

INSTRUMENT SPECIALTIES CO., INC. - WORLD COMPLIANCE CENTER													
<b>ELECTROMAGNETIC COMPATIBILITY (EMC) TEST REPORT</b> FOR Harris Corporation <b>EUT: Local Area Augmentation System (LAAS)</b>	<table border="1"> <thead> <tr> <th>Document No.</th> <th>Revision</th> <th>Issue Date</th> </tr> </thead> <tbody> <tr> <td>111147 B</td> <td>0</td> <td>16 June 2000</td> </tr> <tr> <th colspan="2">Purchase Order No.</th> <th>Page</th> </tr> <tr> <td colspan="2">324976-000</td> <td>11 of 187</td> </tr> </tbody> </table>	Document No.	Revision	Issue Date	111147 B	0	16 June 2000	Purchase Order No.		Page	324976-000		11 of 187
	Document No.	Revision	Issue Date										
	111147 B	0	16 June 2000										
Purchase Order No.		Page											
324976-000		11 of 187											

## 10.2 CE06 Test Method

### 10.2.1 Purpose of Test

The testing was performed as described below to verify compliance of the EUT in accordance with MIL-STD-461C Part 2 for Class A1c equipment. This test is used to verify that conducted emissions appearing at the antenna terminal of the EUT do not exceed the specified requirements.

### 10.2.2 Test Procedure

The spurious and harmonic emissions at the antenna terminal were investigated in the frequency range of 10 kHz to 3 GHz. The transmitter and the receiver were tested in standby modes. The transmitter was also tested in key-down or transmitting at 113 MHz. The transmitter in key-down mode was modulated using the BIT test software. During the transmit test, the fundamental frequency was reduced using a notch filter and appropriate attenuator. The resultant levels were plotted by a digital plotter and presented relative to the specification levels in voltage amplitude versus frequency.

### 10.2.5 Test Equipment for: CE06

Mfgr./Model	Description	Serial	Calibration Due
HP/8572A	(100 Hz - 22 GHz) EMI receiver sys #1	3610A01163	9/29/00
MIC/2022D	(10 kHz - 1 GHz) RF signal generator	119224015	2/14/01
LWI/44-10	(10 dB), (DC - 18 GHz)	BB2143	1/5/01
TX/RX SYS/11-35-0	Notch Filter	34273-A	Calibration Not Required

File 5

WORLD COMPLIANCE CENTER  
EMISSION LEVEL [dBuV]

23 May 2000 14: 43: 24

PEAK

160	CE06 KEY DOWN
	HARRIS CORPORATION
	LAAS TRANSMITTER
	BERT @ 113 MHz, 150 WATTS
140	TEST NO. 1
120	
100	
80	
100	

125

FREQUENCY [MHZ]

97 of 187

INSTRUMENT SPECIALTIES CO., INC  
WORLD COMPLIANCE CENTER  
TEST DATA

REPORT No.: 111147                      DATE: 23 MAY 2000                      TEST No.: 1  
TITLE OF TEST: MIL-STD-461C PART 2 CE06    KEY DOWN TEST  
CUSTOMER: HARRIS CORPORATION  
EUT DESCRIPTION: LAAS TRANSMITTER  
TEST MODE: BERT , 133 MHz @ 150 WATTS  
SERIAL No.:  
FREQUENCY RANGE: 100 MHz - 125 MHz    SENSOR LOCATION: XMIT PORT  
INPUT POWER: 120VAC/60Hz    TEMP: 74.6 f    HUM: 50 %    BAR: 29.83 "  
TEST PERFORMED BY: GRANT METZGAR  
TEST RESULTS: POWER AT FUNDAMENTAL  
TEST CONDITIONS: COPPER TABLE TOP ARRANGEMENT.  
\* NOTE \* EUT TRANSMIT PORT THROUGH 50 dB PAD AT OUTPUT WITH 40 dB PAD AT  
INPUT TO SPECTRUM ANALYZER.

