



**ADDENDUM TO HONEYWELL INTERNATIONAL INC.
TEST REPORT FC07-060**

**FOR THE
DISTANCE MEASURING EQUIPMENT, DMA-37B
FCC PART 87
TESTING**

DATE OF ISSUE: OCTOBER 10, 2007

PREPARED FOR:

Honeywell
15001 NE 36th Street , MS B12 A
Redmond, WA 98052

P.O. No.: 4820111
W.O. No.: 86887

PREPARED BY:

Mary Ellen Clayton
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Date of test: August 6-10, 2007

Report No.: FC07-060A

This report contains a total of 45 pages and may be reproduced in full only. Partial reproduction may only be done with the written consent of CKC Laboratories, Inc. The results in this report apply only to the items tested, as identified herein.

TABLE OF CONTENTS

Administrative Information	3
Approvals.....	3
Conditions During Testing.....	3
Equipment Under Test (EUT) Description	4
Equipment Under Test	4
Peripheral Devices	4
Temperature and Humidity During Testing.....	5
FCC 2.1033(c)(3) User's Manual	5
FCC 2.1033(c)(4) Type of Emissions.....	5
FCC 2.1033(c)(5) Frequency Range.....	5
FCC 2.1033(c)(6) Operating Power.....	5
FCC 2.1033(c)(8) DC Voltages	5
FCC 2.1033(c)(9) Tune-Up Procedure	5
FCC 2.1033(c)(10) Schematics and Circuitry Description.....	5
FCC 2.1033(c)(11) Label and Placement	5
FCC 2.1033(c)(12) Submittal Photos	5
FCC 2.1033(c)(13) Modulation Information	5
FCC 2.1033(c)(14)/2.1046/87.131 - RF Power Output	6
FCC 2.1033(c)(14)/2.1049(i)/87.135 - Occupied Bandwidth.....	8
Emissions Mask	11
FCC 2.1033(c)(14)/2.1051/87.139 - Spurious Emissions at Antenna Terminal.....	14
FCC 2.1033(c)(14)/2.1053/87.139 - Field Strength of Spurious Radiation	41
FCC 2.1033(c)(14)/2.1055/87.133 - Frequency Stability	44



ADMINISTRATIVE INFORMATION

DATE OF TEST: August 6-10, 2007

DATE OF RECEIPT: August 6, 2007

REPRESENTATIVE: Arnold Koster

MANUFACTURER:

Honeywell International Inc.
15001 NE 36th Street, MS B12 A
Redmond, WA 98052

TEST LOCATION:

CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

FREQUENCY RANGE TESTED: 10 kHz-10 GHz

TEST METHOD: ANSI /TIA / EIA-603-B (2002)

PURPOSE OF TEST: Original Report: To perform the testing of the Distance Measuring Equipment, DMA-37B with the requirements for FCC Part 87 devices.

Addendum A: To correct the data on page 36 and the calibration information on page 43 with no new testing.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:

Randy Clark, EMC Engineer

Mike Wilkinson, EMC Engineer/Lab Manager

CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.



EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

EQUIPMENT UNDER TEST

Distance Measuring Equipment

Manuf: Honeywell International, Inc.
Model: DMA-37B
Serial: DMA37B-07296

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Quantum Interface Panel

Manuf: Honeywell International Inc.
Model: 747-0474-001
Serial: 3

492 Database Analyzer

Manuf: Aeroflex
Model: DT400H-00
Serial: N02202038

ATC/DME Signal Generator

Manuf: Goodrich
Model: SDX 2000
Serial: 216

Programmable AC Power Source

Manuf: Pacific Power Source
Model: 303AT-E-T1
Serial: 00152

**TEMPERATURE AND HUMIDITY DURING TESTING**

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

FCC 2.1033(c)(3) USER'S MANUAL

The necessary information is contained in a separate document.

FCC 2.1033 (c)(4) TYPE OF EMISSIONS

P0N

FCC 2.1033 (c)(5) FREQUENCY RANGE

1025-1150 MHz.

FCC 2.1033 (c)(6) OPERATING POWER

758.6 Watts

FCC 2.1033 (c)(8) DC VOLTAGES

The necessary information is contained in a separate document.

FCC 2.1033 (c)(9) TUNE-UP PROCEDURE

The necessary information is contained in a separate document.

FCC 2.1033(c)(10) SCHEMATICS AND CIRCUITRY DESCRIPTION

The necessary information is contained in a separate document.

FCC 2.1033(c)(11) LABEL AND PLACEMENT

The necessary information is contained in a separate document.

FCC 2.1033(c)(12) SUBMITTAL PHOTOS

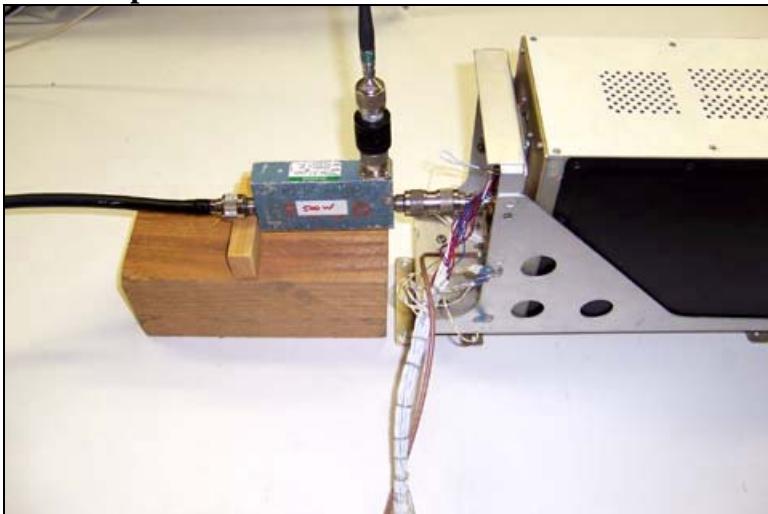
The necessary information is contained in a separate document.

FCC 2.1033 (c)(13) MODULATION INFORMATION

The necessary information is contained in a separate document.

FCC 2.1033(c)(14)/2.1046/87.131 - RF POWER OUTPUT

Test Setup Photos



Test Data Sheets

Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
 Specification: **2.1046/87.131**
 Work Order #: **86887** Date: 8/9/2007
 Test Type: **Conducted Emissions** Time: 15:50:44
 Equipment: **Distance Measuring Equipment** Sequence#: 1
 Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
 Model: DMA-37B 115V/400Hz
 S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Narda Directional Coupler, 3002-30	436	07/27/2007	07/27/2009	P01906
Pasternack 10dB Attenuator	CKC02229	11/30/2006	11/30/2008	P02229

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Frequency Range Investigated: Carrier. RBW = 1MHz, VBW = 50MHz.

Frequency (MHz)	DME Channel	Peak Power (Watts)
1025	DME Channel 1X	691.8
1041	Self Test Signal	741.3
1080	DME Channel 56X	758.6
1150	DME Channel 126X	489.8

FCC 2.1033(c)(14)/2.1049(i)/87.135- OCCUPIED BANDWIDTH
Test Equipment

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Narda Directional Coupler, 3002-30	436	07/27/2007	07/27/2009	P01906
Pasternack 10dB Attenuator	CKC02229	11/30/2006	11/30/2008	P02229

Equipment Under Test (* = EUT):

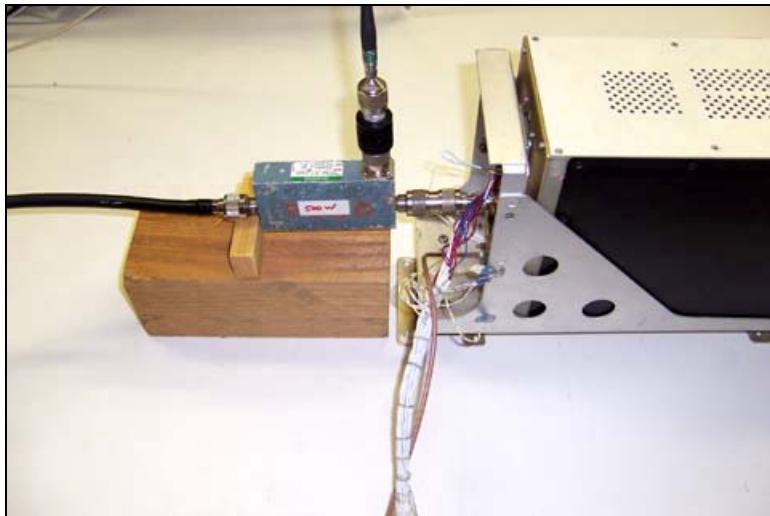
Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

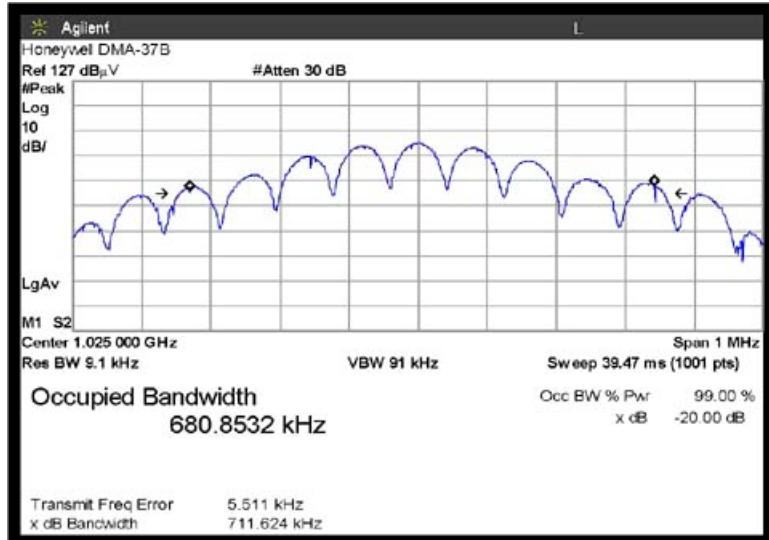
Test Conditions: EUT is a Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database analyzer is used for controlling EUT center frequency. The interface panel is used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. Frequency Range Investigated: Carrier.

