Report Of Intermodulation Product Findings

San Diego, CA.

KMYI	**94.1 MHz.**
KYXY	**96.5 MHz.**
KSCF	**103.7 MHz.**
KIOZ	**105.3 MHz.**

March 30, 2007

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REPORT OF FINDINGS
KMYI~KYXY~KSCF~KIOZ
94.1 MHz.~96.5 MHz.~103.7 MHz.~105.3 MHz.

Introduction: This report of findings is based on data collected at the KMYI, KYXY, KSCF and KIOZ broadcast facility located in San Diego, California. The report includes measurements offered as proof that the combined operations of KMYI (94.1 MHz.), KSCF (103.7 MHz.) and KIOZ (105.3) transmitters are in compliance with the FCC Rules and Regulations as required by the Code of Federal Regulations (CFR) Title 47 section 73.317 paragraph (b) through (d). In brief, the collection of measurements presented in this report shows that all possible third order inter-modulation (IM) products generated by this multiplex system are less than the maximum allowable level as required by section 73.317 (b) through (d). Jeff Taylor of Electronics Research, Inc. located in Chandler, Indiana performed the measurements summarized herein on ……....

The following exhibits are provided:

Exhibit A:
- A-1 Drawing Depicting Antenna.
- A-2 SHPX-10AC6-HW-SP Antenna Specification Sheet.
- A-3 Drawing Depicting Multiplexing Scheme.
- A-4 ERI 973/970 Constant Impedance Combiner Specification Sheet.
- A-5 Theoretical Vertical Plane Relative Field Antenna Plots

Exhibit B:
- B-1 Equipment Employed In Intermodulation Product Measurement.
- B-2 Broadcasting Scheme of the Multiplexed Systems.

Table 1. Carrier Reference Levels.
Table 2. Calculated Third Order Products.
Table 3. Intermodulation Analysis Measurements.

Exhibits Accompanying Report: Exhibit A provides comprehensive information on both antenna and filters used by these radio stations. Exhibit B illustrates the broadcasting scheme of each station, the layout of the equipment used to isolate and measure potential intermodulation products and forward carrier reference levels. Found within Table 1 are the narrow band carrier frequency measurements that provide relative output signal levels for the IM analysis. Table 2 lists the calculated third order products that can be generated from FM transmitters broadcasting from the multiplexed system. The IM Analysis Measurements, in Table 3, provides detailed information obtained from the product frequency investigation.

The Nature of Intermodulation Products (IM): Intermodulation products result from inadequate transmitter-to-transmitter isolation. Intermodulation products are commonly generated from radio stations operating into multiplexed facilities and congested antenna broadcast sites. The mechanics associated with the phenomenon have been well documented. When two or more transmitters are coupled to each other, new spectral components are produced by the mixing of the station frequencies in the active circuits of each transmitter. The common term used to describe this phenomenon is third order product denoted by the mathematical expression $[2(F_1)-(F_2)]$, where F_1 signifies the frequency of the transmitter that is generating the intermodulation product, and F2 signifies the frequency causing the interference.

The Multiplexed System: These measurements were taken with three FM stations operating from the combined antenna system. The KMYI, KYXY,KSCF and KIOZ multiplexed system is fundamentally comprised of antenna, feed line and multiplexer unit. The SHPX-10AC6-HW-SP (antenna) and ERI 973/970 constant impedance combiner units are products of Electronics Research, Inc, whereas the feed line is manufactured by Myat. Refer to Exhibit B-1, for an illustration of the Broadcasting Scheme of these stations. **At this time KYXY 96.5 MHz. was unable to operate from the combined system. All emission measurements concerning KYXY will be completed at a later date.**

To accomplish the aggregation of three transmitter signals into a common antenna feed and provide transmitter-to-transmitter isolation, a multiplexing scheme consisting of a Constant Impedance Combiner was installed. Specifically, the Multiplexer utilizes two ERI Model CI970-8-GD, one ERI Model CI970-6, and one 973-6 constant impedance modules for each transmitter. An interconnecting U-link is required to complete the multiplexer which is illustrated in the attached Exhibit A-3. The multiplexer, fully assembled, exhibited transmitter port-to-port isolation in excess of -72 dB. Other performance measurements, such as match, loss, group-delay, etc, revealed that the multiplexer unit was in proper working condition. Refer to Exhibit A-4 for the Combiner Specification Sheet.