=====

WORLD COMPLIANCE CENTER	23 May 2000	14:43:24
-------------------------	-------------	----------

=====

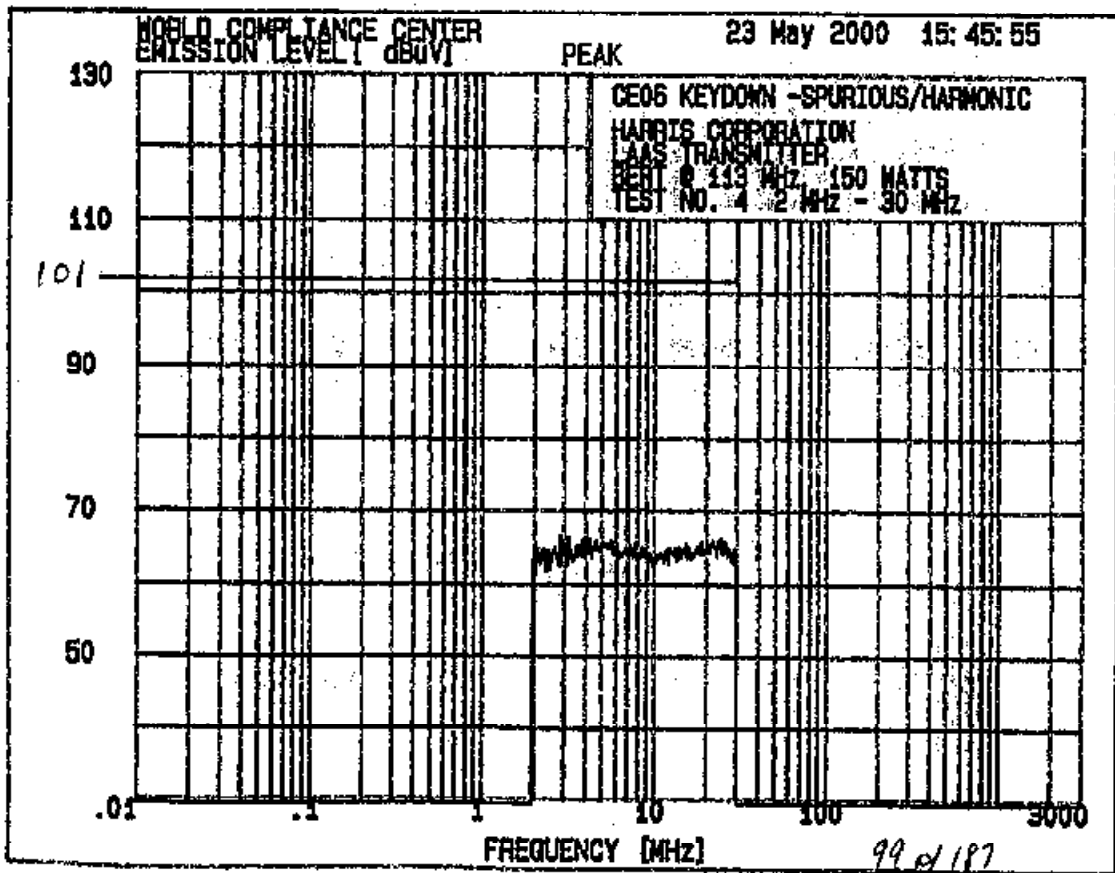
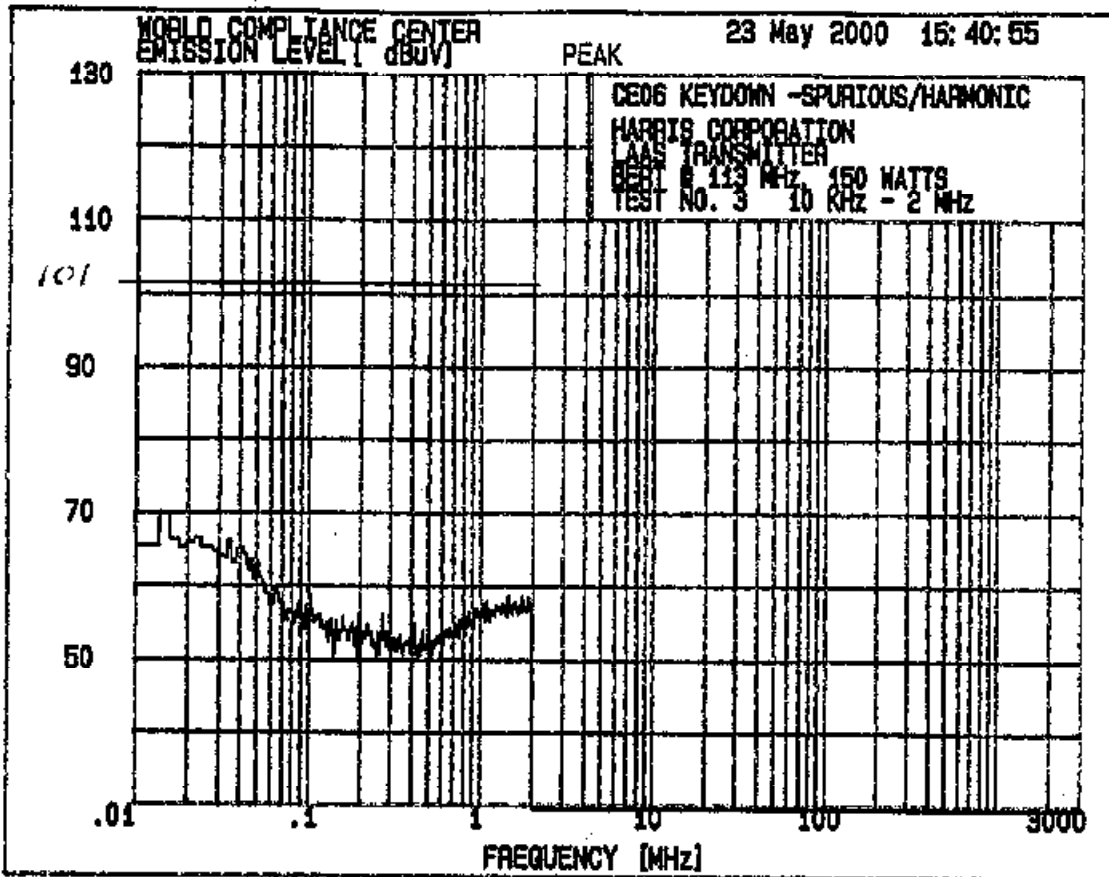
1. LAAS TRANSMITTER CE06  
1.3 CE06 KEY DOWN 100-125 MHz

