

ENGINEERING SPECIFICATION	SECURITY NOTATION	SPEC NO. IT7510700-850	B REV LTR
		CAGE CODE 55939	
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DOCUMENT TYPE INTEGRATED TEST SPECIFICATION	CLASS A	INITIAL RELEASE DATE 18 JUN 01
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DIVISION AES – BELL RD.	DEPARTMENT NO. 450480	PRODUCT LINE NO. 3851	CONTRACT NO.
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TITLE
INTEGRATED TEST SPECIFICATION RCZ-852, REMOTE COMMUNICATIONS UNITS,
PART NO. 7510700-850

PREPARED BY: M. Howk	DATE 6-13-01	APPROVED BY TECHNICAL MANAGER R. Fuller	DATE 6-13-02	APPROVED BY ENGINEERING DEPARTMENT MANAGER	DATE
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APPROVED FOR SCM	DATE	APPROVED FOR SQA	DATE	APPROVED BY:	DATE
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REF AWAEB/PSAEB NO. EB7510800	CHECKER	PRODUCT DESIGN CHECKER (FOR REF, SPCL CONT PER EPM 1-A-40)	COGNIZANCE OF QE SUPVR (FOR REF, SPCL CONT PER EPM 1-A-40)
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FOR PAGE INDEX, SEE PAGE CR-2. REVISION RECORD FOLLOWS PAGE INDEX.
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B	<p><u>TITLE:</u> INTEGRATED TEST SPECIFICATION RCZ-852, REMOTE COMMUNICATIONS UNITS, PART NO. 7510700-850</p>
B	<p>1. SCOPE</p> <p>This Integrated Test Specification (IT) establishes the manufacturing and operational requirements the RCZ-852. Unit must meet to ensure the unit is in satisfactory operating condition. This IT also contains the detailed test procedures to test for these requirements.</p>
B	<p>2. REFERENCE DOCUMENTS</p> <p>These reference documents are not required for performance of the test procedure. The purpose of these documents is to provide an aid in troubleshooting should any discrepancies occur during performance of the test procedure.</p>
B	Product Specification: PS7510700-850
B	Final Assy: 7510700-850
	Interconnect: 7510708
	Outline & Inst.: 7510706
B	<p>2.1 <u>Software and Documentation</u></p> <p>The manufacturing test specification for use with the Computer Aided Test Station (CATS) is MT7510700-850.</p>

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3. GENERAL INFORMATION

To set and monitor the functions of the Remote Communications Unit, a Radio Test Interface Unit, Part No. 7511400-9XX, with harness assembly - RTIU - RCZ-85X, Part No. 7511409-9XX, is recommended. The RTIU and the harness assembly are not applicable to RF signals applied to or generated by the VHF COM Transceiver, the Mode S Transponder, or the signals monitored or manipulated using external equipment.

Abbreviations:

- AUX Auxiliary Tuning Source
- AUX1 Auxiliary Audio Channel No. 1
- AUX2 Auxiliary Audio Channel No. 2
- AUX3 Auxiliary Audio Channel No. 3
- AUX4 Auxiliary Audio Channel No. 4
- COM Communication
- RTIU Radio Test Interface Unit
- RSB Radio System Bus
- TDR Mode S Transponder
- UUT Unit Under Test

- 3.1** All tests shall be performed under conditions of 25 ± 10 °C and less than 90 percent relative humidity, unless otherwise specified.
- 3.2** All input signals shall be applied between the designated terminal and ground, unless otherwise stated. All output voltages shall be measured at the designated terminal with respect to ground, unless otherwise stated.
- 3.3** No warmup period is required.
- 3.4** The RF signal generator output impedance shall comprise a resistance 50 ± 5 ohms and a reactance of not more than 5 ohms.
- 3.5** Unless otherwise specified, all tests shall be performed with the equipment antenna jacks connected to a 50 ohm non-radiating load.
- 3.6** To limit interference and power loss, the transponder antenna cable shall be made of RG-214 coaxial cable, 2 to 3 feet in length is recommended.
- 3.7** The Transponder power output reading shall be corrected by the Antenna cable losses.

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4. POWER AND SIGNAL REQUIREMENTS

Power Sources - +27.5 ± 0.5 V dc/10 A at the unit.

5. TEST EQUIPMENT

NOTE: Unless otherwise specified, equivalent equipment substitutes may be used for items listed.

5.1 Honeywell Test Equipment

- Remote Test Interface Unit (RTIU), Part No. 7511400-901 or -902
- Harness Assembly - RTIU

MODEL NO.	COM UNIT	RTIU CABLE
RCZ-852	7510700-850	7511409-923

- RTIU Basic Software 7512001-XYX where X specifies the Medium Type (1 is 5 1/4" Floppy Disks) and YY is 05 or greater software version.

NOTE: RTIU software versions 7512001-105 thru -108 are used on RTIU P/N 7511400-901, software version 7512001-109 or later is used on RTIU P/N 7511400-902.