The IM Investigation: Directional Couplers were placed at key locations throughout the combiner to monitor and maintain the multiplexer's performance. All couplers furnished with the system are factory calibrated and capable of delivering accurate and repeatable RF measurements. To facilitate the taking of the measurements, the coupler located at the antenna output of the multiplexed system was used. Care was taken in the selection of the measurement location to insure that the measurements would be made far removed from transmitters and any filtering used to reduce broadcast emissions. The coupler selected would normally be used for antenna reflection measurements and thus would provide greater than -30 dB directivity and a forward signal sample of -45 dB.

The forward port of the coupler was used for sampling the outgoing carrier levels and IM products. The IM sampled signal was fed by shielded cable into a Band Pass Filter where all extraneous energy was steeply attenuated. Various attenuation pads were used, when needed, on the band pass filter and/or the FIM71 to ensure an adequate signal level for measurements without overloading the measurement equipment. A Potomac Instruments FIM-71 Field Strength Receiver Serial # 242 was employed to record the level of all signals investigated. To facilitate the selective tuning of the Receiver and Band Pass Filter a Wavetek Model 3000 Serial # 7512028 signal generator was used. A IFR Model 2399A Spectrum Analyzer Serial # 02113071 was used to measure the close in spectral attenuation of each carrier and wide band search for any anomalies that may need further investigation. See attached Exhibit B-1 for an illustration of the measurement equipment.

Prior to recording measurements, all pertinent broadcasting equipment including Transmitters, Multiplexer, Feed Line and Antenna were adjusted to optimal performance. Also, it was confirmed before taking any measurements that all stations of concern were operating at their full licensed power level. From the equipment setup described above, the relative output signal level of each stations forward carrier was made. The resulting signal levels of these measurements are listed in Table 1, column labeled "Adjusted Level". This level will be used as the reference level for possible IM products of each carrier and was necessary to confirm that no significant levels of spurious energy, referenced to each carrier, were present from any transmitter operating from the multiplexed system.

Table 1 - Carrier Reference Levels.

Carrier Frequency (MHz)	Pad One (dB)	Bandpass Filter Loss (dB)	Full Scale Range (dBµ)	Scale Reading (dB)	**Adjusted Level (dBµ)**	Notes
KMYI (94.1)		-	140	4.1	**135.9**	
KYXY (96.5)		-	120			
KSCF (103.7)		-	140	9.8	**130.2**	
KIOZ (105.3)		-	140	8.1	**131.9**	

Predictable third-order products due to system harmonics mixed with all on-site interfering frequencies that could be generated from the multiplexed system are calculated and listed in Table 2.

Table 2 - Third order Products.

	94.1	96.5	103.7	105.3
94.1	---	98.9	113.3	116.5
94.9	93.3	98.1	112.5	115.7
95.7	92.5	97.3	111.7	114.9
96.5	91.7	---	110.9	114.1
98.1	90.1	94.9	109.3	112.5
100.7	87.5	92.3	106.7	109.9
102.9	85.3	90.1	104.5	107.7
103.7	84.5	89.3	---	106.9
105.3	82.9	87.7	102.1	---

Using the equipment previously described the IM product measurements were recorded and are listed in Table 3. The signal levels referenced to the carriers are calculated and listed in the column labeled "Level Referenced to Carrier". Refer to Exhibit B-2 for a layout of the measurement equipment.