=====

HARRIS CORPORATION  
LAAS TRANSMITTER  
BERT @ 113 MHz, 150 WATTS  
TEST NO. 1

Peaks above 140 dBuV  
peak criteria = 6 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	113.35	157.1	17.1



INSTRUMENT SPECIALTIES CO., INC  
 WORLD COMPLIANCE CENTER  
 TEST DATA

REPORT No.: 111147      DATE: 23 MAY 2000      TEST No.: 3  
 TITLE OF TEST: MIL-STD-461C PART 2 CE06 KEY DOWN TEST  
 CUSTOMER: HARRIS CORPORATION  
 EUT DESCRIPTION: LAAS TRANSMITTER  
 TEST MODE: BERT, 113 MHz @ 150 WATTS  
 SERIAL No.: 0115  
 FREQUENCY RANGE: 10 KHz - 2 MHz      SENSOR LOCATION: XMIT PORT  
 INPUT POWER: 120VAC/60Hz      TEMP: 74.6 f      HUM: 50 %      BAR: 29.83 "  
 TEST PERFORMED BY: GRANT METZGAR  
 TEST RESULTS: SPURIOS AND HARMONICS > 80 dB BELOW FUNDAMENTAL  
 TEST CONDITIONS: COPPER TABLE TOP ARRANGEMENT.  
 \* NOTE \* FUNDAMENTAL @ 157.1 dBuV, SPURIOUS AND HARMONICS MUST BE LOWER THEN  
 77.4 dBuV.  
 107