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REV LTR	<p>5.2 <u>Commercial Test Equipment</u></p> <p>Personal Computer with following:</p> <ul style="list-style-type: none"> • IBM compatible • 640K, or more, RAM • At least one 1.2 or 1.44 Megabyte floppy disk drive and at least 20 Megabytes of free hard disk space • Monochrome or color monitor (with EGA, MDA, but not CGA) • One serial port minimum free • 8 MHz, or more, clock speed for -108 RTIU software, and a 12 MHz or greater 286, 386, 386SX, 486 or better PC for -109 software. • RS-232 cable <p>Digital Voltmeter, Keithley 178 or equivalent Oscilloscope, Tektronix 2430A Digital Storage Oscilloscope or equivalent Frequency Counter, Phillips PM6614 or equivalent ATC-1400A Transponder Test Set (IFR) S-1403, Mode S Auxiliary Unit (IFR) JC Air 429 Test Set or Equivalent</p> <p>5.3 <u>Transponder Interrogations and Replies</u></p> <p>See Appendix A.</p>
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6. TEST SETUP

1. Make test setup in accordance with Figure 1.
2. Turn RTIU 28 V DC SW OFF.
Turn RTIU 400 HZ SW OFF.
Turn Master Switch ON.
Turn Commercial Test Equipment ON.
Turn RTIU Main Power SW ON.
3. Initial setup of IFR 1400:
XPDR MODE: MODE A
INTERR/INTERF PULSE: OFF
FREQ/FUNCT: 1030 MHz, XPDR
DELTA F: OFF
PRF/SQTR: 450, ON
DISPLAY SELECT: XPDR CODE
DME REPLY EFF: N/A
RF LEVEL: -50 dBm, CW/NORM/OFF: NORM
TACAN: N/A
IDENT: OFF
F2/P2/F1/P1: F1/P1
TO/TAC/TD: TO
XPDR DEV P2/CAL: CAL, P3/CAL: CAL, P2/P3 DEV: 0.0, 1.0 uS/1.45 uS: 1.0 uS
DME DEV P2/CAL: N/A
RANGE/VEL/ACCEL: N/A
XPDR PULSE WIDTH: CAL
MAN/AUTO/MAN STEP: MAN
SUPPRESSOR: OFF
SLS/ECHO: -0, OFF
FREQ STEP RATE: CCW, OFF

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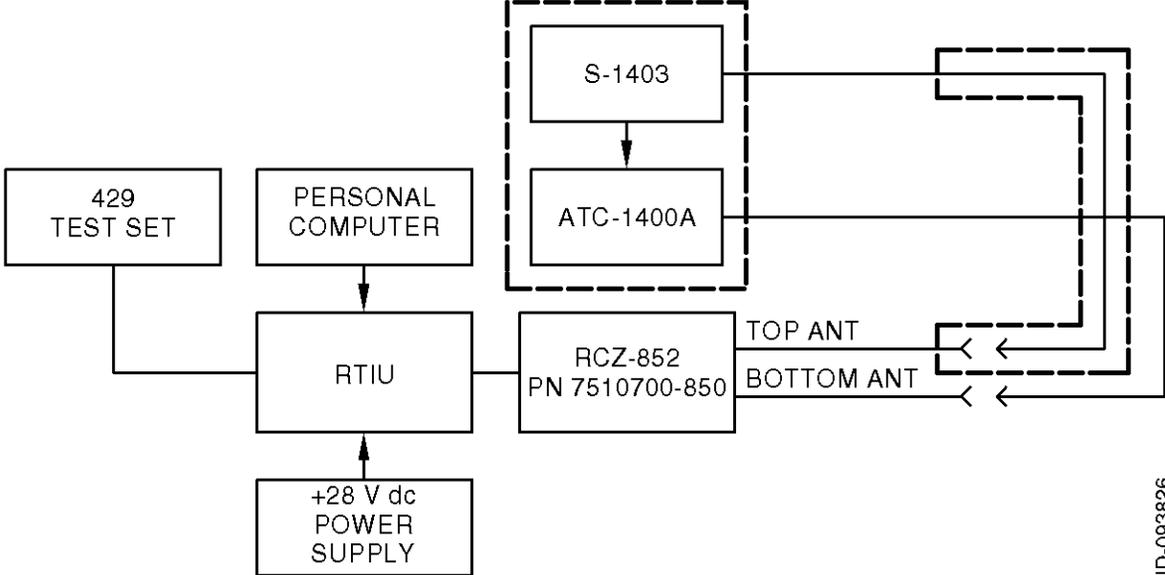
REV LTR	<p>4. Initial setup of IFR S-1403. <u>Sequence Menu</u></p> <p>S01:FMT D, UF #04, PC=0, RR=20, DI=0, SD=0, ADD=00000001 (OCT) S02 through S16: OFF</p> <p><u>Control Menu 1</u></p> <p>Func: (1) ATC (ATCRBS Only) RF Lvl: +0.0 P3: CAL ANT B: OFF</p> <p><u>Control Menu 2</u></p> <p>Ext. Sync: OUT=OFF, Dv=+0.00; IN=OFF Pulse Power Gate: f1 Ext. Mod. In: OFF</p> <p>5. Initial Setup of JC-AIR 429 Test Set</p> <p>TX PARITY: ODD TX SPEED: LOW RX SPEED: HIGH DISPLAY: HEX TRANSMIT MODE LABEL = 203 DATA = ED8040 WORD RATE = 50 Milliseconds</p> <p>NOTE: ARINC 429 Transmitter Buses go to pins "P1Yn" and "P1Xn," where "n" is a row number on the RTIU front panel (1 to 6), and "P1" corresponds to the "J1" panel on the front panel. The RTIU pins which correspond to "P1Yn" and "P1Xn" are labeled "SPARE BUS." The "Y" column is labeled "HI," and the "X" column is labeled "LO."</p> <p>Connect transmitter to RTIU pins P1G6 (HI) and P1H6 (LO).</p> <p>6. Insert UUT into mount. Connect transponder antenna per Figure 2.</p>
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B B