IM Measurements Taken in

Product Frequency (MHz)	Transmitter Frequency (MHz)	Interfering Frequency (MHz)	Pad (dB)	Bandpass Filter Loss (dB)	Total Loss	Full Scale Range (dBµ)	Scale Reading (dBµ)	Adjusted Level (dBµ)	Carrier Reference Level (dBµ)	Level Referenced to Carrier (dB)	Notes*
	Transmitter Mixes										
	94.1	**Ref.**	**0**		**0**	**140**	**4.1**		**135.9**		
	96.5	**Ref.**	**0**		**0**	**120**			**120**		Not operational at this time.
	103.7	**Ref.**	**0**		**0**	**140**	**9.8**		**130.2**		
	105.3	**Ref.**	**0**		**0**	**140**	**8.1**		**131.9**		
82.9	94.1	105.3	6	11.4	17.4	20	20	17.4	135.9	-118.5	
84.5	94.1	103.7	6	11.3	17.3	20	19	18.3	135.9	-117.6	
85.3	94.1	102.9	6	11	17	20	19.5	17.5	135.9	-118.4	
87.5	94.1	100.7	6	10.8	16.8	20	20	16.8	135.9	-119.1	
87.7	96.5	105.3	6		6			6		6	
89.3	96.5	103.7	6		6			6		6	
90.1	94.1	98.1	6	10	16	20	12.5	23.5	135.9	-112.4	
90.1	96.5	102.9	6					6		6	
91.7	94.1	96.5	6	10	16	20	6.4	29.6	135.9	-106.3	
92.3	96.5	100.7	6		6			6		6	
92.5	94.1	95.7	6	9.9	15.9	20	1.7	34.2	135.9	-101.7	
93.3	94.1	94.9	6	10	16	20	1.3	34.7	135.9	-101.2	
94.9	96.5	98.1	6		6			6		6	
97.3	96.5	95.7	6		6			6		6	
98.1	96.5	94.9	6		6			6		6	
98.9	96.5	94.1	6		6			6		6	
102.1	103.7	105.3	6	**10.2**	16.2	**40**	**13.8**	42.4	**130.2**	-87.8	
104.5	103.7	102.9	6	**10.2**	16.2	**20**	**3.6**	32.6	**130.2**	-97.6	
106.7	103.7	100.7	6	**10.2**	16.2	**20**	**2.6**	33.6	**130.2**	-96.6	
106.9	105.3	103.7	6	**10.2**	16.2	**20**	**2.2**	34	**131.9**	-97.9	
107.7	105.3	102.9	6	**10.2**	16.2	**20**	**9.9**	26.3	**131.9**	-105.6	
109.3	103.7	98.1	6	**10.4**	16.4	**20**	**17.9**	18.5	**130.2**	-111.7	

109.9	105.3	100.7	6	**10.5**	16.5	**20**	**20**	16.5	**131.9**	-115.4
110.9	103.7	96.5	6	**10.1**	16.1	**20**	**17.2**	18.9	**130.2**	-111.3
111.7	103.7	95.7	6	**10.1**	16.1	**20**	**20**	16.1	**130.2**	-114.1
112.5	103.7	94.9	6	**10.2**	16.2	**20**	**18.6**	17.6	**130.2**	-112.6
112.5	105.3	98.1	6	**10.2**	16.2	**20**	**18.6**	17.6	**131.9**	-114.3
113.3	103.7	94.1	6	**9.9**	15.9	**20**	**20**	15.9	**130.2**	-114.3
114.1	105.3	96.5	6	**9.8**	15.8	**20**	**20**	15.8	**131.9**	-116.1
114.9	105.3	95.7	6	**9.9**	15.9	**20**	**20**	15.9	**131.9**	-116
115.7	105.3	94.9	6	**10.1**	16.1	**20**	**20**	16.1	**131.9**	-115.8
116.5	105.3	94.1	6	**9.8**	15.8	**20**	**20**	15.8	**131.9**	-116.1

The Spectrum Analyzer was used to check the close in spectral attenuation of the carrier to confirm the operation of the transmitter is in compliance with Sections (b) and (c) of the FCC Rules and Regulations.

As a final proof of the systems IM Product performance, a wide band search was undertaken using the Spectrum Analyzer. The purpose for this measurement was to look for suspicious anomalies that may warrant further investigation. My search ranged the complete frequency span of the receiver and resulted in no additional investigations.

Please note that on the combiner drawing there is a 96.5 MHz.(KYXY) combiner module incorporated into the multiplexed system. This station is not operational from the multiplexed site at this time.

Conclusion: Based upon my observations and measurements taken on March 30, 2006 as summarized in this document, I, Jeff Taylor, find the subject system-specifically the transmitter and filter system for the operation of KMYI, KYXY, KSCF and KIOZ into the antenna to be in proper working order. Furthermore, based on the measured data, it is my opinion that there are no inter-modulation products in excess of 80 dB below carrier levels generated from or within the station operating on the installed system. Based on this recorded data, I conclude that KMYI, KYXY, KSCF and KIOZ is in compliance with the requirements of Section 73.317 paragraph (b) through (d) of the FCC Rules and Regulations.

Respectfully submitted,
Electronics Research, Inc.