Test Setup Photos



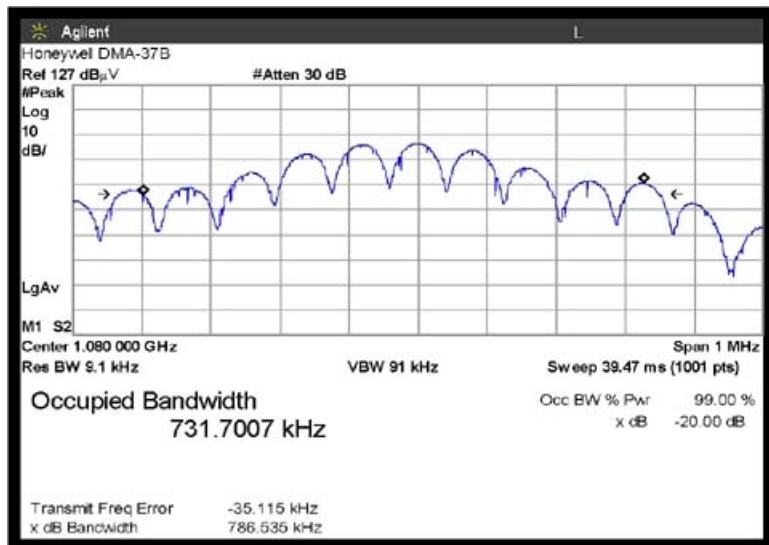
Test Plots

OCCUPIED BANDWIDTH LOW CHANNEL



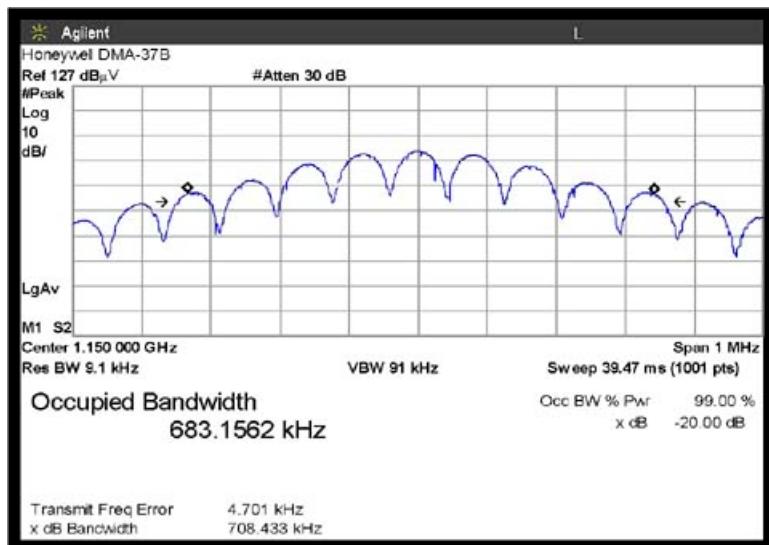
Tested By: Randal Clark

OCCUPIED BANDWIDTH MID CHANNEL



Tested By: Randal Clark

OCCUPIED BANDWIDTH HIGH CHANNEL



Tested By: Randal Clark

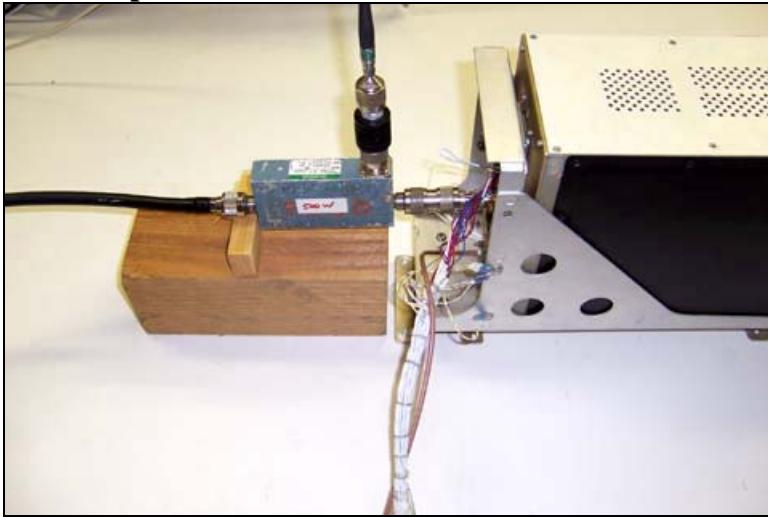
EMISSIONS MASK

Test Equipment

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Narda Directional Coupler, 3003-30	886	07/27/2007	07/27/2009	P01904
Narda Directional Coupler, 3004-30	285	07/27/2007	07/27/2009	P01905
Narda Directional Coupler, 3002-30	436	07/27/2007	07/27/2009	P01906
Pasternack 10dB Attenuator	CKC02229	11/30/2006	11/30/2008	P02229

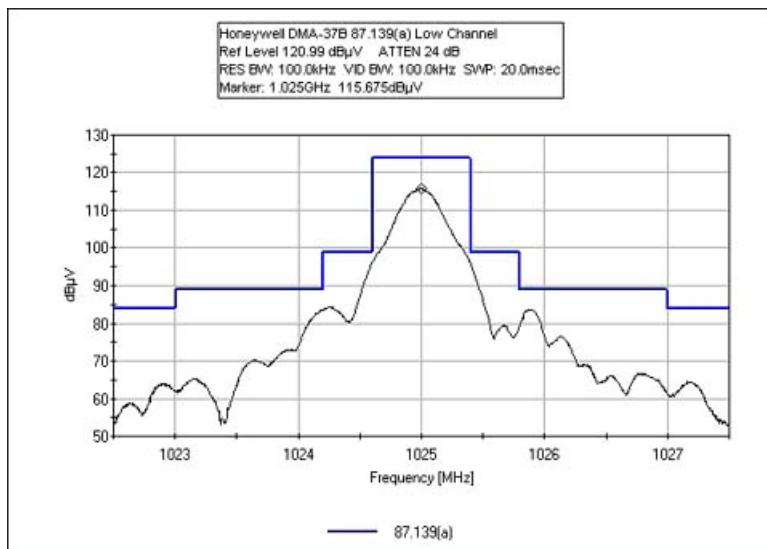
Test Conditions EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: Low Channel Frequency Range Investigated: 1.0-12.2 GHz 1.0-12.2 GHz RBW=100kHz, VBW=300kHz

Test Setup Photos



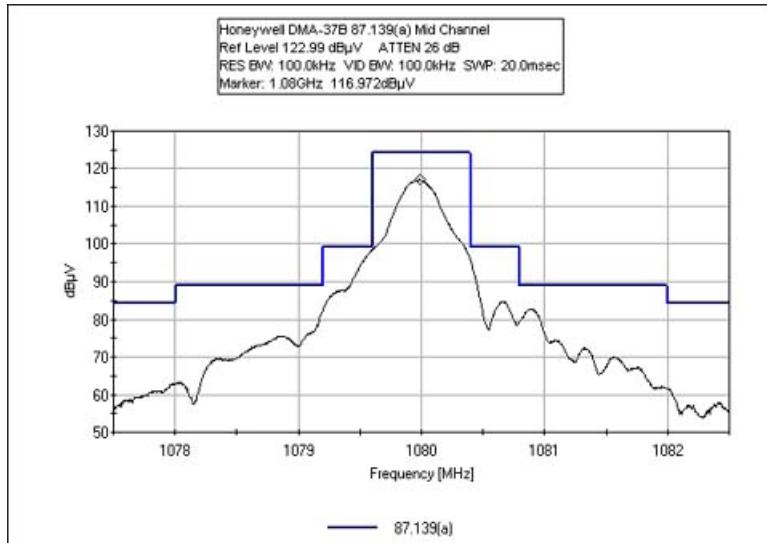
Test Plots

EMISSIONS MASK LOW CHANNEL



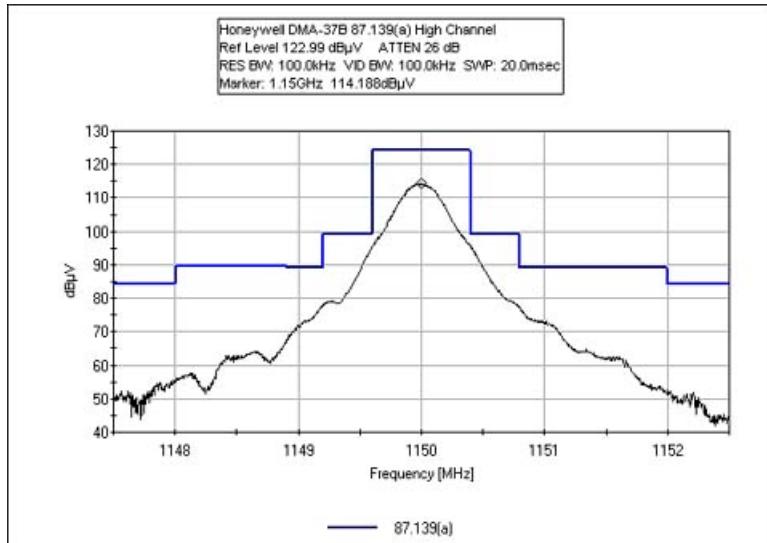
Tested By: Randal Clark

EMISSIONS MASK MID CHANNEL



Tested By: Randal Clark

EMISSIONS MASK HIGH CHANNEL

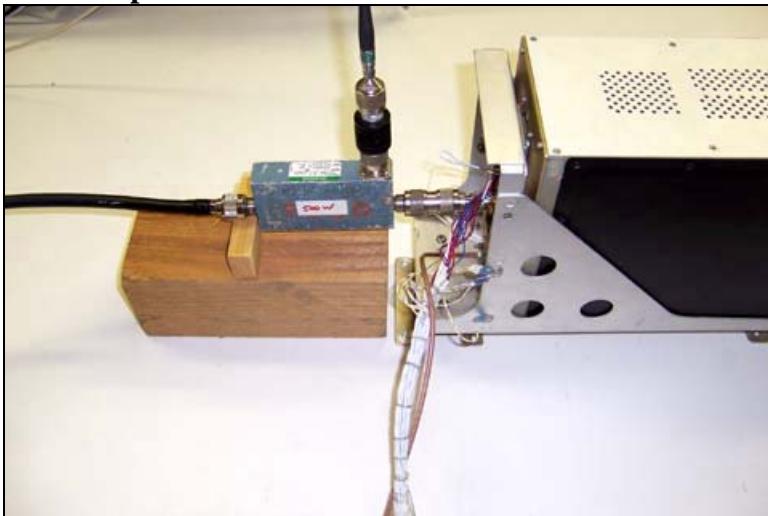


Tested By: Randal Clark

FCC 2.1033(c)(14)/2.1051/87.139 - SPURIOUS EMISSIONS AT ANTENNA TERMINAL

Test Conditions: Spec limit derivation: Spurious emission limit is based on 87.139(a) for aircraft stations. Power output used for derivation of the limit is based on peak power of 800 Watts. Authorized bandwidth used for deriving attenuation steps is 800kHz. All spurious emissions are measured in peak detector mode for comparison to the limit.