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Figure 1. Test Setup

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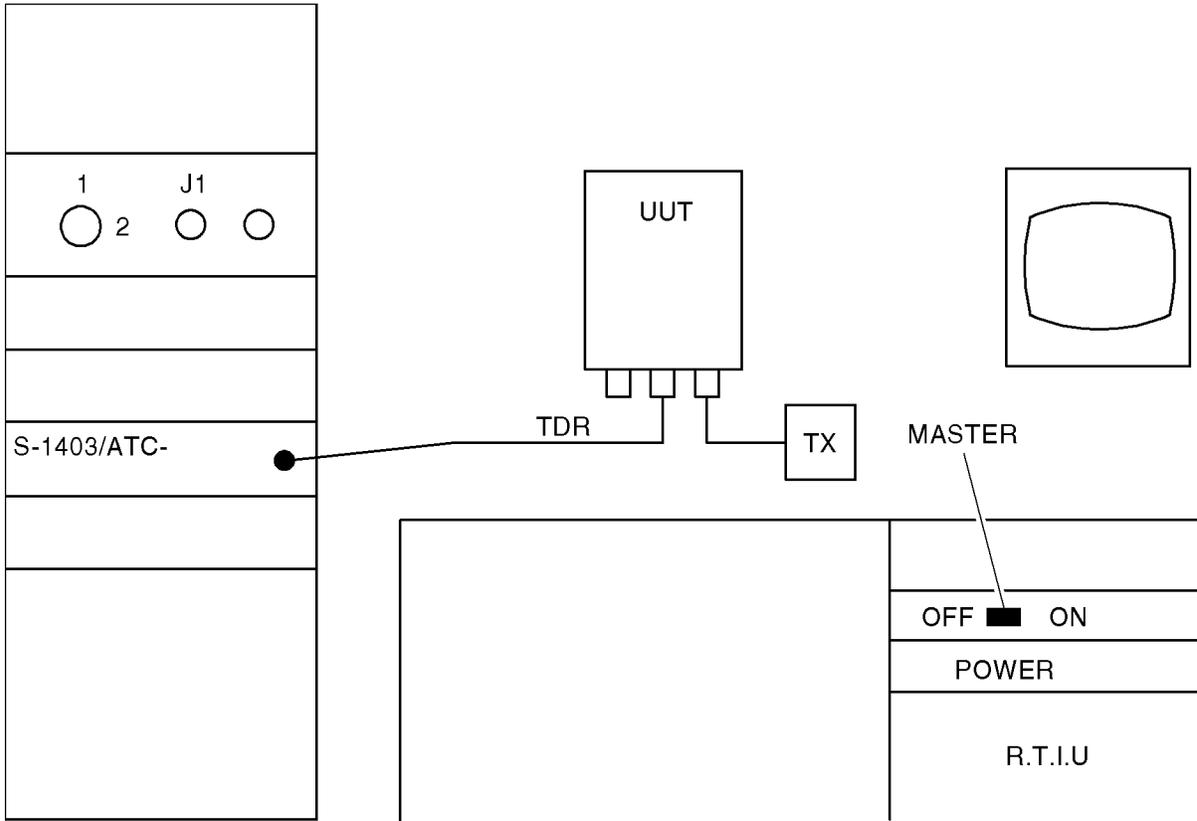


Figure 2. (For -850)