=====

WORLD COMPLIANCE CENTER      23 May 2000 15:40:55

=====

1. LAAS TRANSMITTER CE06  
 1.1 CE06 KEY DOWN - SPURIOUS/HARMONIC

=====

HARRIS CORPORATION  
 LAAS TRANSMITTER  
 BERT @ 113 MHz, 150 WATTS  
 TEST NO. 3    10 KHz - 2 MHz

22 highest Peaks above 30 dBuV  
 peak criteria = 1 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	.01405	70.2	
2	.0224	66.7	30.04
3	.03481	66.3	
4	.041	65.4	
5	.0471	63.6	
6	.05144	63.2	
7	.06535	60	
8	.1058	58.9	
9	1.487	58.8	
10	1.796	58.7	
11	1.937	58.7	
12	1.113	58.1	
13	1.624	58	
14	.09068	57.8	
15	1.381	57.8	
16	1.071	57.7	
17	1.262	57.6	
18	.03905	57.4	
19	1.141	57.2	
20	.9687	57.1	
21	.8224	57	
22	.07796	56.9	

100 of 187

INSTRUMENT SPECIALTIES CO., INC  
 WORLD COMPLIANCE CENTER  
 TEST DATA

REPORT No.: 111147      DATE: 23 MAY 2000      TEST No.: 4  
 TITLE OF TEST: MIL-STD-461C PART 2 CE06    KEY DOWN TEST  
 CUSTOMER: HARRIS CORPORATION  
 EUT DESCRIPTION: LAAS TRANSMITTER  
 TEST MODE: BERT , 113 MHz @ 150 WATTS  
 SERIAL No.: 0115  
 FREQUENCY RANGE: 2 MHz - 30 MHz    SENSOR LOCATION: XMIT PORT  
 INPUT POWER: 120VAC/60Hz    TEMP: 74.6 f    HUM: 53 %    BAR: 29.83 "  
 TEST PERFORMED BY: GRANT METZGAR  
 TEST RESULTS: SPURIOUS AND HARMONICS > 80 dB BELOW FUNDAMENTAL  
 TEST CONDITIONS: COPPER TABLE TOP ARRANGEMENT.  
 \* NOTE \* FUNDAMENTAL @ 157.1 dBuV, SPURIOUS AND HARMONICS MUST BE LOWER THEN  
~~87.1~~ dBuV.  
 (C)