Test Setup Photos



Test Data Sheets

Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer:	Honeywell		
Specification:	87.139(a)		
Work Order #:	86887	Date:	8/8/2007
Test Type:	Conducted Emissions	Time:	9:26:20 AM
Equipment:	Distance Measuring Equipment	Sequence#:	5
Manufacturer:	Honeywell International, Inc.	Tested By:	Randal Clark
Model:	DMA-37B		115V/400Hz
S/N:	DMA37B-07296		

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Directional Coupler,	39139	05/21/2007	05/21/2009	02902
C4080-20				

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: Low Channel. Frequency Range Investigated: 9kHz - 100MHz. 9kHz - 150kHz RBW=300Hz, VBW=1kHz 150kHz - 30MHz RBW=10kHz, VBW=30kHz 30MHz - 100MHz RBW=100kHz, VBW=300kHz.

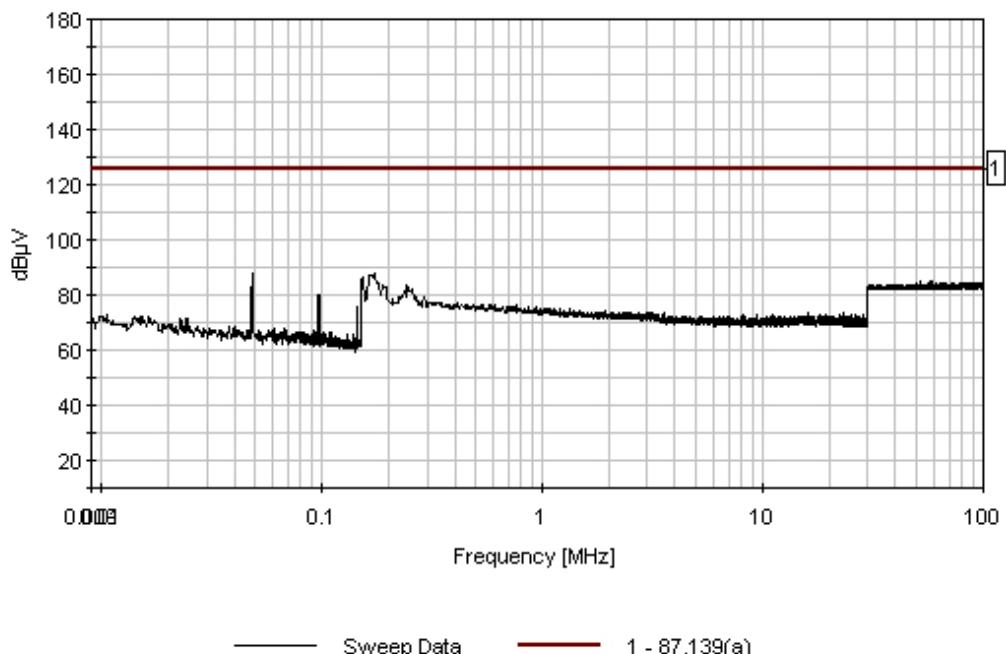
Transducer Legend:

T1=Cable Semiflex ANP01403	T2=Directional Coupler AN02902
----------------------------	--------------------------------

#	Freq MHz	Reading listed by margin.				Dist Table	Test Lead: RF Output Port			
		Rdng dB μ V	T1 dB	T2 dB	dB		Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	48.480k	38.1	+0.0	+49.9		+0.0	88.0	126.0	-38.0	RF Ou
2	172.380k	37.7	+0.0	+49.9		+0.0	87.6	126.0	-38.4	RF Ou
3	153.197k	36.8	+0.0	+49.9		+0.0	86.7	126.0	-39.3	RF Ou
4	58.000M	34.9	+0.2	+50.2		+0.0	85.3	126.0	-40.7	RF Ou
5	51.840M	34.7	+0.1	+50.1		+0.0	84.9	126.0	-41.1	RF Ou
6	59.050M	34.5	+0.2	+50.2		+0.0	84.9	126.0	-41.1	RF Ou
7	57.230M	34.5	+0.2	+50.1		+0.0	84.8	126.0	-41.2	RF Ou
8	58.420M	34.2	+0.2	+50.2		+0.0	84.6	126.0	-41.4	RF Ou
9	90.760M	34.0	+0.3	+50.3		+0.0	84.6	126.0	-41.4	RF Ou

10	92.720M	34.0	+0.3	+50.3	+0.0	84.6	126.0	-41.4	RF Ou
11	96.430M	34.0	+0.3	+50.3	+0.0	84.6	126.0	-41.4	RF Ou
12	99.930M	33.8	+0.3	+50.3	+0.0	84.4	126.0	-41.6	RF Ou
13	188.366k	33.6	+0.0	+49.9	+0.0	83.5	126.0	-42.5	RF Ou
14	242.718k	33.6	+0.0	+49.9	+0.0	83.5	126.0	-42.5	RF Ou
15	236.324k	31.2	+0.0	+49.9	+0.0	81.1	126.0	-44.9	RF Ou
16	96.702k	30.1	+0.0	+49.9	+0.0	80.0	126.0	-46.0	RF Ou
17	290.675k	29.1	+0.0	+49.9	+0.0	79.0	126.0	-47.0	RF Ou
18	770.250k	26.4	+0.0	+49.9	+0.0	76.3	126.0	-49.7	RF Ou
19	747.870k	26.1	+0.0	+49.9	+0.0	76.0	126.0	-50.0	RF Ou
20	687.124k	26.0	+0.0	+49.9	+0.0	75.9	126.0	-50.1	RF Ou

CKC Laboratories, Inc. Date: 8/8/2007 Time: 9:26:20 AM Honeywell WO#: 86887
 87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 5
 Honeywell MN DMA-37B Low Channel





Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
Specification: **87.139(a)**
Work Order #: **86887** Date: 8/8/2007
Test Type: **Conducted Emissions** Time: 9:12:07 AM
Equipment: **Distance Measuring Equipment** Sequence #: 4
Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
Model: DMA-37B 115V/400Hz
S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Directional Coupler, C4080-20	39139	05/21/2007	05/21/2009	02902

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: Mid Channel. Frequency Range Investigated: 9kHz - 100MHz 9kHz - 150kHz RBW=300Hz, VBW=1kHz 150kHz - 30MHz RBW=10kHz, VBW=30kHz 30MHz - 100MHz RBW=100kHz, VBW=300kHz.

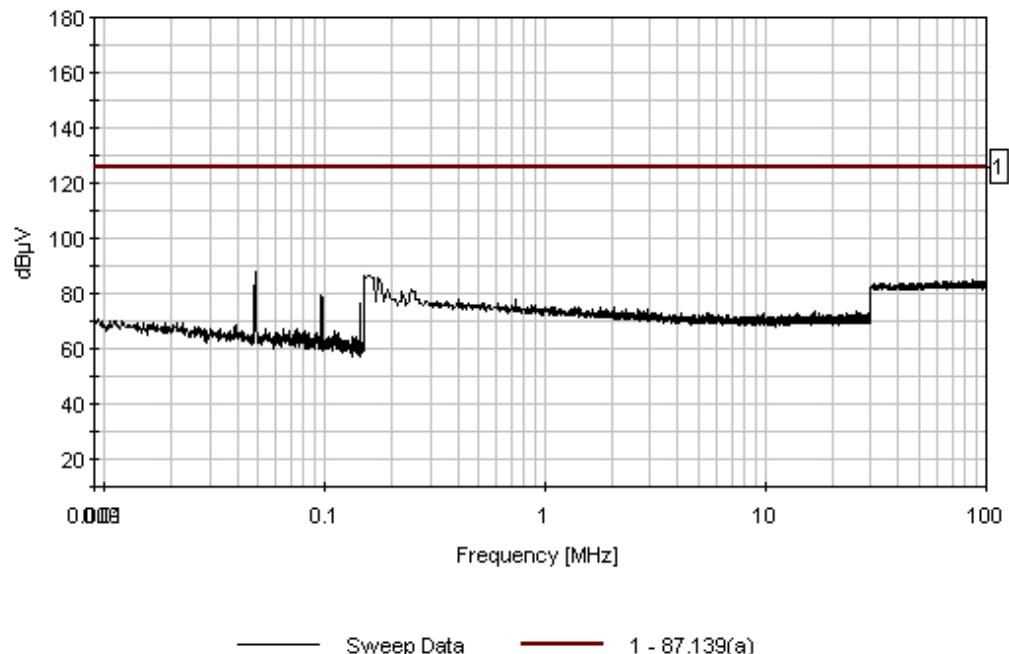
Transducer Legend:

T1=Cable Semiflex ANP01403

T2=Directional Coupler AN02902

#	Freq MHz	Reading listed by margin.				Test Lead: RF Output Port				
		Rdng dB μ V	T1 dB	T2 dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	48.480k	38.0	+0.0	+49.9		+0.0	87.9	126.0	-38.1	RF Ou
2	159.592k	36.4	+0.0	+49.9		+0.0	86.3	126.0	-39.7	RF Ou
3	175.577k	35.5	+0.0	+49.9		+0.0	85.4	126.0	-40.6	RF Ou
4	85.720M	34.1	+0.3	+50.3		+0.0	84.7	126.0	-41.3	RF Ou
5	60.170M	34.2	+0.2	+50.2		+0.0	84.6	126.0	-41.4	RF Ou
6	80.260M	34.1	+0.2	+50.2		+0.0	84.5	126.0	-41.5	RF Ou
7	81.100M	34.1	+0.2	+50.2		+0.0	84.5	126.0	-41.5	RF Ou
8	74.520M	33.9	+0.2	+50.2		+0.0	84.3	126.0	-41.7	RF Ou
9	63.250M	33.8	+0.2	+50.2		+0.0	84.2	126.0	-41.8	RF Ou
10	64.860M	33.8	+0.2	+50.2		+0.0	84.2	126.0	-41.8	RF Ou
11	65.210M	33.8	+0.2	+50.2		+0.0	84.2	126.0	-41.8	RF Ou
12	58.350M	33.7	+0.2	+50.2		+0.0	84.1	126.0	-41.9	RF Ou
13	80.610M	33.7	+0.2	+50.2		+0.0	84.1	126.0	-41.9	RF Ou
14	65.910M	33.6	+0.2	+50.2		+0.0	84.0	126.0	-42.0	RF Ou
15	69.060M	33.6	+0.2	+50.2		+0.0	84.0	126.0	-42.0	RF Ou
16	36.650M	33.9	+0.0	+50.0		+0.0	83.9	126.0	-42.1	RF Ou
17	50.230M	33.7	+0.1	+50.1		+0.0	83.9	126.0	-42.1	RF Ou
18	58.140M	33.5	+0.2	+50.2		+0.0	83.9	126.0	-42.1	RF Ou
19	70.600M	33.5	+0.2	+50.2		+0.0	83.9	126.0	-42.1	RF Ou
20	56.600M	33.5	+0.2	+50.1		+0.0	83.8	126.0	-42.2	RF Ou

CKC Laboratories, Inc. Date: 8/8/2007 Time: 9:12:07 AM Honeywell WO#: 86887
87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 4
Honeywell MN DMA-37B Mid Channel





Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
Specification: **87.139(a)**
Work Order #: **86887** Date: 8/8/2007
Test Type: **Conducted Emissions** Time: 9:00:22 AM
Equipment: **Distance Measuring Equipment** Sequence #: 3
Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
Model: DMA-37B 115V/400Hz
S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Directional Coupler, C4080-20	39139	05/21/2007	05/21/2009	02902

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: High Channel. Frequency Range Investigated: 9kHz - 100MHz 9kHz - 150kHz RBW=300Hz, VBW=1kHz 150kHz - 30MHz RBW=10kHz, VBW=30kHz 30MHz - 100MHz RBW=100kHz, VBW=300kHz.

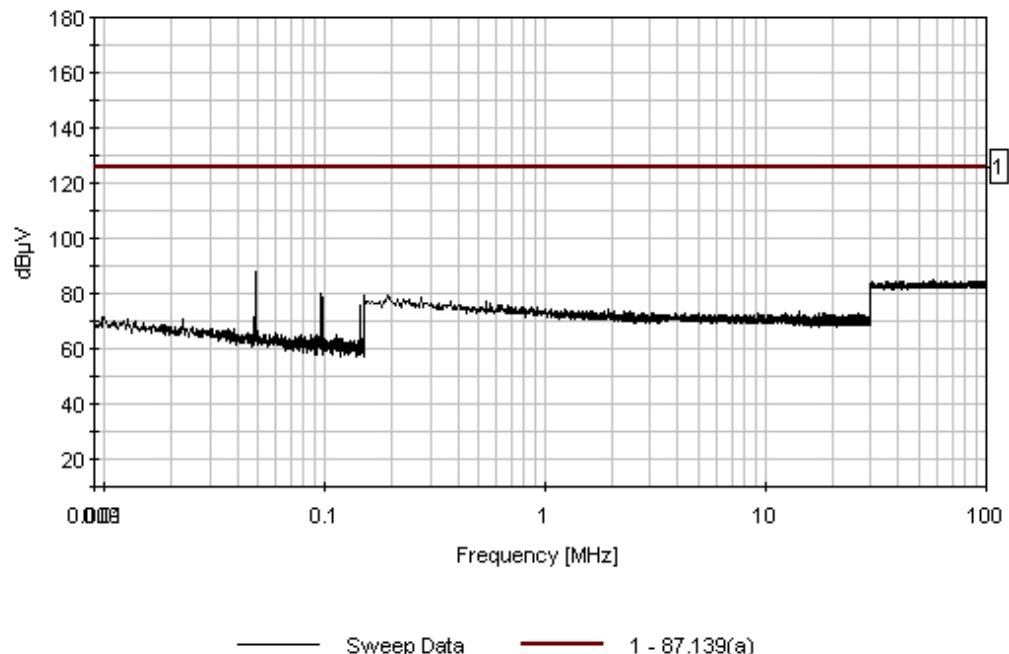
Transducer Legend:

T1=Cable Semiflex ANP01403

T2=Directional Coupler AN02902

#	Freq MHz	Reading listed by margin.				Test Lead: RF Output Port				
		Rdng dB μ V	T1 dB	T2 dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	48.480k	38.0	+0.0	+49.9		+0.0	87.9	126.0	-38.1	RF Ou
2	57.370M	34.6	+0.2	+50.1		+0.0	84.9	126.0	-41.1	RF Ou
3	41.900M	34.4	+0.0	+50.0		+0.0	84.4	126.0	-41.6	RF Ou
4	35.950M	34.3	+0.0	+50.0		+0.0	84.3	126.0	-41.7	RF Ou
5	30.140M	34.0	+0.0	+50.0		+0.0	84.0	126.0	-42.0	RF Ou
6	34.830M	34.0	+0.0	+50.0		+0.0	84.0	126.0	-42.0	RF Ou
7	51.630M	33.8	+0.1	+50.1		+0.0	84.0	126.0	-42.0	RF Ou
8	36.790M	33.8	+0.0	+50.0		+0.0	83.8	126.0	-42.2	RF Ou
9	37.000M	33.3	+0.0	+50.0		+0.0	83.3	126.0	-42.7	RF Ou
10	96.702k	29.8	+0.0	+49.9		+0.0	79.7	126.0	-46.3	RF Ou
11	191.563k	29.3	+0.0	+49.9		+0.0	79.2	126.0	-46.8	RF Ou
12	150.000k	29.2	+0.0	+49.9		+0.0	79.1	126.0	-46.9	RF Ou
13	274.690k	28.5	+0.0	+49.9		+0.0	78.4	126.0	-47.6	RF Ou
14	226.732k	28.2	+0.0	+49.9		+0.0	78.1	126.0	-47.9	RF Ou
15	540.054k	27.5	+0.0	+49.9		+0.0	77.4	126.0	-48.6	RF Ou
16	373.802k	27.1	+0.0	+49.9		+0.0	77.0	126.0	-49.0	RF Ou
17	559.237k	26.3	+0.0	+49.9		+0.0	76.2	126.0	-49.8	RF Ou
18	341.830k	26.0	+0.0	+49.9		+0.0	75.9	126.0	-50.1	RF Ou
19	405.773k	26.0	+0.0	+49.9		+0.0	75.9	126.0	-50.1	RF Ou
20	629.575k	26.0	+0.0	+49.9		+0.0	75.9	126.0	-50.1	RF Ou

CKC Laboratories, Inc. Date: 8/8/2007 Time: 9:00:22 AM Honeywell WO#: 86887
87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 3
Honeywell MN DMA-37B High Channel



Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
 Specification: **87.139(a)**
 Work Order #: **86887** Date: 8/8/2007
 Test Type: **Conducted Emissions** Time: 9:48:45 AM
 Equipment: **Distance Measuring Equipment** Sequence #: 6
 Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
 Model: DMA-37B 115V/400Hz
 S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Directional Coupler, C6338-20	39151	05/21/2007	05/21/2009	02903

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: Low Channel. Frequency Range Investigated: 100-1000 MHz 100MHz-1000MHz RBW=100kHz, VBW=300kHz.

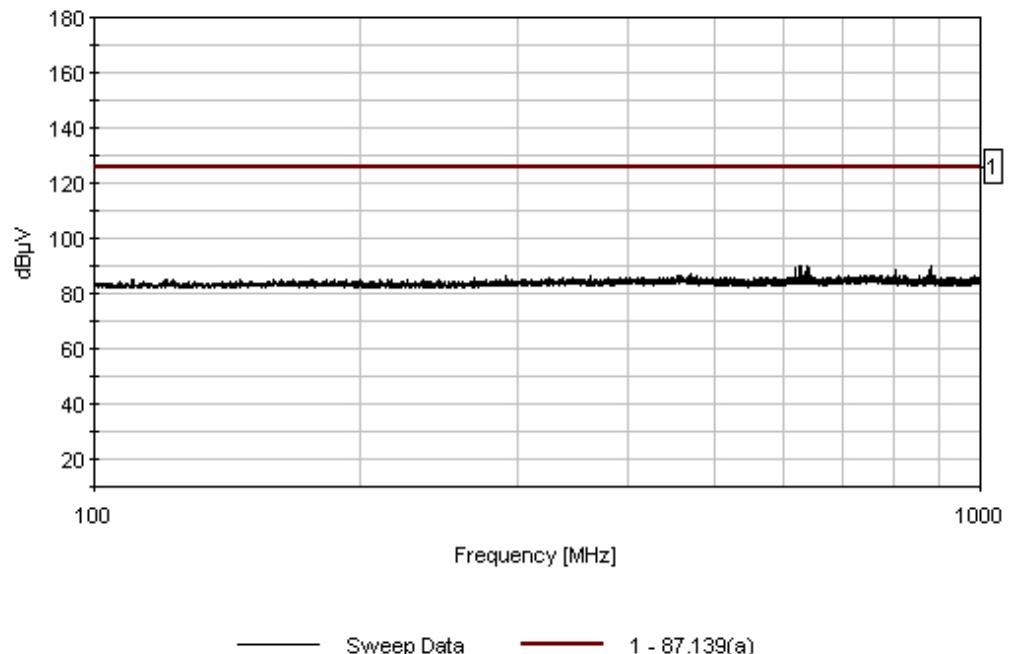
Transducer Legend:

T1=Cable Semiflex ANP01403

T2=Directional Coupler AN02903

#	Freq MHz	Reading listed by margin.				Test Lead: RF Output Port				
		Rdng dB μ V	T1 dB	T2 dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	627.427M	38.9	+1.0	+50.1		+0.0	90.0	126.0	-36.0	RF Ou
2	624.324M	38.7	+1.0	+50.1		+0.0	89.8	126.0	-36.2	RF Ou
3	624.824M	38.7	+1.0	+50.1		+0.0	89.8	126.0	-36.2	RF Ou
4	638.738M	38.6	+1.0	+50.2		+0.0	89.8	126.0	-36.2	RF Ou
5	878.478M	38.3	+1.2	+50.3		+0.0	89.8	126.0	-36.2	RF Ou
6	879.178M	38.3	+1.2	+50.3		+0.0	89.8	126.0	-36.2	RF Ou
7	618.118M	38.5	+1.0	+50.0		+0.0	89.5	126.0	-36.5	RF Ou
8	618.618M	38.4	+1.0	+50.0		+0.0	89.4	126.0	-36.6	RF Ou
9	880.280M	37.9	+1.2	+50.3		+0.0	89.4	126.0	-36.6	RF Ou
10	641.041M	38.1	+1.0	+50.2		+0.0	89.3	126.0	-36.7	RF Ou
11	879.379M	37.3	+1.2	+50.3		+0.0	88.8	126.0	-37.2	RF Ou
12	881.581M	37.4	+1.2	+50.2		+0.0	88.8	126.0	-37.2	RF Ou
13	627.927M	37.5	+1.0	+50.2		+0.0	88.7	126.0	-37.3	RF Ou
14	802.702M	37.3	+1.2	+50.2		+0.0	88.7	126.0	-37.3	RF Ou
15	877.577M	37.2	+1.2	+50.3		+0.0	88.7	126.0	-37.3	RF Ou
16	877.977M	37.2	+1.2	+50.3		+0.0	88.7	126.0	-37.3	RF Ou
17	637.637M	37.4	+1.0	+50.2		+0.0	88.6	126.0	-37.4	RF Ou
18	639.139M	37.4	+1.0	+50.2		+0.0	88.6	126.0	-37.4	RF Ou
19	880.980M	36.9	+1.2	+50.3		+0.0	88.4	126.0	-37.6	RF Ou
20	879.779M	36.7	+1.2	+50.3		+0.0	88.2	126.0	-37.8	RF Ou

CKC Laboratories, Inc. Date: 8/8/2007 Time: 9:48:45 AM Honeywell WO#: 86887
87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 6
Honeywell MN DMA-37B Low Channel



Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
 Specification: **87.139(a)**
 Work Order #: **86887** Date: 8/8/2007
 Test Type: **Conducted Emissions** Time: 10:12:05 AM
 Equipment: **Distance Measuring Equipment** Sequence #: 7
 Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
 Model: DMA-37B 115V/400Hz
 S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Directional Coupler, C4080-20	39139	05/21/2007	05/21/2009	02902

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

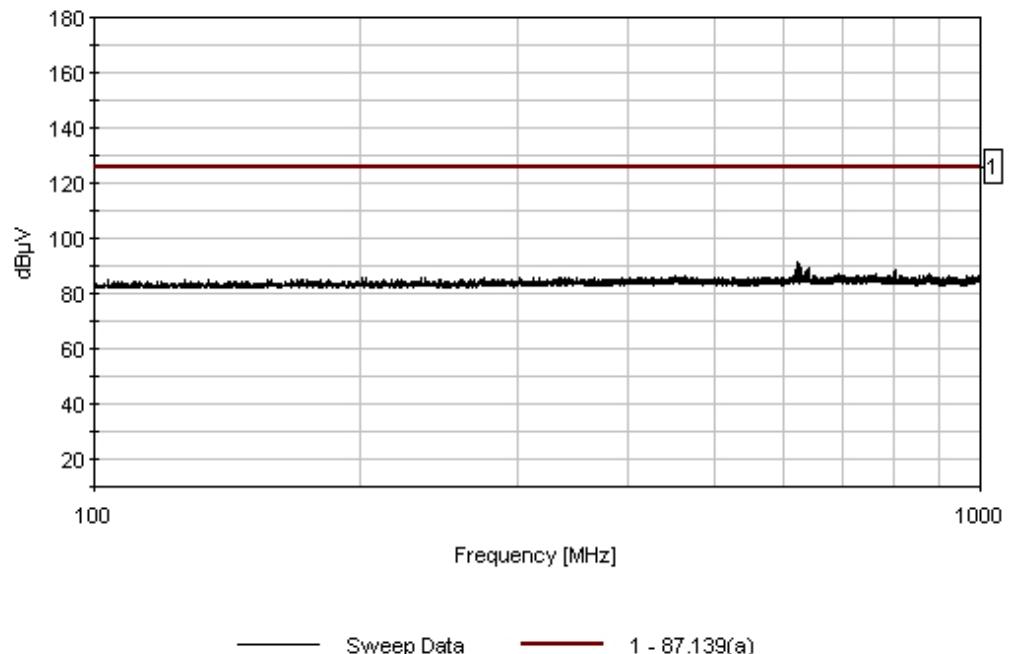
EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: Mid Channel. Frequency Range Investigated: 100-1000 MHz 100MHz-1000MHz RBW=100kHz, VBW=300kHz.

Transducer Legend:

T1=Cable Semiflex ANP01403	T2=Directional Coupler AN02903
----------------------------	--------------------------------

Measurement Data:				Reading listed by margin.							Test Lead: RF Output Port		
#	Freq MHz	Rdng dB μ V		T1 dB	T2 dB		dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant	
1	621.621M	40.1		+1.0	+50.0			+0.0	91.1	126.0	-34.9	RF Ou	
2	623.923M	39.8		+1.0	+50.1			+0.0	90.9	126.0	-35.1	RF Ou	
3	625.525M	39.7		+1.0	+50.1			+0.0	90.8	126.0	-35.2	RF Ou	
4	621.121M	39.7		+1.0	+50.0			+0.0	90.7	126.0	-35.3	RF Ou	
5	620.620M	39.4		+1.0	+50.0			+0.0	90.4	126.0	-35.6	RF Ou	
6	621.421M	39.0		+1.0	+50.0			+0.0	90.0	126.0	-36.0	RF Ou	
7	624.724M	38.5		+1.0	+50.1			+0.0	89.6	126.0	-36.4	RF Ou	
8	625.825M	38.5		+1.0	+50.1			+0.0	89.6	126.0	-36.4	RF Ou	
9	627.927M	38.4		+1.0	+50.2			+0.0	89.6	126.0	-36.4	RF Ou	
10	640.240M	37.8		+1.0	+50.2			+0.0	89.0	126.0	-37.0	RF Ou	
11	802.502M	37.5		+1.2	+50.2			+0.0	88.9	126.0	-37.1	RF Ou	
12	629.129M	37.6		+1.0	+50.2			+0.0	88.8	126.0	-37.2	RF Ou	
13	618.518M	37.7		+1.0	+50.0			+0.0	88.7	126.0	-37.3	RF Ou	
14	801.301M	37.4		+1.2	+50.1			+0.0	88.7	126.0	-37.3	RF Ou	
15	628.828M	37.3		+1.0	+50.2			+0.0	88.5	126.0	-37.5	RF Ou	
16	626.726M	37.2		+1.0	+50.1			+0.0	88.3	126.0	-37.7	RF Ou	
17	638.138M	37.1		+1.0	+50.2			+0.0	88.3	126.0	-37.7	RF Ou	
18	637.537M	37.0		+1.0	+50.2			+0.0	88.2	126.0	-37.8	RF Ou	
19	633.133M	36.7		+1.0	+50.2			+0.0	87.9	126.0	-38.1	RF Ou	
20	799.899M	36.6		+1.2	+50.1			+0.0	87.9	126.0	-38.1	RF Ou	

CKC Laboratories, Inc. Date: 8/8/2007 Time: 10:12:05 AM Honeywell WO#: 86887
87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 7
Honeywell MN DMA-37B Mid Channel



Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
 Specification: **87.139(a)**
 Work Order #: **86887** Date: 8/8/2007
 Test Type: **Conducted Emissions** Time: 10:40:00 AM
 Equipment: **Distance Measuring Equipment** Sequence #: 8
 Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
 Model: DMA-37B 115V/400Hz
 S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Directional Coupler, C6338-20	39151	05/21/2007	05/21/2009	02903

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: High Channel. Frequency Range Investigated: 100-1000 MHz 100MHz-1000MHz RBW=100kHz, VBW=300kHz.