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REV LTR	<p>7. TEST FORMAT DESCRIPTION</p> <table border="0"> <thead> <tr> <th style="text-align: left;"><u>Column</u></th> <th style="text-align: left;"><u>Description</u></th> </tr> </thead> <tbody> <tr> <td>Rev Ltr</td> <td>This column is used to identify revised material.</td> </tr> <tr> <td>Test No.</td> <td>Tests are numbered in sequence.</td> </tr> <tr> <td>Opr Limits</td> <td>Unit under test (UUT) shall meet these limits when tested at other than manufacturing facility. When an item is marked OPTIONAL, the corresponding test is not required except as an aid in troubleshooting.</td> </tr> <tr> <td>Test Description</td> <td>These items are the parameters to which the UUT was designed and aid in troubleshooting by specifying the input and output signal terminals. All conditions required are not repeated for each test, and conditions established in previous tests also apply.</td> </tr> <tr> <td>Switch Pos</td> <td>Positions to which switches must be set are listed in required order and are grouped to correspond to applicable Work Steps.</td> </tr> <tr> <td>Work Steps</td> <td>This column defines the operations necessary to perform a test and achieve a result. Set switches to designated positions before performing corresponding work step.</td> </tr> <tr> <td>Mfg Limits</td> <td>UUT shall meet these limits at final buyoff before customer delivery.</td> </tr> </tbody> </table>	<u>Column</u>	<u>Description</u>	Rev Ltr	This column is used to identify revised material.	Test No.	Tests are numbered in sequence.	Opr Limits	Unit under test (UUT) shall meet these limits when tested at other than manufacturing facility. When an item is marked OPTIONAL, the corresponding test is not required except as an aid in troubleshooting.	Test Description	These items are the parameters to which the UUT was designed and aid in troubleshooting by specifying the input and output signal terminals. All conditions required are not repeated for each test, and conditions established in previous tests also apply.	Switch Pos	Positions to which switches must be set are listed in required order and are grouped to correspond to applicable Work Steps.	Work Steps	This column defines the operations necessary to perform a test and achieve a result. Set switches to designated positions before performing corresponding work step.	Mfg Limits	UUT shall meet these limits at final buyoff before customer delivery.
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LTR	NO.	OPR LIMITS	C	TEST DESCRIPTION	SWITCH POS	C	WORK STEPS	MFG LIMITS
A	1 thru 29 not used 30.0			<u>XS-852 DIVERSITY TRANSPONDER SETUP AND INPUT CURRENT TEST</u> <u>FOR COM UNIT -850 ONLY</u> <u>RTIU SETUP</u> Select XS-852 Transponder Select ARINC 429 Altitude Source Select Stand-Alone Operation (INTEGRATED COM=OPEN) Select RCB PAGE Configure straps for STAND-ALONE, RCB TUNING. (W1=W2=OPEN). Select RCB PAGE <u>POWER ON CURRENT TEST</u> Apply +27.5 ± 0.25 V dc to unit. <u>+28 V dc (+) Pins: P1-8,9</u> <u>Ground (-) Pins:</u> P1-7,17,18,19,21	RTIU MAIN MENU Test Setup 6.1 <13> <3> <A> <2> <G> <P> <H> <N> <N> <P> <P> <P> ATC1400A: PRF/SQTR: 60, OFF		<u>XS-852 DIVERSITY TRANSPONDER SETUP AND INPUT CURRENT TEST</u> <u>FOR COM UNIT -850 ONLY</u> <u>RTIU SETUP</u> XS-850/852/XI-851 XS-852 ALTITUDE SOURCE 429 INTEGRATED COM RCB PAGE MAIN BENCH PAGE BENCH ANALOG PAGE BENCH STRAPS PAGE CHANGE STRAPS 1 CHANGE STRAPS 2 BENCH ANALOG PAGE MAIN BENCH PAGE RCB PAGE Disable the PRF/SQTR on the IFR ATC 1400A. <u>POWER ON CURRENT TEST</u>	

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LTR	NO.	OPR LIMITS	C	TEST DESCRIPTION	SWITCH POS	C	WORK STEPS	MFG LIMITS	
A	30.1	Less than or equal to 1.0 A		With the voltage applied and the unit in standby the current draw shall be as specified.	RTIU +28V: ON		Apply power to the transponder module. The amp meter on the power supply shall be as specified.	Less than or equal to 1.0 A	
	31.0			<u>XS-852 DIVERSITY TRANSPONDER RF CHARACTERISTICS TEST</u> <u>FOR COM UNIT -850 ONLY</u>	ATC 1400A: PRF/SQTR: 60, ON		<u>XS-852 DIVERSITY TRANSPONDER RF CHARACTERISTICS TEST</u> <u>FOR COM UNIT -850 ONLY</u>		
					ATC-1400A PRF/SQTR: 60, ON		Set RF level to -67 dBm		
					<u>CONTROL MENU 1 FUNC (2) SEQ</u>				
					<X> <5>		ATC MODE ON+ALT		
	31.1	1089.0 to 1091.0		<u>TRANSMITTER FREQUENCY</u> Verify Transmitter Frequency on the Bottom Antenna.			<u>TRANSMITTER FREQUENCY</u> The XMTR/FREQ display on the ATC 1400A shall be as specified.	1089.5 to 1090.5	
	31.2	250 to 1000W		<u>TRANSMITTER POWER OUTPUT</u> Verify Transmitter power on the BOTTOM Antenna.			<u>TRANSMITTER POWER OUTPUT</u> The XMTR PWR display on the ATC 1400A shall be as specified. Connect TOP antenna cable to ATC 1400A.	350W to 1000W	
	31.3	250 to 1000W		Verify Transmitter power on the TOP Antenna.			The XMTR PWR display on the ATC 1400A shall be as specified. Connect BOTTOM antenna cable to ATC 1400A.	350W to 1000W	