=====

WORLD COMPLIANCE CENTER      23 May 2000    15:45:55

=====

1. LAAS TRANSMITTER CE06  
 1.4 CE06 KEY DOWN - SPURIOUS/HARMONIC

=====

HARRIS CORPORATION  
 LAAS TRANSMITTER  
 BERT @ 113 MHz, 150 WATTS  
 TEST NO. 4    2 MHz - 30 MHz

22 Highest Peaks above 50 dBuV  
 peak criteria = 1 dB

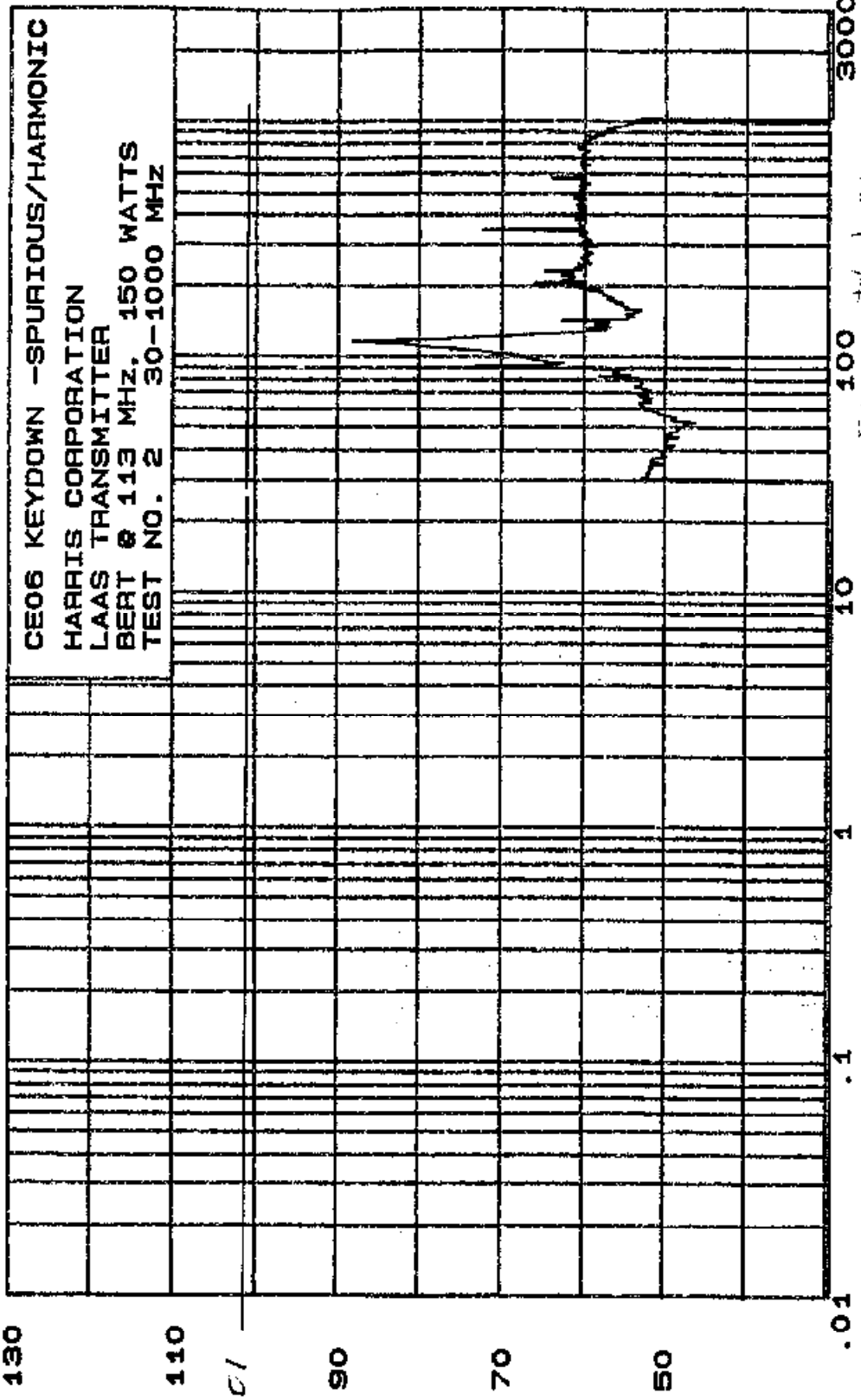
PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	2.899	66.7	34 dB
2	3.247	66.5	
3	4.125	66.4	
4	4.284	66.4	
5	24.68	66.4	
6	4.023	66.3	
7	2.973	66.2	
8	3.922	66.2	
9	22.04	66	
10	4.679	65.9	
11	5.724	65.9	
12	18.95	65.9	
13	25.96	65.9	
14	7.943	65.8	
15	20.43	65.8	
16	3.127	65.7	
17	15.49	65.7	
18	7.366	65.5	
19	2.063	65.3	
20	3.683	65.3	
21	6.174	65.3	
22	15.88	65.3	

101 of 187

23 May 2000 15:29:12

WORLD COMPLIANCE CENTER  
EMISSION LEVEL [dBuV] PEAK

CE06 KEYDOWN -SPURIOUS/HARMONIC  
HARRIS CORPORATION  
LAAS TRANSMITTER  
BERT @ 113 MHZ, 150 WATTS  
TEST NO. 2 30-1000 MHZ



