC
W6-P2-B2	J2-8	Driver Type 5	High Voltage Disable	Test		
W6-P2-B3	J2-9	DC Analog 4	+5 VDC		Test	
	J2-10				Test	
	J2-11				Test	
W6-P2-B4	J2-12	Receiver Type 5	Display Clock		Test	MC4N
W6-P2-C1	J2-13	Receiver Type 5	End of Slew		Test	EOS
	J2-14				Test	
	J2-15				Test	
W6-P2-C3	J2-16	Receiver Type 5	Load X DAC		Test	LDX
W6-P2-C5	J2-17	Receiver Type 5	Load Y DAC		Test	LDY
W6-P2-D1	J2-18	Receiver Type 5	X DAC Enable		Test	XE
W6-P2-D3	J2-19	Receiver Type 5	Y DAC Enable		Test	YE
W6-P2-D5	J2-20	DC Analog 5	PS LV Feedback		Test	PSFB
W6-P2-D6	J2-21	DC Analog 5	HV PS Bit		Test	HVPS
W6-P2-E1	J2-22	Receiver Type 5	J Reg Bit 10		Test	J10
W6-P2-E3	J2-23	DC Analog 4	+5 VDC		Test	
W6-P2-E4	J2-24	DC Analog 7	Video Sensor		Test	VS
W6-P2-E5	J2-25	Discrete 10	Video Test Input			VID102
W6-P2-F1	J2-26	Receiver Type 5	Symbol Gen Enable		Test	SGE
W6-P2-F3	J2-27	Receiver Type 5	Symbol Gen Mode 2^0		Test	ALUC3
W6-P2-F5	J2-28	Receiver Type 5	Symbol Gen Mode 2^1		Test	ALUC4
	J2-29	Receiver Type 5	Set Data Request		Test	SDR
W6-P2-G1	J2-30	Receiver Type 5	Mode Latch Clock		Test	MLCK
W6-P2-G3	J2-31	DC Analog 5	+12 VDC		Test	+12V01
	J2-32	Receiver Type 5	Test Timer		Test	TT
	J2-33	Receiver Type 5	K Reg Bit 11		Test	K11

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CONN TEST SET	CONN DISPLAY	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W6-P2-G4	J2-34	DC Analog 5	+15 VDC		Test	+15 V01
W6-P2-G5	J2-35	DC Analog 6	+15 VDC		Test	+15 V03
	J2-36	Receiver Type 5	Lo Char Mem Add Ctr		Test	CMACLD
	J2-37	Receiver Type 5	Set Int Timer		Test	SIT
	J2-38	Receiver Type 5	Mux Latch Clock		Test	MOLCK
	J2-39	Receiver Type 5	Set Test Timer		Test	STT
	J2-40	Receiver Type 5	Char Mem Add Ctr		Test	CMACCK
W6-P2-G6	J2-41	DC Analog 5	+12 VDC		Test	-12 V01
	J2-42	Receiver Type 5	Char Gen Video On/Off		Test	L14
	J2-43	Receiver Type 5	Char Gen Video On/Off		Test	L13
	J2-44	Receiver Type 5	Char Gen Slope 2^4		Test	L12
	J2-45	Receiver Type 5	Char Gen Slope 2^3		Test	L11
	J2-46	Receiver Type 5	Char Gen Slope 2^2		Test	L10
	J2-47	Receiver Type 5	Char Gen Slope 2^1		Test	L9
	J2-48	Receiver Type 5	Char Gen Slope 2^0		Test	L8
	J2-49	Receiver Type 5	Char Gen End of Store		Test	L7
	J2-50	Receiver Type 5	Char Gen Length Sign		Test	L6
	J2-51	Receiver Type 5	Char Gen Length 2^4		Test	L4
	J2-52	Receiver Type 5	Char Gen Length 2^3		Test	L3
	J2-53	Receiver Type 5	Char Gen Length 2^2		Test	L2
	J2-54	Receiver Type 5	Char Gen Length 2^1		Test	L1
	J2-55	Receiver Type 5	Char Gen Length 2^0		Test	L0
W6-P2-H1	J2-56	Receiver Type 5	J Reg ALU Carry		Test	ALU16
	J2-57	Receiver Type 5	J Reg Clock		Test	JCK
	J2-58	Receiver Type 5	K Clock		Test	CKK
	J2-59	Receiver Type 5	J & K Reg Clear		Test	JAKCLR
W6-P2-H3	J2-60	DC Analog 5	-15 VDC		Test	-15 V01
	J2-61	Receiver Type 5	Char Gen Y Y K		Test	L15
W6-P2-H5	J2-62	Receiver Type 5	Command Reg Bit 15		Test	CR15
W6-P2-J1	J2-63	Receiver Type 5	Command Reg Bit 14		Test	CR14
W6-P2-J3	J2-64	Receiver Type 5	Command Reg Bit 13		Test	CR13
W6-P2-J5	J2-65	Receiver Type 5	Command Reg Bit 12		Test	CR12
W6-P2-K1	J2-66	Receiver Type 5	Command Reg Bit 11		Test	CR11
W6-P2-K3	J2-67	Receiver Type 5	Command Reg Bit 10		Test	CR10

CONN TEST SET	CONN DISPLAY	SIGNAL TYPE	SIGNAL CHARACTERISTIC	SIGNAL SIMULATION		SIGNAL NAME
				SOURCE	DESTN	
W6-P2-K5	J2-68	Receiver Type 5	Command Reg Bit 9		Test	CR9
W6-P2-L1	J2-69	Receiver Type 5	Command Reg Bit 8		Test	CR8
W6-P2-L3	J2-70	Receiver Type 5	Command Reg Bit 7		Test	CR7
W6-P2-L5	J2-71	Receiver Type 5	Command Reg Bit 6		Test	CR6
W6-P2-M1	J2-72	Receiver Type 5	Command Reg Bit 5		Test	CR5
W6-P2-M3	J2-73	Receiver Type 5	Command Reg Bit 4		Test	CR4
W6-P2-M5	J2-74	Receiver Type 5	Command Reg Bit 3		Test	CR3
W6-P2-N1	J2-75	Receiver Type 5	Command Reg Bit 2		Test	CR2
W6-P2-N3	J2-76	Receiver Type 5	Command Reg Bit 1		Test	CR1
W6-P2-N5	J2-77	Receiver Type 5	Command Reg Bit 0		Test	CR0
W6-P2-P1	J2-78	Receiver Type 5	Command Reg Clock		Test	CRCK
	J2-79	Receiver Type 5	Command Reg Clear		Test	CRCL
W6-P2-P3	J2-80		Data Request		Test	DR
W6-P2-P5	J2-81	AC/DC Analog 2	X DEFL Amp Out		Test	XDEFL
W6-P2-P6	J2-82	AC/DC Analog 2	Y DEFL Amp Out		Test	YDEFL
W6-P2-R1	J2-83	AC/DC Analog 1	X Sample Transformer		Test	EOSX
W6-P2-R2	J2-84	AC/DC Analog 1	Y Sample Transformer		Test	EOSY
W6-P2-R3	J2-85	DC Analog 6			Test	

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