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LTR	NO.	OPR LIMITS	C	TEST DESCRIPTION	SWITCH POS	C	WORK STEPS	MFG LIMITS
A				<u>MODE S REPLY VERIFICATION</u> Set Altitude source for 110,600 feet.	Test Setup 6.5		<u>MODE S REPLY VERIFICATION</u> Set Altitude for 110,600 feet.	
	31.4	DF20,FS=0 DR=00, UM=00 AC= +110,600 MB=0000000 000000000000 0 ADD= 00000001		Verify the Mode S Reply to a UF=20 interrogation is correct.	<u>429</u> TX DATA: ED8040 TX SPEED: LOW <u>S-1403</u> <u>S-MENU</u>		The reply data on the S-1403 display shall be as specified.	DF20,FS=0 DR=00, UM=00 AC=+110,600 MB=0000000 000000000000 0 ADD= 00000001
	31.5	5252		<u>ATCRBS MODE A REPLY VERIFICATION.</u> Set ATC CODE to 5252 and verify transponder has correct reply to Mode A interrogations.	<A><5252> <u>S-1403</u> <u>CONTROL</u> <u>MENU</u> FUNC (1) ATC <u>ATC 1400A</u> PRF/SQTR: ON, 600 XPDR MODE: A		Select "ATC CODE 5252" The ATC CODE display on the ATC 1400A and RTIU shall be as specified.	5252
	31.6	Greater than or equal to 90%		Verify the ATCRBS Mode reply rate. <u>RECEIVER MINIMUM TRANSMIT LEVEL (MTL) AND DYNAMIC RANGE</u> Disable SQUITTER for tests.	<H> <N> <Q> <D> <P> <P>		The %Reply:ATC on the S1403 display shall be as specified. <u>RECEIVER MINIMUM TRANSMIT LEVEL (MTL) AND DYNAMIC RANGE</u> MAIN BENCH PAGE BENCH ANALOG PAGE SQUITTER DISABLE MAIN BENCH PAGE RCB PAGE	Greater than or equal to 99%

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LTR	NO.	OPR LIMITS	C	TEST DESCRIPTION	SWITCH POS	C	WORK STEPS	MFG LIMITS
	31.7	-78 to -74 dBm (-76 nominal)		Verify the BOTTOM receiver MTL for ATCRBS Mode A Interrogations	<u>ATC 1400A</u> XPDR MODE: A		Adjust the RF level until the %Reply:ATC display on the S1403 shows 90% average reply. The RF level shall be as specified.	-78 to -74 dBm (-76 nominal)
	31.8	-78 to -74 dBm (-76 nominal)		Verify the BOTTOM receiver MTL for Mode S Interrogations	<u>ATC-1400A</u> PRF/SQTR: 60, ON <u>S-1403</u> <u>CONTROL</u> <u>MENU 1</u> FUNC (2) SEQ		Adjust the RF level until the %Reply:S display on the S1403 shows 90% average reply. The RF level shall be as specified.	-78 to -74 dBm (-76 nominal)
	31.9	Greater than or equal to 99%		Verify BOTTOM receiver Dynamic range for Mode S interrogations.			Adjust the RF level from -74dBm to -24dBm in 10dB steps. At each signal level, the minimum %Reply:S on the S1403 display shall be as specified. Connect TOP antenna cable to ATC 1400A.	Greater than or equal to 99%
	31.10	-78 to -74 dBm (-76 nominal)		Verify the TOP receiver MTL for ATCRBS Mode C Interrogations	<u>S-1403</u> <u>CONTROL</u> <u>MENU</u> FUNC (1) ATC <u>ATC 1400A</u> PRF/SQTR: ON, 600 XPDR MODE: C		Adjust the RF level until the %Reply:ATC display on the S1403 shows 90% average reply. The RF level shall be as specified.	-78 to -74 dBm (-76 nominal)
	31.11	-78 to -74 dBm (-76 nominal)		Verify the TOP receiver MTL for Mode S Interrogations	<u>ATC-1400A</u> PRF/SQTR: 60, ON <u>S-1403</u> <u>CONTROL</u> <u>MENU 1</u> FUNC (2) SEQ		Adjust the RF level until the %Reply:S display on the S1403 shows 90% average reply. The RF level shall be as specified.	-78 to -74 dBm (-76 nominal)

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	SECURITY NOTATION	SUPPLEMENTS	13 PAGE

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SEE THE TITLE PAGE FOR PROPRIETARY AND DATA RIGHTS NOTATIONS.			