Jeff Taylor, Field Technician

State of Indiana)

) SS:

County of Warrick)

AFFIDAVIT

I, Jeff Taylor, hereby declare that the following statements are true and correct to the best of my knowledge and belief :

1.) I am a Field Technician for Electronics Research, Inc ("ERI ") and have been employed by ERI for ten years. I am familiar with and have assisted in the design, manufacturing and installation of FM Antennas and FM Multiplexers in my long tenure with ERI.

2.) I have either prepared and/or directly supervised the preparation of all technical information contained in this Report Of Findings and to my knowledge to be accurate and true.

3.) ERI has been requested by Clear Channel, on behalf of radio Stations KMYI, KYXY, KSCF and KIOZ to prepare this Report of Findings.

Jeff Taylor; Field Technician

Jeff Taylor

Subscribed and sworn to before me on this 30th, day of March 2007.

Jacquelyn Kinney; Notary Public
My commission expires July 5, 2007

Jacquelyn S. Kinney

NOTARY PUBLIC S·E·A·L

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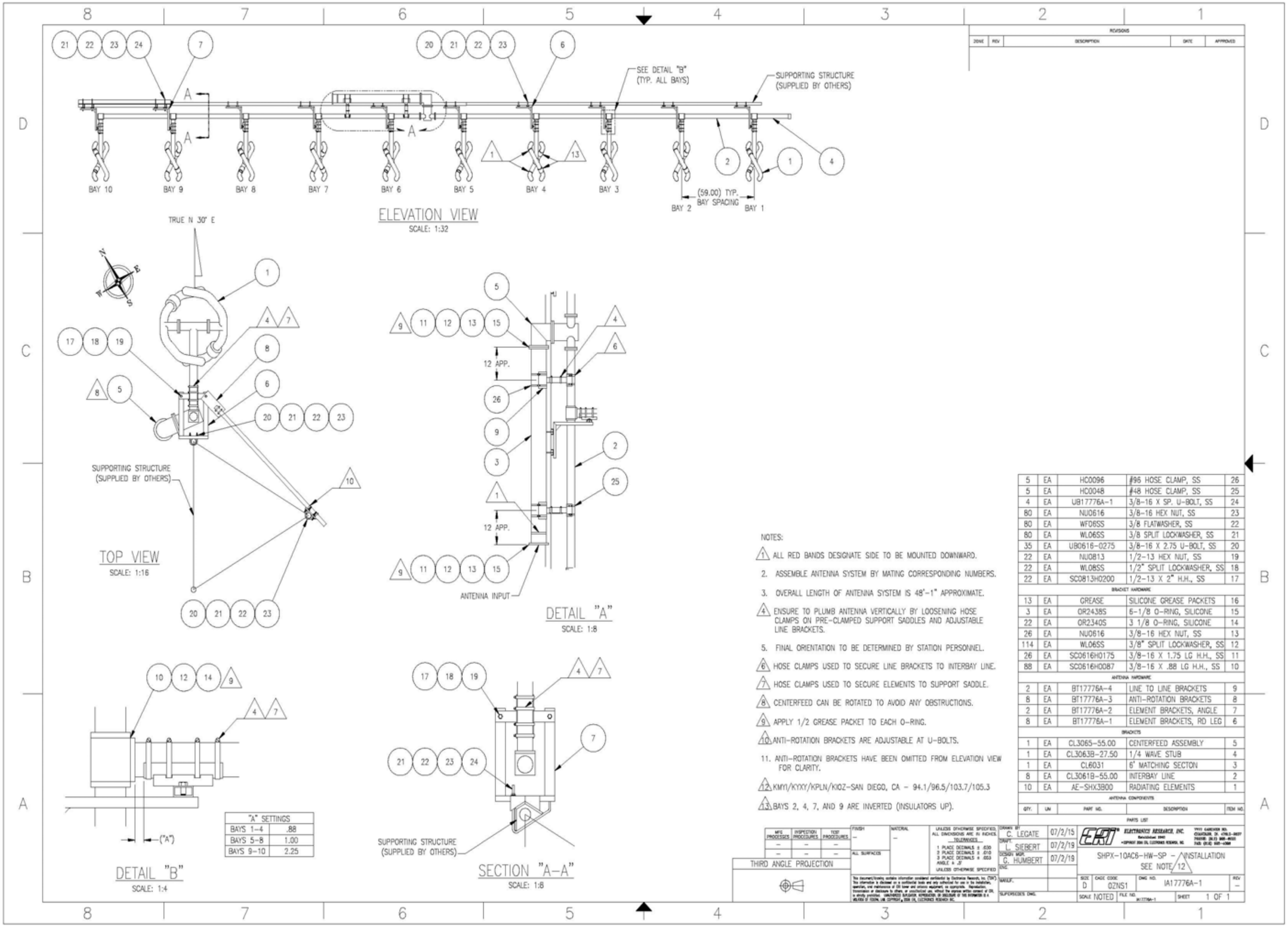

