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PREPARED BY: P. Bailey		DATE 02/13/01		APPROVED BY TECHNICAL MANAGER C. Dossdall		DATE 02/13/01
				APPROVED BY PRODUCT LINE DIRECTOR M. McGowan		DATE 02/13/01
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Honeywell		AW/CRITICAL NOTATION				
		SECURITY NOTATION		TITLE PAGE		CR-1 PAGE

ENGINEERING SPECIFICATION

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SPEC
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B
REV LTR

SEE THE TITLE PAGE FOR PROPRIETARY AND DATA RIGHTS NOTATIONS.

THE LATEST REVISION OF EACH SHEET IS INDICATED ON THE PAGE INDEX.

Page	Rev Ltr	Page	Rev Ltr	Page	Rev Ltr	Page	Rev Ltr	Page	Rev Ltr
Title		31	-	76	-				
CR-1	B	32	-	77	-				
Page		33	-	78	-				
Index		34	-	79	-				
CR-2	B	35	-	80	-				
Revision		36	-	81	-				
Record		37	-	82	-				
CR-3	B	38	-	83	-				
		39	-	84	-				
Table of		40	-	85	-				
Contents		41	-	86	-				
i	-	42	-	87	-				
		43	-	88	-				
1	A	44	-	89	-				
2	-	45	-	90	-				
3	-	46	-	91	-				
4	B	47	-	92	-				
5	-	48	-	93	-				
6	-	49	-	94	-				
7	-	50	-	95	-				
8	-	51	-	96	-				
9	-	52	-	97	-				
10	A	53	-	98	-				
11	-	54	-	99	-				
12	-	55	-	100	-				
13	-	56	-	101	-				
14	-	57	-	102	-				
15	-	58	-	103	-				
16	-	59	-	104	-				
17	-	60	-	105	-				
18	-	61	-	106	-				
19	-	62	-	107	-				
20	-	63	-	108	-				
21	-	64	-	109	-				
22	-	65	-	110	-				
23	-	66	-	111	-				
24	-	67	-	112	-				
25	-	68	-						
26	-	69	-						
27	-	70	-						
28	-	71	-						
29	-	72	-						
30	-	73	-						
		74	-						
		75	-						
				TOTAL PAGES:	116				

Honeywell

AW/CRITICAL NOTATION

SECURITY NOTATION

PAGE INDEX

CR-2
PAGE

ENGINEERING SPECIFICATION	SECURITY NOTATION		SPEC NO.	EB7516219	SEE PAGE INDEX FOR THIS SHEET REV LETTER
			CAGE CODE	55939	
	SEE THE TITLE PAGE FOR PROPRIETARY AND DATA RIGHTS NOTATIONS.				

REV LTR		2.2.2 System Description and Installation Manual A15-5111-001-00 3. TEST CERTIFICATION I do hereby certify that to the best of my knowledge the technical test data contained in this report are true and correct and that the SD-700 has been shown to have completely met the cited requirements. SIGNED: <u></u> Peter D. Bailey Test Engineer Certification Peter D. Bailey BS Arizona State University, 1969 15 Years Experience in Commercial Avionics 4. GENERAL INFORMATION 4.1 <u>Type Designation</u> The equipment has been designated by Honeywell, Inc., Commercial Electronic Systems, as an SD-700 Satellite Data Unit for use in a Multichannel SATCOM System, MCS-7000. 4.2 <u>Service and Rule for Intended Operation</u> Aeronautical Mobile Satellite Service Part 87, Subpart A 4.3 <u>Description of Equipment</u> 4.3.1 Type of Emission G7W GIW (A-QPSK) GID (A-BPSK) 4.3.2 Frequency Range [MHz] 1626.5 - 1660.5 4.3.3 Power Rating 40 Watts Maximum for MCS-7000 with 40 W HPA. 20 Watts Maximum for MCS-7000 with 20 W HPA. 31.6 mW Maximum for the SD700 alone.
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Honeywell	AW/CRITICAL NOTATION		
	SECURITY NOTATION	SUPPLEMENTS	4 PAGE

ENGINEERING SPECIFICATION

SECURITY NOTATION

SPEC
NO.