REV	TEST	SPECIFICATION		PROCEDURE		SPECIFICATION		
LTR	NO.	OPR LIMITS	C	TEST DESCRIPTION	SWITCH POS	C	WORK STEPS	MFG LIMITS
	31.12	Greater than or equal to 99%		Verify TOP receiver Dynamic range for Mode S interrogations.			Adjust the RF level from -74dBm to -24dBm in 10dB steps. At each signal level, the minimum %Reply:S on the S1403 display shall be as specified.	Greater than or equal to 99%
				<u>DIVERSITY OPERATION</u>			<u>DIVERSITY OPERATION</u>	
	31.13	Less than or equal to 10%		Interrogate the transponder with the RF level of the BOTTOM receiver 3 dB greater than the TOP receiver and verify transponder replies on the BOTTOM channel.	ATC 1400A PRF/SQTR: 60, ON S 1403 <u>CONTROL MENU 1</u> FUNC (2) SEQ ANT B: ON		Set RF level for -47dBm. The %Reply:ANT B display on the S-1403 shall be as specified.	Less than or equal to 1%
A	31.14	Greater than or equal to 90%					The %Reply: Mode S display on the ATC-1400A shall be as specified.	Greater than or equal to 99%
	31.15	Greater than or equal to 90%		Interrogate the transponder with the RF level of the TOP receiver 3dB greater than the BOT receiver and verify the transponder replies on the TOP channel.			Set RF level for -53dBm. The %Reply:ANT B display on the S-1403 shall be as specified.	Greater than or equal to 99%
A	31.16	Less than or equal to 10%		Enable SQUITTER for tests.	<H> <N> <Q> <E> <P> <P>		The %Reply : Mode S display on the ATC-1400A shall be as specified. MAIN BENCH PAGE BENCH ANALOG PAGE SQUITTER ENABLE MAIN BENCH PAGE RCB PAGE	Less than or equal to 1%

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REV	TEST	SPECIFICATION		PROCEDURE		SPECIFICATION		
LTR	NO.	OPR LIMITS	C	TEST DESCRIPTION	SWITCH POS	C	WORK STEPS	MFG LIMITS
	32.0			<u>XS-852 DIVERSITY TRANSPONDER FAN TEST -850 COM UNIT ONLY</u> Select BENCH ANALOG PAGE Turn FAN simulator OFF Turn FAN OFF	<H> <N> <Y> <0> <F> <F>		<u>XS-852 DIVERSITY TRANSPONDER FAN TEST -850 COM UNIT ONLY</u> MAIN BENCH PAGE BENCH ANALOG PAGE FAN SIMULATION 0 FAN TEST OFF	
	32.1	OFF		Verify FAN TEST status monitor is OFF Turn FAN ON	<F> <O>		The FAN TEST on the RTIU display shall be as specified. FAN TEST ON	OFF
	32.2	ON		Verify FAN TEST status monitor is ON Select RCB PAGE	<P> <P>		The FAN TEST on the RTIU display shall be as specified. MAIN BENCH PAGE RCB PAGE	ON

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	SECURITY NOTATION	SUPPLEMENTS	15 PAGE

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REV	TEST	SPECIFICATION			PROCEDURE		SPECIFICATION		
LTR	NO.	OPR LIMITS	C	TEST DESCRIPTION	SWITCH POS	C	WORK STEPS	MFG LIMITS	
A	33.0			<u>XS-852 DIVERSITY TRANSPONDER CLEAR MAINTENANCE LOG AND FINAL TEST.</u> <u>FOR -850 COM UNIT ONLY</u> Set ARINC test set to transmit Label 203, Data ED8040. Clear Maintenance logs (AIRCRAFT and TROUBLESHOOT) and Power-On Count. Cycle +28V Power.	429 TX SPEED: LOW TX DATA: ED8040 <H> <M> <M> <M> <C> <P> RTIU +28V: OFF RTIU +28V: ON		<u>XS-852 DIVERSITY TRANSPONDER CLEAR MAINTENANCE LOG AND FINAL TEST.</u> <u>FOR -850 COM UNIT ONLY</u> Connect ARINC test set transmitter to RTIU pins P1G6(HI) and P1H6(LO). MAIN BENCH PAGE CLEAR MAINT LOG/POC MAINT LOG CLEAR MAINT LOG/POC POC RCB PAGE +28V OFF Wait 7 seconds minimum. +28V ON		
	33.1	ATC PASS		Activate PAST self-test mode. Verify self-test passes with no errors. Return to NORMAL mode. Go to the TROUBLESHOOT MAINTENANCE Log.	<S> <A> <S> <M> <T>		TEST (PAST/POST) PAST The RADIO MSGS display shall be as specified. TEST (PAST/POST)	ATC PASS	
	33.2	1		Verify the POC in the maintenance log is set to 1.				The CUR POC display shall be as specified.	1
	33.3	END LIST		Verify the TROUBLESHOOT maintenance log is cleared. Go to the TROUBLESHOOT MAINTENANCE Log.	<P> <M> <A>			The first row in the DESCRIBE COLUMN display shall be as specified. RCB PAGE MAINTENANCE PAGE TROUBLESHOOT LOG	END LIST

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	SECURITY NOTATION	SUPPLEMENTS	16 PAGE