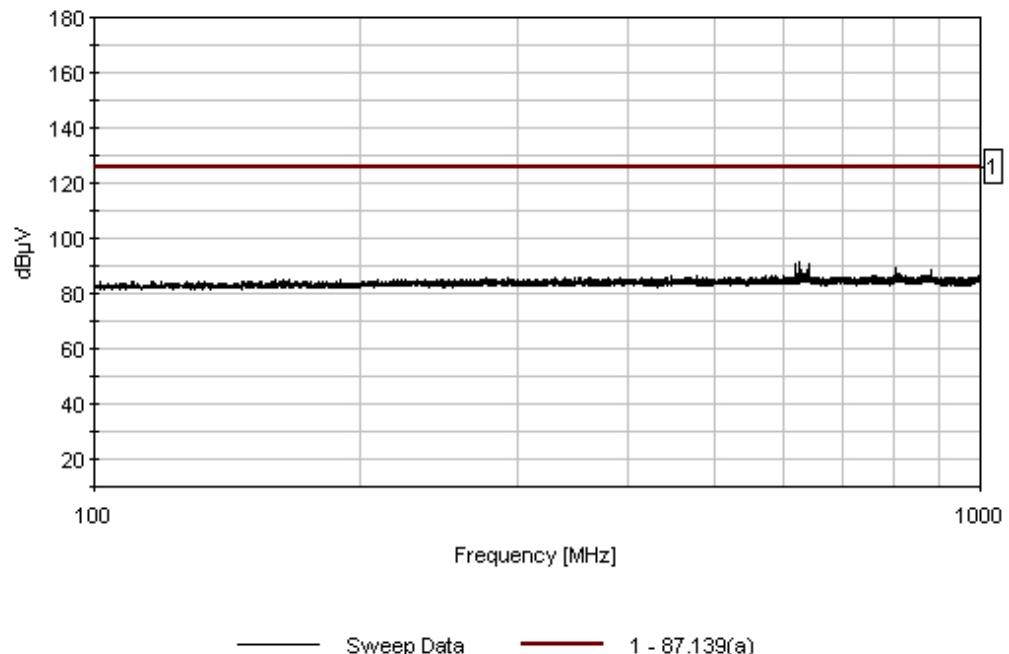
Transducer Legend:

T1=Cable Semiflex ANP01403

T2=Directional Coupler AN02903

#	Freq MHz	Reading listed by margin.				Test Lead: RF Output Port				
		Rdng dB μ V	T1 dB	T2 dB	dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	624.624M	40.6	+1.0	+50.1		+0.0	91.7	126.0	-34.3	RF Ou
2	640.940M	39.8	+1.0	+50.2		+0.0	91.0	126.0	-35.0	RF Ou
3	619.719M	39.5	+1.0	+50.0		+0.0	90.5	126.0	-35.5	RF Ou
4	803.102M	38.0	+1.2	+50.2		+0.0	89.4	126.0	-36.6	RF Ou
5	624.824M	38.2	+1.0	+50.1		+0.0	89.3	126.0	-36.7	RF Ou
6	618.918M	38.1	+1.0	+50.0		+0.0	89.1	126.0	-36.9	RF Ou
7	880.680M	37.4	+1.2	+50.3		+0.0	88.9	126.0	-37.1	RF Ou
8	635.835M	37.6	+1.0	+50.2		+0.0	88.8	126.0	-37.2	RF Ou
9	626.926M	37.6	+1.0	+50.1		+0.0	88.7	126.0	-37.3	RF Ou
10	641.341M	37.5	+1.0	+50.2		+0.0	88.7	126.0	-37.3	RF Ou
11	880.980M	37.2	+1.2	+50.3		+0.0	88.7	126.0	-37.3	RF Ou
12	804.204M	36.9	+1.2	+50.2		+0.0	88.3	126.0	-37.7	RF Ou
13	626.726M	37.1	+1.0	+50.1		+0.0	88.2	126.0	-37.8	RF Ou
14	640.740M	36.8	+1.0	+50.2		+0.0	88.0	126.0	-38.0	RF Ou
15	640.040M	36.6	+1.0	+50.2		+0.0	87.8	126.0	-38.2	RF Ou
16	632.332M	36.3	+1.0	+50.2		+0.0	87.5	126.0	-38.5	RF Ou
17	801.201M	36.2	+1.2	+50.1		+0.0	87.5	126.0	-38.5	RF Ou
18	628.628M	36.2	+1.0	+50.2		+0.0	87.4	126.0	-38.6	RF Ou
19	634.634M	36.1	+1.0	+50.2		+0.0	87.3	126.0	-38.7	RF Ou
20	638.138M	36.0	+1.0	+50.2		+0.0	87.2	126.0	-38.8	RF Ou

CKC Laboratories, Inc. Date: 8/8/2007 Time: 10:40:00 AM Honeywell WO#: 86887
87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 8
Honeywell MN DMA-37B High Channel



Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
 Specification: **87.139(a)**
 Work Order #: **86887** Date: 8/8/2007
 Test Type: **Conducted Emissions** Time: 17:33:07
 Equipment: **Distance Measuring Equipment** Sequence #: 11
 Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
 Model: DMA-37B 115V/400Hz
 S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Narda Directional Coupler, 3003-30	886	07/27/2007	07/27/2009	P01904
Narda Directional Coupler, 3004-30	285	07/27/2007	07/27/2009	P01905
Narda Directional Coupler, 3002-30	436	07/27/2007	07/27/2009	P01906
Pasternack 10dB Attenuator	CKC02229	11/30/2006	11/30/2008	P02229

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

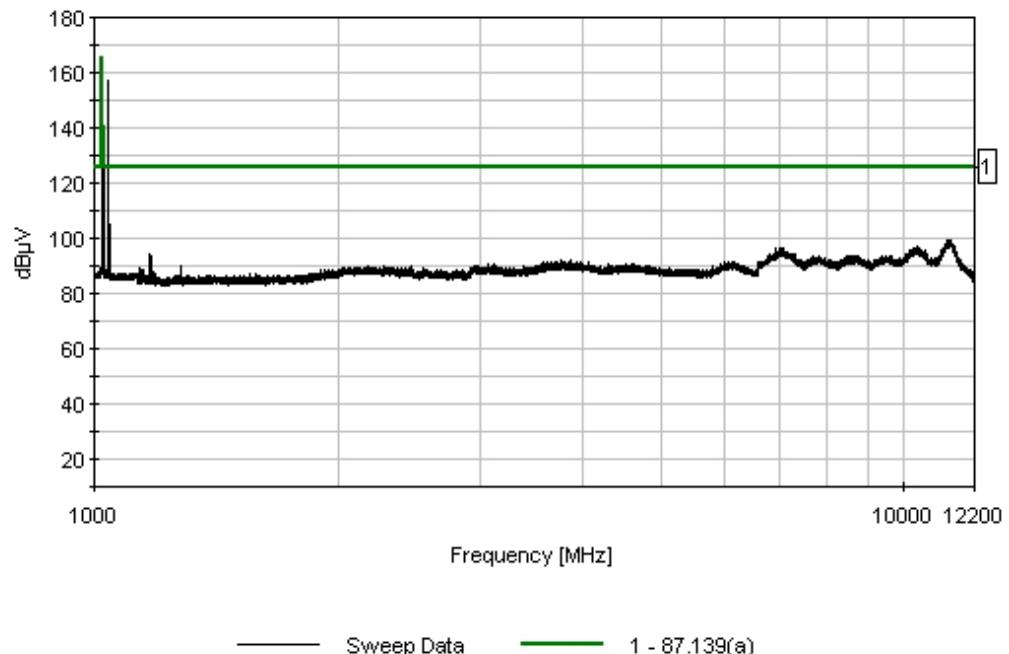
EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: Low Channel. Frequency Range Investigated: 1.0-12.2 GHz 1.0-12.2 GHz RBW=100kHz, VBW=300kHz.

Transducer Legend:

T1=Cable Semiflex ANP01403	T2=ATT 10d B P02229
T3=Directional Coupler AN02903	T4=ATT ANP01906 1-2 GHz
T5=ATT ANP01904 2-4 GHz	

#	Freq MHz	Rdng dB μ V	Reading listed by margin.				Test Lead: RF Output Port			
			T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB
1	1024.600M	95.9	+1.3	+0.0	+30.7	+10.1	+0.0	138.0	141.0	-3.0
										RF Ou
										Low Channel
2	1025.400M	95.7	+1.3	+0.0	+30.7	+10.1	+0.0	137.8	141.0	-3.2
										RF Ou
										Low Channel
3	1025.890M	83.6	+1.3	+0.0	+30.7	+10.1	+0.0	125.7	131.0	-5.3
										RF Ou
										Low Channel
4	1041.000M	114.8	+1.3 +0.0	+10.1	+0.0	+30.6	+0.0	156.8	166.0	-9.2
										RF Ou
5	1025.000M	114.5	+1.3 +0.0	+10.1	+0.0	+30.7	+0.0	156.6	166.0	-9.4
										RF Ou
										Carrier
6	1026.135M	76.4	+1.3	+0.0	+30.7	+10.1	+0.0	118.5	131.0	-12.5
										RF Ou
										Low Channel
7	1024.250M	84.1	+1.3	+0.0	+30.7	+10.1	+0.0	126.2	141.0	-14.8
										RF Ou
										Low Channel
8	1023.650M	70.0	+1.3	+0.0	+30.7	+10.1	+0.0	112.1	131.0	-18.9
										RF Ou
										Low Channel
9	1027.179M	63.3	+1.3 +0.0	+10.1	+0.0	+30.7	+0.0	105.4	126.0	-20.6
										RF Ou
10	1022.916M	62.7	+1.3 +0.0	+10.1	+0.0	+30.7	+0.0	104.8	126.0	-21.2
										RF Ou
11	1027.845M	58.8	+1.3 +0.0	+10.1	+0.0	+30.7	+0.0	100.9	126.0	-25.1
										RF Ou
12	2082.000M	46.5	+2.0 +31.8	+10.3	+0.0	+0.0	+0.0	90.6	126.0	-35.4
										RF Ou
13	3075.030M	47.2	+2.4 +29.5	+10.2	+0.0	+0.0	+0.0	89.3	126.0	-36.7
										RF Ou
14	2050.050M	44.5	+2.0 +31.6	+10.3	+0.0	+0.0	+0.0	88.4	126.0	-37.6
										RF Ou
15	3123.000M	46.3	+2.4 +29.5	+10.2	+0.0	+0.0	+0.0	88.4	126.0	-37.6
										RF Ou

CKC Laboratories, Inc. Date: 8/8/2007 Time: 17:33:07 Honeywell WO#: 86887
87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 11
Honeywell MN DMA-37B Low Channel



Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
 Specification: **87.139(a)**
 Work Order #: **86887** Date: 8/9/2007
 Test Type: **Conducted Emissions** Time: 14:55:29
 Equipment: **Distance Measuring Equipment** Sequence #: 10
 Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
 Model: DMA-37B 115V/400Hz
 S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Narda Directional Coupler, 3003-30	886	07/27/2007	07/27/2009	P01904
Narda Directional Coupler, 3004-30	285	07/27/2007	07/27/2009	P01905
Narda Directional Coupler, 3002-30	436	07/27/2007	07/27/2009	P01906
Pasternack 10dB Attenuator	CKC02229	11/30/2006	11/30/2008	P02229

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

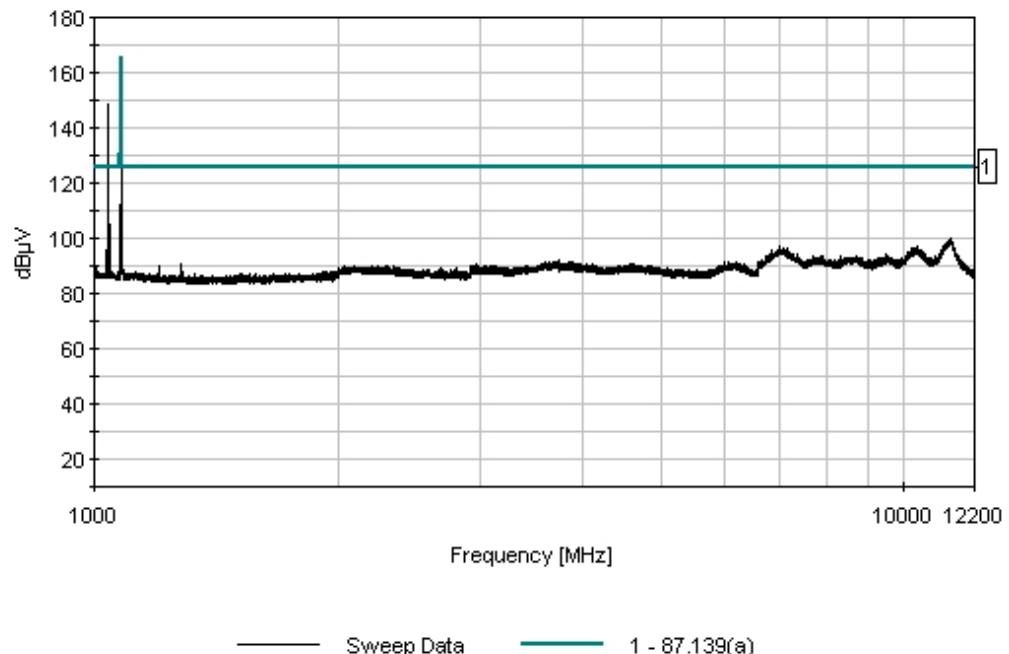
EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: Mid Channel. Frequency Range Investigated: 1.0-12.2 GHz 1.0-12.2 GHz RBW=100kHz, VBW=300kHz .

Transducer Legend:

T1=Cable Semiflex ANP01403	T2=ATT 10d B P02229
T3=Directional Coupler AN02903	T4=ATT ANP01905 4-10GHz
T5=ATT ANP01906 1-2 GHz	T6=ATT ANP01904 2-4 GHz

#	Freq MHz	Rdng dB μ V	Reading listed by margin.				Test Lead: RF Output Port				
			T1 T5	T2 T6	T3	T4	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	
			dB	dB	dB	dB				Ant	
1	1079.600M	98.3	+1.4 +10.1	+0.0	+30.4	+0.0	+0.0	140.2	141.0	-0.8	RF Ou Mid Channel
2	1080.400M	95.0	+1.4 +10.1	+0.0	+30.4	+0.0	+0.0	136.9	141.0	-4.1	RF Ou Mid Channel
3	1080.895M	82.6	+1.4 +10.1	+0.0	+30.4	+0.0	+0.0	124.5	131.0	-6.5	RF Ou Mid Channel
4	1080.000M	114.7	+1.4 +30.4	+10.1 +0.0	+0.0	+0.0	+0.0	156.6	166.0	-9.4	RF Ou Carrier
5	1041.000M	114.8	+1.3 +30.6	+10.1 +0.0	+0.0	+0.0	+0.0	156.8	166.0	-9.2	RF Ou
6	1079.285M	86.7	+1.4 +10.1	+0.0	+30.4	+0.0	+0.0	128.6	141.0	-12.4	RF Ou Mid Channel
7	1078.865M	75.4	+1.4 +10.1	+0.0	+30.4	+0.0	+0.0	117.3	131.0	-13.7	RF Ou Mid Channel
8	1080.650M	84.5	+1.4 +10.1	+0.0	+30.4	+0.0	+0.0	126.4	141.0	-14.6	RF Ou Mid Channel
9	11385.170M	50.7	+4.8 +0.0	+10.3 +0.0	+0.0	+34.5	+0.0	100.3	126.0	-25.7	RF Ou
10	11412.910M	50.7	+4.8 +0.0	+10.3 +0.0	+0.0	+34.4	+0.0	100.2	126.0	-25.8	RF Ou
11	11241.230M	50.5	+4.7 +0.0	+10.1 +0.0	+0.0	+32.7	+0.0	98.0	126.0	-28.0	RF Ou
12	2159.870M	46.9	+2.0 +0.0	+10.2 +31.5	+0.0	+0.0	+0.0	90.6	126.0	-35.4	RF Ou
13	2082.000M	46.5	+2.0 +0.0	+10.3 +31.8	+0.0	+0.0	+0.0	90.6	126.0	-35.4	RF Ou
14	3123.000M	46.3	+2.4 +0.0	+10.2 +29.5	+0.0	+0.0	+0.0	88.4	126.0	-37.6	RF Ou
15	3239.920M	45.9	+2.5 +0.0	+10.2 +29.3	+0.0	+0.0	+0.0	87.9	126.0	-38.1	RF Ou

CKC Laboratories, Inc. Date: 8/9/2007 Time: 14:55:29 Honeywell WO#: 86887
87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 10
Honeywell MN DMA-37B Mid Channel



Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Honeywell**
 Specification: **87.139(a)**
 Work Order #: **86887** Date: 8/9/2007
 Test Type: **Conducted Emissions** Time: 15:27:46
 Equipment: **Distance Measuring Equipment** Sequence #: 9
 Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
 Model: DMA-37B 115V/400Hz
 S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Semflex Cable	0038	04/23/2007	04/23/2009	P01403
Narda Directional Coupler, 3003-30	886	07/27/2007	07/27/2009	P01904
Narda Directional Coupler, 3004-30	285	07/27/2007	07/27/2009	P01905
Narda Directional Coupler, 3002-30	436	07/27/2007	07/27/2009	P01906
Pasternack 10dB Attenuator	CKC02229	11/30/2006	11/30/2008	P02229

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

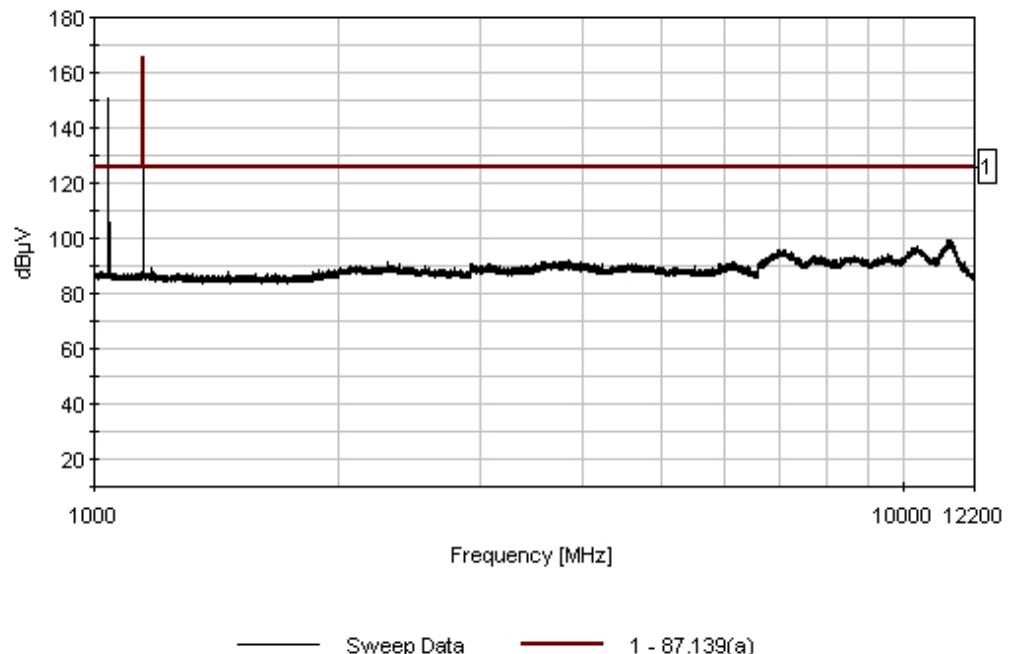
EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: High Channel. Frequency Range Investigated: 1.0-12.2 GHz 1.0-12.2 GHz RBW=100kHz, VBW=300kHz.