ELEVATION VIEW
SCALE: 1:32
BAY 10
BAY 9
BAY 8
BAY 7
BAY 6
BAY 5
BAY 4
BAY 3
BAY 2
BAY 1
(59.00) TYP.
BAY SPACING
SEE DETAIL "B"
(TYP. ALL BAYS)
SUPPORTING STRUCTURE
(SUPPLIED BY OTHERS)
TRUE N 30° E
TOP VIEW
SCALE: 1:16
SUPPORTING STRUCTURE
(SUPPLIED BY OTHERS)
12 APP.
12 APP.
ANTENNA INPUT
DETAIL "A"
SCALE: 1:8
DETAIL "B"
SCALE: 1:4
"A" SETTINGS
BAYS 1–4 .88
BAYS 5–8 1.00
BAYS 9–10 2.25
("A")
SUPPORTING STRUCTURE
(SUPPLIED BY OTHERS)
SECTION "A–A"
SCALE: 1:8
NOTES:
1 ALL RED BANDS DESIGNATE SIDE TO BE MOUNTED DOWNWARD.
2. ASSEMBLE ANTENNA SYSTEM BY MATING CORRESPONDING NUMBERS.
3. OVERALL LENGTH OF ANTENNA SYSTEM IS 48'-1" APPROXIMATE.
4 ENSURE TO PLUMB ANTENNA VERTICALLY BY LOOSENING HOSE CLAMPS ON PRE-CLAMPED SUPPORT SADDLES AND ADJUSTABLE LINE BRACKETS.
5. FINAL ORIENTATION TO BE DETERMINED BY STATION PERSONNEL.
6 HOSE CLAMPS USED TO SECURE LINE BRACKETS TO INTERBAY LINE.
7 HOSE CLAMPS USED TO SECURE ELEMENTS TO SUPPORT SADDLE.
8 CENTERFEED CAN BE ROTATED TO AVOID ANY OBSTRUCTIONS.
9 APPLY 1/2 GREASE PACKET TO EACH O-RING.
10 ANTI-ROTATION BRACKETS ARE ADJUSTABLE AT U-BOLTS.
11. ANTI-ROTATION BRACKETS HAVE BEEN OMITTED FROM ELEVATION VIEW FOR CLARITY.
12 KMYI/KYXY/KPLN/KIOZ-SAN DIEGO, CA – 94.1/96.5/103.7/105.3
13 BAYS 2, 4, 7, AND 9 ARE INVERTED (INSULATORS UP).
5 EA HC0096 #96 HOSE CLAMP, SS 26
5 EA HC0048 #48 HOSE CLAMP, SS 25
4 EA UB17776A-1 3/8-16 X SP. U-BOLT, SS 24
80 EA NU0616 3/8-16 HEX NUT, SS 23
80 EA WF06SS 3/8 FLATWASHER, SS 22
80 EA WL06SS 3/8 SPLIT LOCKWASHER, SS 21
35 EA UB0616-0275 3/8-16 X 2.75 U-BOLT, SS 20
22 EA NU0813 1/2-13 HEX NUT, SS 19
22 EA WL08SS 1/2" SPLIT LOCKWASHER, SS 18
22 EA SC0813H0200 1/2-13 X 2" H.H., SS 17
BRACKET HARDWARE
13 EA GREASE SILICONE GREASE PACKETS 16
3 EA OR2438S 6-1/8 O-RING, SILICONE 15
22 EA OR2340S 3 1/8 O-RING, SILICONE 14
26 EA NU0616 3/8-16 HEX NUT, SS 13
114 EA WL06SS 3/8" SPLIT LOCKWASHER, SS 12
26 EA SC0616H0175 3/8-16 X 1.75 LG H.H., SS 11
88 EA SC0616H0087 3/8-16 X .88 LG H.H., SS 10
ANTENNA HARDWARE
2 EA BT17776A-4 LINE TO LINE BRACKETS 9
8 EA BT17776A-3 ANTI-ROTATION BRACKETS 8
2 EA BT17776A-2 ELEMENT BRACKETS, ANGLE 7
8 EA BT17776A-1 ELEMENT BRACKETS, RD LEG 6
BRACKETS
1 EA CL3065-55.00 CENTERFEED ASSEMBLY 5
1 EA CL3063B-27.50 1/4 WAVE STUB 4
1 EA CL6031 6' MATCHING SECTON 3
8 EA CL3061B-55.00 INTERBAY LINE 2
10 EA AE-SHX3800 RADIATING ELEMENTS 1
ANTENNA COMPONENTS
QTY. UM PART NO. DESCRIPTION ITEM NO.
PARTS LIST
THIRD ANGLE PROJECTION
C. LEGATE 07/2/15
L. SIEBERT 07/2/19
G. HUMBERT 07/2/19
ELECTRONICS RESEARCH, INC.
SHPX-10AC6-HW-SP – INSTALLATION
SEE NOTE 12
D 0ZNS1 IA17776A-1
SCALE NOTED
SHEET 1 OF 1