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REV	TEST	SPECIFICATION		PROCEDURE		SPECIFICATION		
LTR	NO.	OPR LIMITS	C	TEST DESCRIPTION	SWITCH POS	C	WORK STEPS	MFG LIMITS
	33.4	END LIST		Verify the AIRCRAFT maintenance log is cleared. Return to RCB PAGE and remove +28V Power	<P> RTIU +28V: OFF		The first row in the DESCRIP COLUMN display shall be as specified. RCB PAGE +28V OFF Remove module from test set.	END LIST

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	SECURITY NOTATION	SUPPLEMENTS	17 PAGE

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**APPENDIX A
TRANSPONDER INTERROGATION AND REPLIES**

Honeywell	AW/CRITICAL NOTATION		
	SECURITY NOTATION	SUPPLEMENTS	A-0 PAGE

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REV LTR

**APPENDIX A
TRANSPONDER INTERROGATION AND REPLIES**

Pulse Designator	Pulse Duration	Duration Tolerance	Rise Time Min/Max	Decay Time Min/Max
P1, P2, P3, P5	0.8	±0.1	0.05/0.1	0.05/0.2
P4 (short)	0.8	±0.1	0.05/0.1	0.05/0.2
P4 (long)	1.6	0.1	0.05/0.1	0.05/0.2

Interrogation Type	Spacing			
	P1 - P2	P1 - P3	P3 - P4	P4
ATCRBS Mode A	2 ±0.15	8 ±0.2	-	None
ATCRBS Mode C	2 ±0.15	21 ±0.2	-	None
ATCRBS Mode A/Mode S All-Call	2 ±0.15	8 ±0.2	2 ±0.05	Long
ATCRBS Mode C/Mode S All-Call	2 ±0.15	21 ±0.2	2 ±0.05	Long
ATCRBS Mode A-Only All-Call	2 ±0.15	8 ±0.2	2 ±0.05	Short
ATCRBS Mode C-Only All-Call	2 ±0.15	21 ±0.2	±0.05	Short

Honeywell	AW/CRITICAL NOTATION		
	SECURITY NOTATION	SUPPLEMENTS	A-1 PAGE

ENGINEERING SPECIFICATION

SECURITY NOTATION

SPEC NO.