INSTRUMENT SPECIALTIES CO., INC  
 WORLD COMPLIANCE CENTER  
 TEST DATA

REPORT No.: 111147                      DATE: 23 MAY 2000                      TEST No.: 2  
 TITLE OF TEST: MIL-STD-461C PART 2 CE06    KEY DOWN TEST  
 CUSTOMER: HARRIS CORPORATION  
 EUT DESCRIPTION: LAAS TRANSMITTER  
 TEST MODE: BERT , 113 MHz @ 150 WATTS  
 SERIAL No.: 0115  
 FREQUENCY RANGE: 30 MHz - 1000 MHz    SENSOR LOCATION: XMIT PORT  
 INPUT POWER: 120VAC/60Hz    TEMP: 74.6 f    HUM: 50 %    BAR: 29.83 "  
 TEST PERFORMED BY: GRANT METZGAR  
 TEST RESULTS: SPURIOUS AND HARMONICS > 90 dB BELOW FUNDAMENTAL  
 TEST CONDITIONS: COPPER TABLE TOP ARRANGEMENT.  
 \* NOTE \* FUNDAMENTAL @ 157.1 dBuV, SPURIOUS AND HARMONICS MUST BE LOWER THAN  
~~157.1~~ dBuV.

101

=====

WORLD COMPLIANCE CENTER                      23 May 2000 16:29:12

=====

1. LAAS TRANSMITTER CE06  
 1.1 CE06 KEY DOWN - SPURIOUS/HARMONIC

=====

HARRIS CORPORATION  
 LAAS TRANSMITTER  
 BERT @ 113 MHz, 150 WATTS  
 TEST NO. 2    30-1000 MHz

22 Highest Peaks above 50 dBuV  
 peak criteria = 1 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	114.81	88.2	F0
2	90.37	73.2	26
3	343.56	72.3	
4	204.96	66.1	
5	229.56	64.9	
6	568.67	64.1	
7	221.03	62.9	
8	140.43	62.8	
9	210.19	62.8	
10	199.86	61.7	
11	470.75	61.4	
12	399.63	61.3	
13	389.69	61.2	
14	759.82	61	
15	299.1	60.3	
16	260.39	60.4	
17	190.03	59.7	
18	130.22	59.6	
19	133.54	58.9	
20	81.7	58.3	
21	917.88	57.3	
22	83.79	56.5	

\* INCOMPLETE CAPTURE @ FUNDAMENTAL  
 DUE TO ATTENUATOR OFF  
 NOTCH FILTER



WORLD COMPLIANCE CENTER  
EMISSION LEVEL [dBuV]

23 May 2000 12:31:10 PEAK

CE06 KEYDOWN -SPURIOUS/HARMONIC  
HARRIS CORPORATION  
LAAS TRANSMITTER  
BERT @ 113 MHZ, 150 WATTS  
TEST NO. 5 1 GHz - 3 GHz

130

110

101

90

70

50

.01

FREQUENCY [MHZ]

.2

1

10

100

3000

104 of 187

INSTRUMENT SPECIALTIES CO., INC  
 WORLD COMPLIANCE CENTER  
 TEST DATA

REPORT No.: 111147      DATE: 23 MAY 2000      TEST No.: 5  
 TITLE OF TEST: MIL-STD-161C PART 2 CE06      KEY DOWN TEST  
 CUSTOMER: HARRIS CORPORATION  
 EUT DESCRIPTION: LAAS TRANSMITTER  
 TEST MODE: BERT @ 113 MHz @ 130 WATTS  
 SERIAL No.: 0115  
 FREQUENCY RANGE: 1 GHz - 3 GHz      SENSOR LOCATION: NMIT PORT  
 INPUT POWER: 120VAC/6CHz      TEMP: 74.3 f      HUM: 59 %      BAR: 29.83 "  
 TEST PERFORMED BY: GRANT METZGAR  
 TEST RESULTS: SPURIOS AND HARMONICS > 80 dB BELOW FUNDAMENTAL  
 TEST CONDITIONS: COPPER TABLE TOP ARRANGEMENT.  
 \* NOTE \* FUNDAMENTAL @ 157.1 dBuV, SPURIOUS AND HARMONICS MUST BE LOWER THAN  
 101