ELECTRONICS RESEARCH, INC. ERI

A-2 ERI Antenna Specification Sheet

San Diego, California

General Specifications

Antenna Type . . . . . .High Power FM-Broadcast, Suitable For Multiplexing
Model Number SHPX-10AC6-HW-SP
Number of Bay Levels .....Ten
Polarization..... Right Hand Circular

Electrical Specifications

Antenna Input Power Capability . . . . . 65 KW Max (1)
Operating Frequency Band..... 94.1 ~ 105.3 Megahertz.
VSWR. . . . . <1.15:1 @ Operating Frequencies(2)
Azimuthal Pattern Circularity ..... Better Then +/- 2dB From RMS (Free Space)
Power Split ..... 50/50 (Horizontal & Vertical)
Frequency Specific Information:

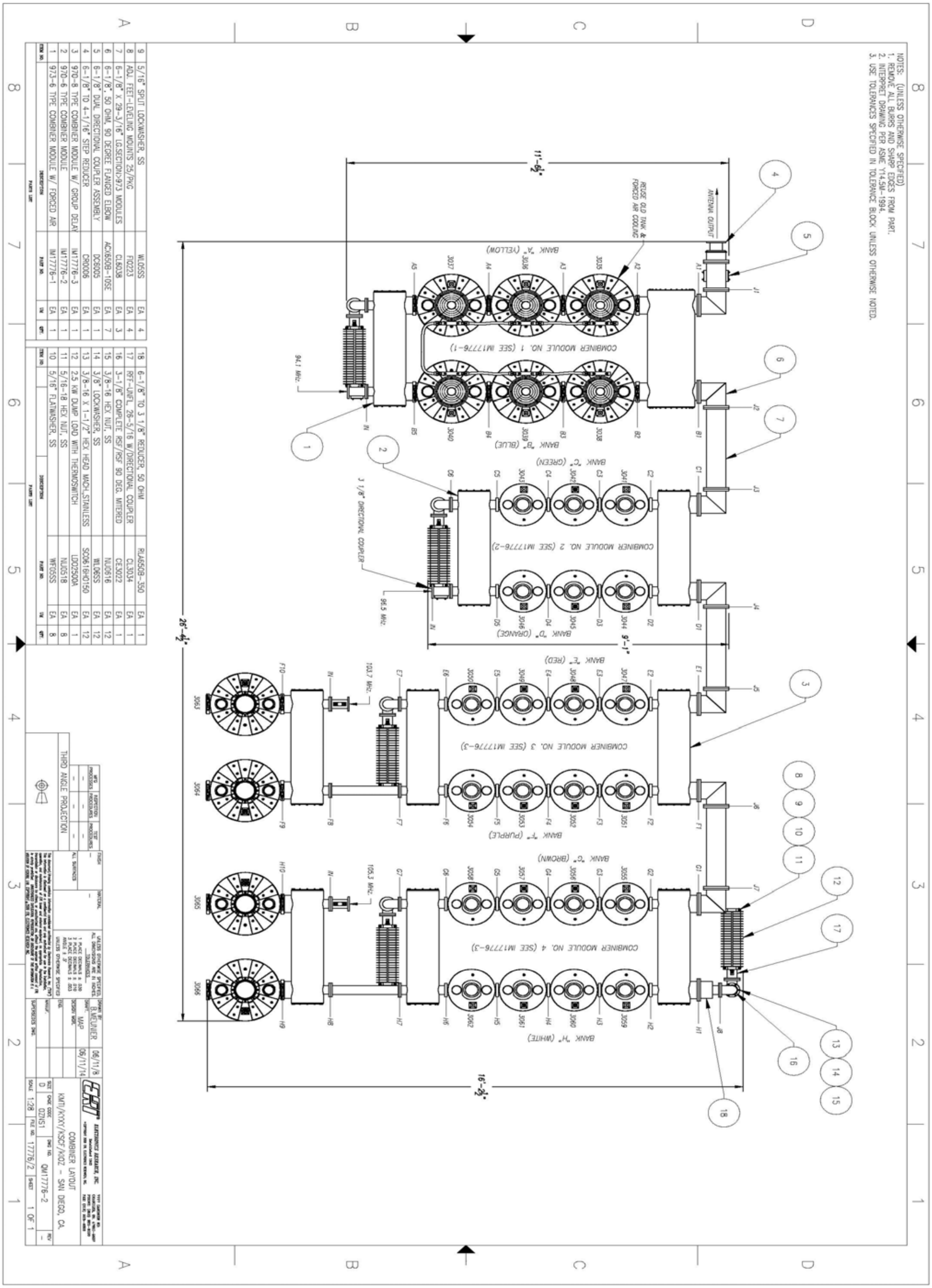
Frequency	Station ERP	Beam Tilt	First Null Fill	Second Null Fill	Power Gain	Line Loss (3)	Filter Loss (4)	Computed TPO
94.1	**77 KW**	**0°**	**17 %**	**1%**	**2.793**	**.1831 db**	**.1963 db**	**30.08 KW**
96.5	**26 KW**	**0°**	**10 %**	**0%**	**2.976**	**.1854 db**	**.3234 db**	**9.82 KW**
103.7	**26 KW**	**0°**	**13 %**	**0%**	**3.146**	**.1923 db**	**.6228 db**	**9.97 KW**
105.3	**26 KW**	**0°**	**18 %**	**1%**	**3.098**	**.1938 db**	**.6437 db**	**10.17 KW**