Transducer Legend:

T1=Cable Semiflex ANP01403	T2=ATT 10d B P02229
T3=Directional Coupler AN02903	T4=ATT ANP01905 4-10GHz
T5=ATT ANP01906 1-2 GHz	T6=ATT ANP01904 2-4 GHz

#	Freq MHz	Rdng dB μ V	Reading listed by margin.				Test Lead: RF Output Port				
			T1 T5	T2 T6	T3	T4	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	
			dB	dB	dB	dB				Ant	
1	1150.400M	95.7	+1.4 +10.2	+0.0	+30.1	+0.0	+0.0	137.4	141.0	-3.6	RF Ou High Channel
2	1149.600M	95.4	+1.4 +10.2	+0.0	+30.1	+0.0	+0.0	137.1	141.0	-3.9	RF Ou High Channel
3	1041.000M	114.8	+1.3 +30.6	+10.1 +0.0	+0.0	+0.0	+0.0	156.8	166.0	-9.2	RF Ou
4	1150.000M	113.3	+1.4 +30.1	+10.2 +0.0	+0.0	+0.0	+0.0	155.0	166.0	-11.0	RF Ou Carrier
5	1149.185M	77.2	+1.4 +10.2	+0.0	+30.1	+0.0	+0.0	118.9	131.0	-12.1	RF Ou High Channel
6	1149.083M	74.3	+1.4 +30.1	+10.2 +0.0	+0.0	+0.0	+0.0	116.0	131.0	-15.0	RF Ou
7	1151.020M	72.7	+1.4 +10.2	+0.0	+30.1	+0.0	+0.0	114.4	131.0	-16.6	RF Ou High Channel
8	1149.245M	79.0	+1.4 +10.2	+0.0	+30.1	+0.0	+0.0	120.7	141.0	-20.3	RF Ou High Channel
9	1150.740M	78.8	+1.4 +10.2	+0.0	+30.1	+0.0	+0.0	120.5	141.0	-20.5	RF Ou High Channel
10	11387.820M	50.0	+4.8 +0.0	+10.3 +0.0	+0.0	+34.5	+0.0	99.6	126.0	-26.4	RF Ou
11	11350.840M	50.3	+4.7 +0.0	+10.3 +0.0	+0.0	+34.1	+0.0	99.4	126.0	-26.6	RF Ou
12	11275.560M	51.0	+4.7 +0.0	+10.2 +0.0	+0.0	+33.1	+0.0	99.0	126.0	-27.0	RF Ou
13	2300.010M	47.8	+2.0 +0.0	+10.2 +31.4	+0.0	+0.0	+0.0	91.4	126.0	-34.6	RF Ou
14	2082.000M	46.5	+2.0 +0.0	+10.3 +31.8	+0.0	+0.0	+0.0	90.6	126.0	-35.4	RF Ou
15	3123.000M	46.3	+2.4 +0.0	+10.2 +29.5	+0.0	+0.0	+0.0	88.4	126.0	-37.6	RF Ou
16	3450.010M	45.6	+2.5 +0.0	+10.2 +29.6	+0.0	+0.0	+0.0	87.9	126.0	-38.1	RF Ou

CKC Laboratories, Inc. Date: 8/9/2007 Time: 15:27:46 Honeywell WO#: 86887
87.139(a) Test Lead: RF Output Port 115V/400Hz Sequence#: 9
Honeywell MN DMA-37B High Channel



FCC 2.1033(c)(14)/2.1053/87.139 - FIELD STRENGTH OF SPURIOUS RADIATION

Test Setup Photos





Test Data Sheets

Test Location: CKC Laboratories, Inc. • 4933 Sierra Pines Dr. • Mariposa, CA 95338 • 1-800-500-4EMC (4362)
 Customer: **Honeywell**
 Specification: **87.139(a)**
 Work Order #: **86887** Date: 8/10/2007
 Test Type: **Radiated Scan** Time: 11:01:37
 Equipment: **Distance Measuring Equipment** Sequence#: 12
 Manufacturer: Honeywell International, Inc. Tested By: Randal Clark
 Model: DMA-37B
 S/N: DMA37B-07296

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Agilent E4446A SA	US44300407	01/03/2007	01/03/2009	02660
Chase CBL6111C Bilog	2456	12/30/2006	12/30/2008	01991
EMCO 3115 Horn Antenna	8006-3413	03/17/2007	03/17/2009	00327
EMCO Loop Antenna	1074	05/01/2007	05/01/2009	00226
HP 8447D Preamp	1937A02604	03/14/2007	03/14/2009	00099
HP 8449B Preamp	3008A00301	12/13/2006	12/13/2008	2010
Cable, Pasternack 36"	NA	04/24/2007	04/24/2009	P05202
Cable, Pasternack 48"	NA	04/24/2007	04/24/2009	P05203
Cable, Andrews Hardline	NA	04/23/2007	04/23/2009	P01012

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Distance Measuring Equipment*	Honeywell International, Inc.	DMA-37B	DMA37B-07296

Support Devices:

Function	Manufacturer	Model #	S/N
Quantum Interface Panel	Honeywell International Inc.	747-0474-001	3
492 Database analyzer	Aeroflex	DT400H-00	N02202038
ATC/DME Signal Generator	Goodrich	SDX 2000	216
Programmable AC Power Source	Pacific Power Source	303AT-E-T1	00152

Test Conditions / Notes:

EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database Analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. EUT is placed on a non-conductive table in the center of the turntable. RF output is terminated directly to the signal generator via a RF cable. All wiring for the EUT is routed from the back connector down through the ground plane. All support equipment is located outside the test shed. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency. Center Frequency: Data represents worst case of Low, Mid and High Channels. Frequency Range Investigated: 9kHz-12.2 GHz. 9kHz - 150kHz RBW=300Hz, VBW=1kHz 150kHz - 30MHz RBW=10kHz, VBW=30kHz 30MHz - 1 GHz RBW=100kHz, VBW=300kHz 1GHz - 12.2 GHz RBW=1MHz, VBW=3MHz. **No EUT emissions detected within 20dB of the limit.**

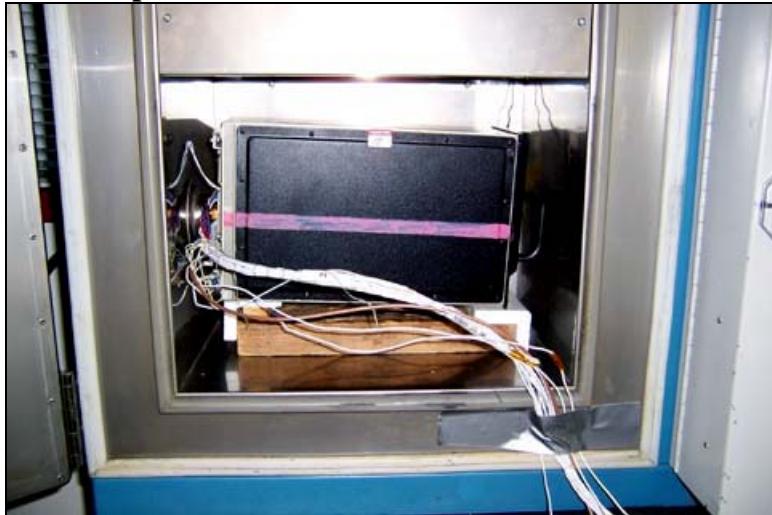
FCC 2.1033(c)(14)/2.1055/87.133 - FREQUENCY STABILITY

Test Equipment

Asset	Name	Manufacturer	Model	Serial	Cal Date	Cal Due
02660	Spectrum Analyzer, PSA	Agilent	E4446A	US44300407	1/3/2007	1/3/2009
P01403	Cable HF 3m 2.4mm	Semflex			4/23/2007	4/23/2009
P01906	Directional Coupler, HF	NARDA	3002-30	436	7/27/2007	7/27/2009
P02229	Attenuator	Pasternack	PE7010-10	CKC02229	11/30/2006	11/30/2008
01879	Temperature Chamber	Thermotron	S-1.2 Min.	11899	12/21/2006	12/21/2008
02242	Thermometer	Omega	HH-26K	T-202884	10/18/2005	10/18/2007

Test Conditions: EUT is Distance Measuring Equipment for use in commercial aviation. The EUT output is connected to the DME Signal Generator in order to lock to DME station. The 492 Database analyzer is used for controlling EUT center frequency. The interface panel is a passive device used for cockpit simulation. Power is provided directly to EUT from a programmable power source via provided wiring harness. RF output is routed through a directional coupler and suitable attenuation for direct connection to spectrum analyzer. The signal at 1041MHz is an automated self-test feature inherent in normal equipment operation. The automatic self-test feature is built into the DMA-37B: Approximately once every 1.5 seconds the processor initiates an interrogation in the same way as it would in normal mode. This interrogation produces a pulse-pair at 1041MHz. After a known delay from the zero-range trigger, the FPGA generates a self-test modulation in the receiver. The self-test provides a method of testing the entire system by simulating a reply at a known range to a generated interrogation. The results of the test are monitored and compared against information stored in memory. If any results of the test indicate a malfunction, a DME invalid flag is generated and routed to DME users via the ARINC 429 output. The emissions at 1041MHz also have the 87.139(a) emissions mask applied. The emissions at the chosen center frequency do not occur simultaneously with those at the 1041MHz test frequency.

Test Setup Photos



Test Data

Customer: Honeywell International

WO#: 86887

Date: 9-Aug-07

Test Engineer: Randal Clark

Device Model #: DMA-37B

Operating Voltage: 115 VAC

Frequency Limit: 20 PPM

Temperature Variations

Channel Frequency:	Channel 1 (MHz)		Channel 2 (MHz)		Channel 3 (MHz)		
	1025	Dev. (MHz)	1080	Dev. (MHz)	1150	Dev. (MHz)	
Temp (C)	Voltage						
-30	115	1024.99936	0.00064	1079.99820	0.00180	1150.00042	0.00042
-20	115	1025.00006	0.00006	1079.99728	0.00272	1150.00110	0.00110
-10	115	1024.99914	0.00086	1079.99892	0.00108	1150.00080	0.00080
0	115	1024.99992	0.00008	1079.99834	0.00166	1149.99860	0.00140
10	115	1024.99944	0.00056	1079.99944	0.00056	1149.99986	0.00014
20	115	1024.99930	0.00070	1079.99786	0.00214	1149.99972	0.00028
30	115	1025.00060	0.00060	1079.99886	0.00114	1149.99972	0.00028
40	115	1024.99870	0.00130	1079.99820	0.00180	1150.00010	0.00010
50	115	1024.99848	0.00152	1079.99854	0.00146	1150.00096	0.00096

Voltage Variations ($\pm 15\%$)

20	97.8	1024.99860	0.00140	1079.99855	0.00145	1150.00126	0.00126
20	115	1024.99930	0.00070	1079.99786	0.00214	1149.99972	0.00028
20	132.3	1024.99919	0.00081	1079.99894	0.00106	1150.00030	0.00030
Max Deviation (MHz)		0.00152		0.00272		0.00140	
Max Deviation (PPM)		1.48293		2.51852		1.21739	
		PASS		PASS		PASS	