=====

WORLD COMPLIANCE CENTER      23 May 2000 12:31:10

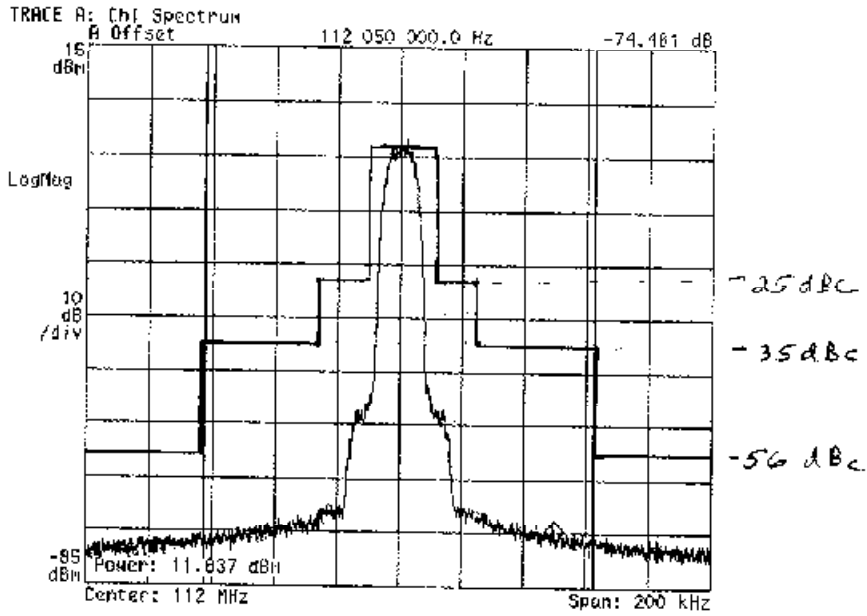
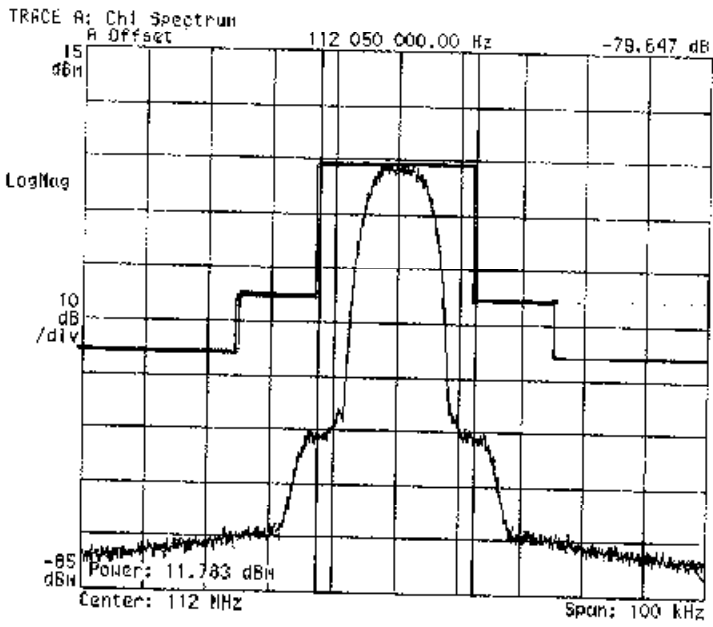
=====