Mechanical Specifications

Antenna Feed System..... Fed With One 6 1/8” Line
Input Connector …… . 6 1/8”-50 Ohm EIA Flanged
Element Deicing..... None
Interbay Spacing..... 59” Center to Center
Array Length ..... 48’
Construction Material (Antenna) ..... All Noncorrosive
Construction Material (Mounting) ..... All Stainless Steel

.

1) Power Capability Has Been Rated Assuming an Operating Transmission VSWR of 1.5:1
2) VSWR Specification Achieved After On Site Tuning For User Specific Frequencies.
3) Line Loss Assumes A Feed Run of 256.07 Feet, 4 1/16" Myat Rigid.
4) Losses Taken From Actual Combiner.


NOTES: (UNLESS OTHERWISE SPECIFIED)
1. REMOVE ALL BURRS AND SHARP EDGES FROM PART.
2. INTERPRET DRAWING PER ASME Y14.5M-1994.
3. USE TOLERANCES SPECIFIED IN TOLERANCE BLOCK UNLESS OTHERWISE NOTED.
ANTENNA OUTPUT
REUSE OLD TANK & FORCED AIR COOLING
COMBINER MODULE NO. 1 (SEE IM17776-1)
COMBINER MODULE NO. 2 (SEE IM17776-2)
COMBINER MODULE NO. 3 (SEE IM17776-3)
COMBINER MODULE NO. 4 (SEE IM17776-3)
3 1/8" DIRECTIONAL COUPLER
THIRD ANGLE PROJECTION
COMBINER LAYOUT
KMTJ/KXXY/KSCF/KDZ - SAN DIEGO, CA.