EB7516219

SEE PAGE INDEX
FOR THIS SHEET
REV LETTERCAGE
CODE

55939

REV LTR

SEE THE TITLE PAGE FOR PROPRIETARY AND DATA RIGHTS NOTATIONS.

REV
LTR

TEST PROCEDURES AND DATA:

TEST NO: 1

5.0 PROCEDURE:

1. Connect the equipment as shown in the block diagram in Section 4.0 of test number 1.
2. Using the terminal, set the SDU back-off attenuator to 0 dB. (This is the nominal back-off setting.)
3. Using the terminal, set the SDU to transmit a CW carrier on channel 1 at 1643.500 MHz.
4. For the 20W HPA, using the terminal set the HPA back-off attenuator to produce $11.2 \text{ dBm} \pm 0.5 \text{ dB}$ level on the power meter. (This level corresponds to $20 \text{ W} \pm 2.2 \text{ W}$ at the HPA RF connector.) Record this reading.
5. For the 40W HPA, using the terminal set the HPA back-off attenuator to produce $14.2 \text{ dBm} \pm 0.5 \text{ dB}$ level on power meter. (This level corresponds to $40 \text{ W} \pm 5 \text{ W}$ at the HPA RF connector.) Record this reading.
6. Using the terminal, set the channel frequency to 1626.500 MHz and record the power reading.
7. Using the terminal, set the channel frequency to 1660.500 MHz and record the power reading.
8. For the 20W HPA, repeat steps 3, 4, 6, and 7 for channel numbers two through eight.
9. For the 40W HPA, repeat steps 3, 5, 6, and 7 for channel numbers two through eight.

NOTE 1: The total L-band loss between HPA TX port and the power meter is 31.8 dB. This includes the insertion loss of the diplexer, attenuator, directional coupler, and cable losses.

NOTE 2: The primary input power voltage tolerance is $115\text{V} \pm 10$ percent and the frequency tolerance is $400 \text{ Hz} \pm 2$ percent.

NOTE 3:

6.0 DATA

FREQUENCY [MHz]	Transmitted Power With 20W HPA (dBm)							
	Ch 1	Ch 2	Ch 3	Ch 4	Ch 5	Ch 6	Ch 7	Ch 8
1626.500	43.0	43.0	43.2	43.0	43.2	43.2	43.1	43.1
1643.500	43.0	43.0	43.1	43.1	43.0	43.1	43.0	43.1
1660.500	42.0	42.1	42.0	42.1	42.1	42.0	42.2	42.1

TEST PERFORMED BY: Pete Bailey

DATE: 10/2/00

Honeywell

AW/CRITICAL NOTATION

SECURITY NOTATION

SUPPLEMENTS

14
PAGE

NOTE 3: The table below gives the RF output power from the SD-700 by itself at 0 dB backoff for all 8 channels. Backoff at 0 dB is the condition for typical maximum output from the SD-700 and was used to drive the HPAs for the Output Power tests. The output power was measured across the transmit frequency range of 1626.5 MHz to 1660.5 MHz for each channel. The frequencies for minimum and maximum power are indicated.

SD-700 Output Power at 0 dB Backoff vs Frequency and Channel				
Channel	Min Power Point (Freq in MHz)	Min Power (dBm)	Max Power Point (Freq in MHz)	Max Power (dBm)
1	1656.5	12.2	1628.5	12.9
2	1656.5	12.4	1628.5	12.9
3	1656.5	12.3	1628.5	13.0
4	1656.5	12.2	1628.5	12.9
5	1656.5	12.3	1628.5	12.9
6	1656.5	12.2	1628.5	12.9
7	1656.5	12.4	1628.5	12.8
8	1656.5	12.2	1628.5	13.0

INSERT AFTER NOTE 2
ON P. 14

C.O. 200201601A

7 OF 7