HARRIS CORPORATION  
 LAAS TRANSMITTER  
 BERT @ 113 MHz, 130 WATTS  
 TEST NO. 5      1 GHz - 3 GHz

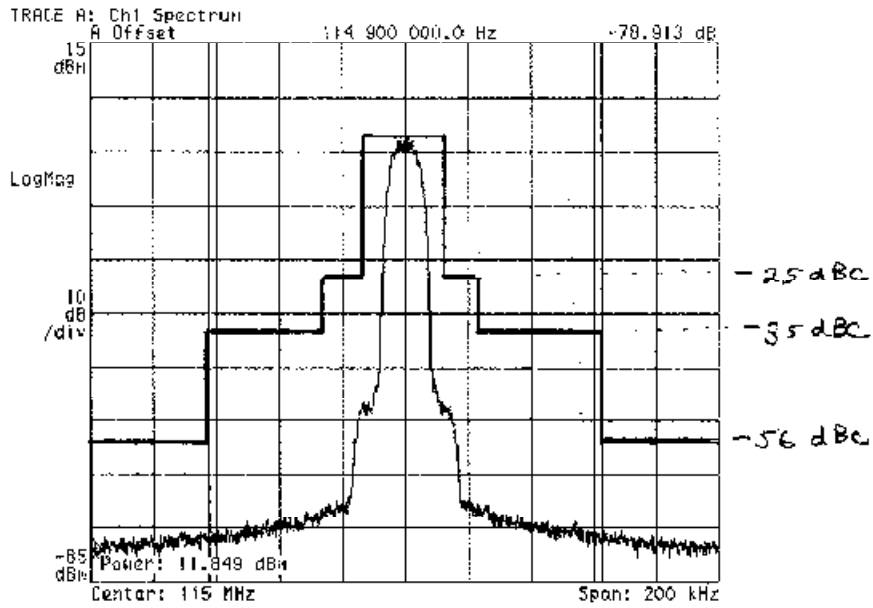
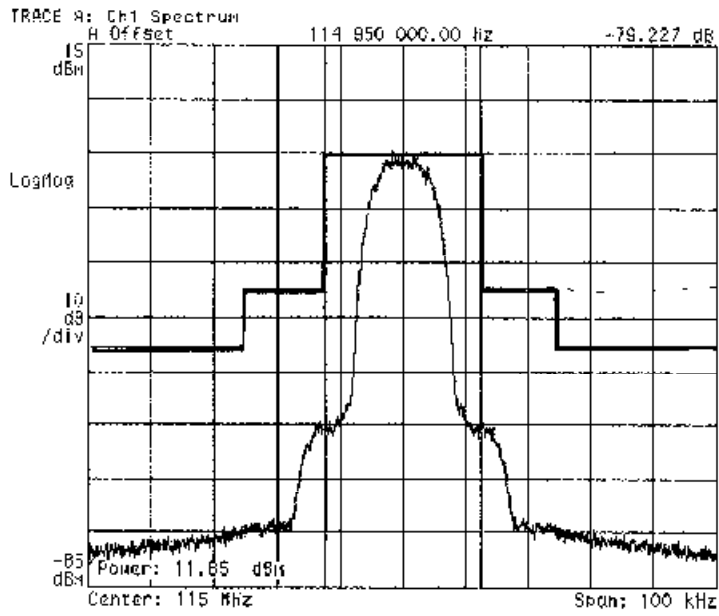
20 Highest Peaks above 50 dBuV  
 peak criteria = .1 dB

PEAK#	FREQ (MHz)	(dBuV)	DELTA
1	2816.8	69.2	32.2
2	1835.4	68.1	
3	2391.3	68	
4	1444.7	67.6	
5	1745.2	67.2	
6	1391.1	67	
7	1481.5	66.4	
8	1680.4	66	
9	2273.8	65.9	
10	1568.1	65.8	
11	1638.6	65.5	
12	1273.6	63.8	
13	1242	63.3	
14	1180.8	61.7	
15	1094.9	60.1	
16	1067.7	59.7	
17	1041.1	59.4	
18	1002.5	59.1	

Date: 10-11-00 Time: 12:45 PM



Date: 10-11-00 Time: 01:19 PM



Date: 10-11-00 Time: 01:50 PM