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CAGE CODE

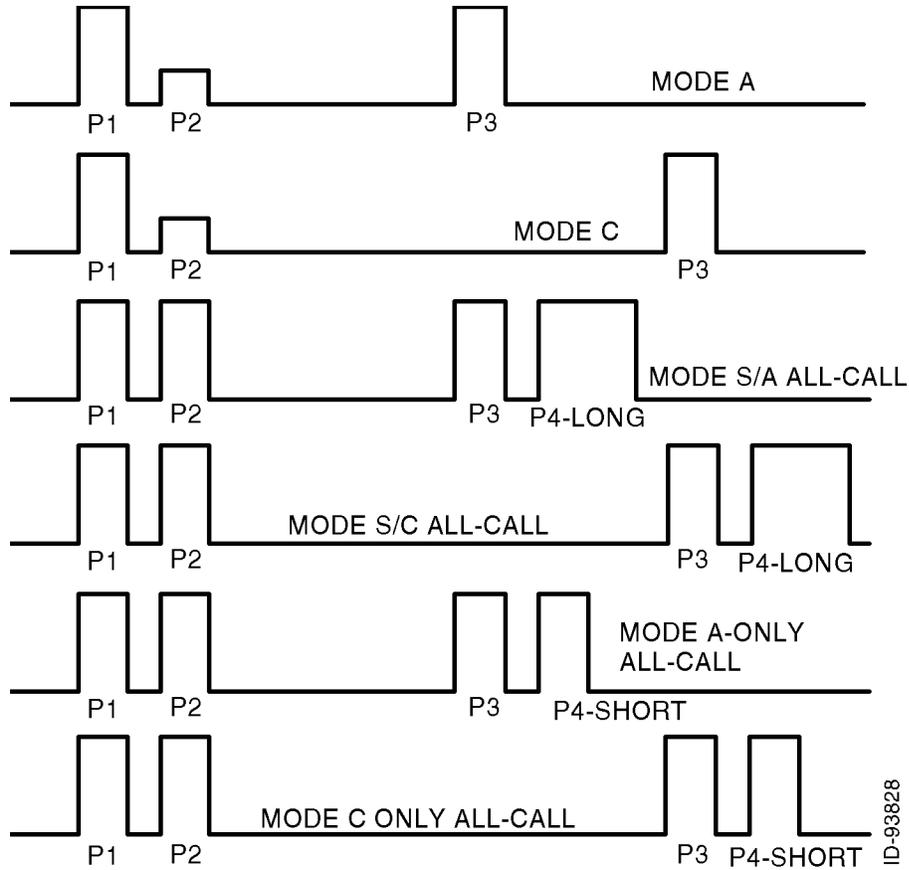
55939

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Figure A-1. Interrogations

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AW/CRITICAL NOTATION

SECURITY NOTATION

SUPPLEMENTS

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MODE S INTERROGATION

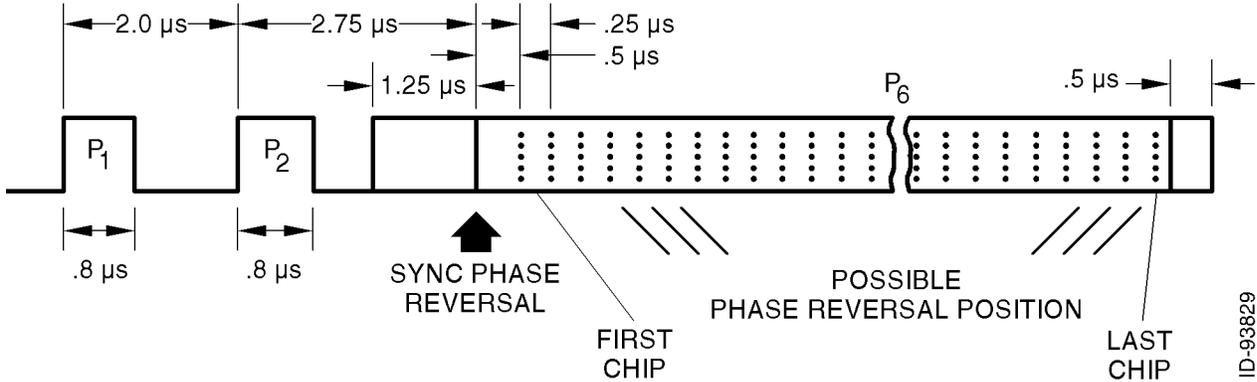


Figure A-2.

MODE S REPLIES

The reply data block is formed by PPM encoding of the reply data. A pulse transmitted in the first half of the interval represents a ONE while a pulse transmitted in the second half represents a ZERO.

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	SECURITY NOTATION	SUPPLEMENTS	A-3 PAGE

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LTR

**APPENDIX B
FINAL TEST REPORT**

Honeywell	AW/CRITICAL NOTATION		
	SECURITY NOTATION	SUPPLEMENTS	B-0 PAGE

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REV LTR	QUALITY CONTROL FUNCTIONAL TEST REPORT
----------------	-----------------------------------------------

PART NO. 7510700	SERIAL/SHOP NO.
-------------------------	------------------------

TEST FIXTURES AND SUPPORT EQUIPMENT					
--------------------------------------------	--	--	--	--	--

TEST FIXTURE OR TYPE	SERIAL	MODEL	SPC/ID	REV	CAL DUE DATE
DIG VOLTMETER		8000A FLUKE			
OSCOPE					
TRANSPONDER T.S.		ATC 1400A			
MODE S AUX UNIT		S-1403			
RTIU					
RTIU SOFT					
429 RCVR					
TEST SPEC. NO.	SUB. LTR.	C/O			
TEST PRODUCT NO.	SUB. LTR.	C/O	DATE		
IT NO. 7510700	SUB. LTR.	C/O	DATE		
APPROVED			DATE		

TESTER	DATE	FTR SHEET 1 OF 2
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Honeywell	AW/CRITICAL NOTATION		
	SECURITY NOTATION	SUPPLEMENTS	B-1 PAGE

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REV LTR A	QUALITY CONTROL FUNCTIONAL TEST REPORT
---------------------	-----------------------------------------------

REV LTR A	PART NO. 7510700	SERIAL/SHOP NO.
	30.0 XS-852 DIVERSITY INPUT CURRENT	
	30.1 CURRENT AMPS	32.0 XS-852 DIVERSITY FAN TEST
	31.0 XS-852 DIVERSITY RF CHARACTERISTICS TEST	32.1 FAN STATUS-OFF PASS
	31.1 TRANSMITTER FREQUENCY MHz	32.2 FAN STATUS-ON PASS
	31.2 BOTTOM TRANSMITTER POWER W	33.0 XS-852 DIVERSITY FINAL TEST
	31.3 TOP TRANSMITTER POWER W	33.1 PAST TEST PASS
	31.4 MODE S REPLY PASS	33.2 POWER ON COUNT PASS
	31.5 MODE A REPLY PASS	33.3 END LIST PASS
	31.6 MODE A REPLY RATE %	33.4 END LIST PASS
	31.7 BOTTOM MODE A MTL dBm	
	31.8 BOTTOM MODE S MTL dBm	
	31.9 BOTTOM RECEIVER RANGE %	
	31.10 TOP MODE C MTL dBm	
	31.11 TOP MODE S MTL dBm	
	31.12 TOP RECEIVER RANGE %	
	31.13 DIVERSITY - TOP %	
	31.14 DIVERSITY - BOTTOM %	
	31.15 DIVERSITY - TOP %	
	31.16 DIVERSITY - BOTTOM %	
	TESTER	DATE
		FTR SHEET 2 OF 2

Honeywell	AW/CRITICAL NOTATION		
	SECURITY NOTATION	SUPPLEMENTS	B-2 PAGE