EXHIBIT, A - 3

A-4 ERI Combiner Specification Sheet

San Diego, California

General Specifications:

Multiplexer Type ..... Constant Impedence "Series 973/970"
Number of Combining Units .....Four
Injected Port to Injected Port Isolation..... < - 72 dB
Output Connector .....6 1/8 "50 Ohm EIA (Flanged)
Output Power (Designed) .....65 KW(1)

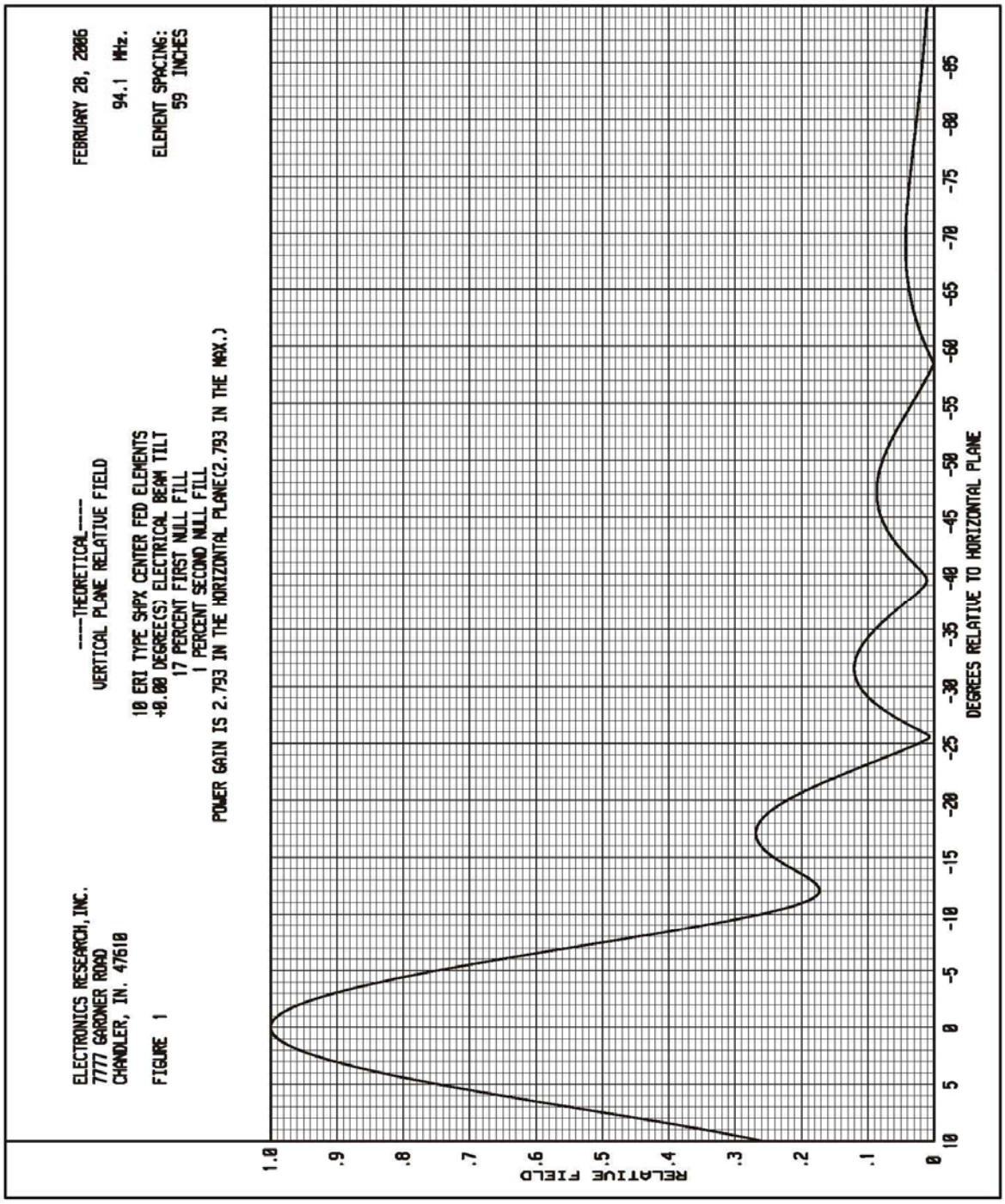
Heat Removal 96.5 MHz, 103.7 MHz., 105.3 MHz. .....Natural Convection
Heat Removal 94.1 MHz. ..... Forced Air
Physical Arrangement.....All Components floor standing

Injected Port Specifications:

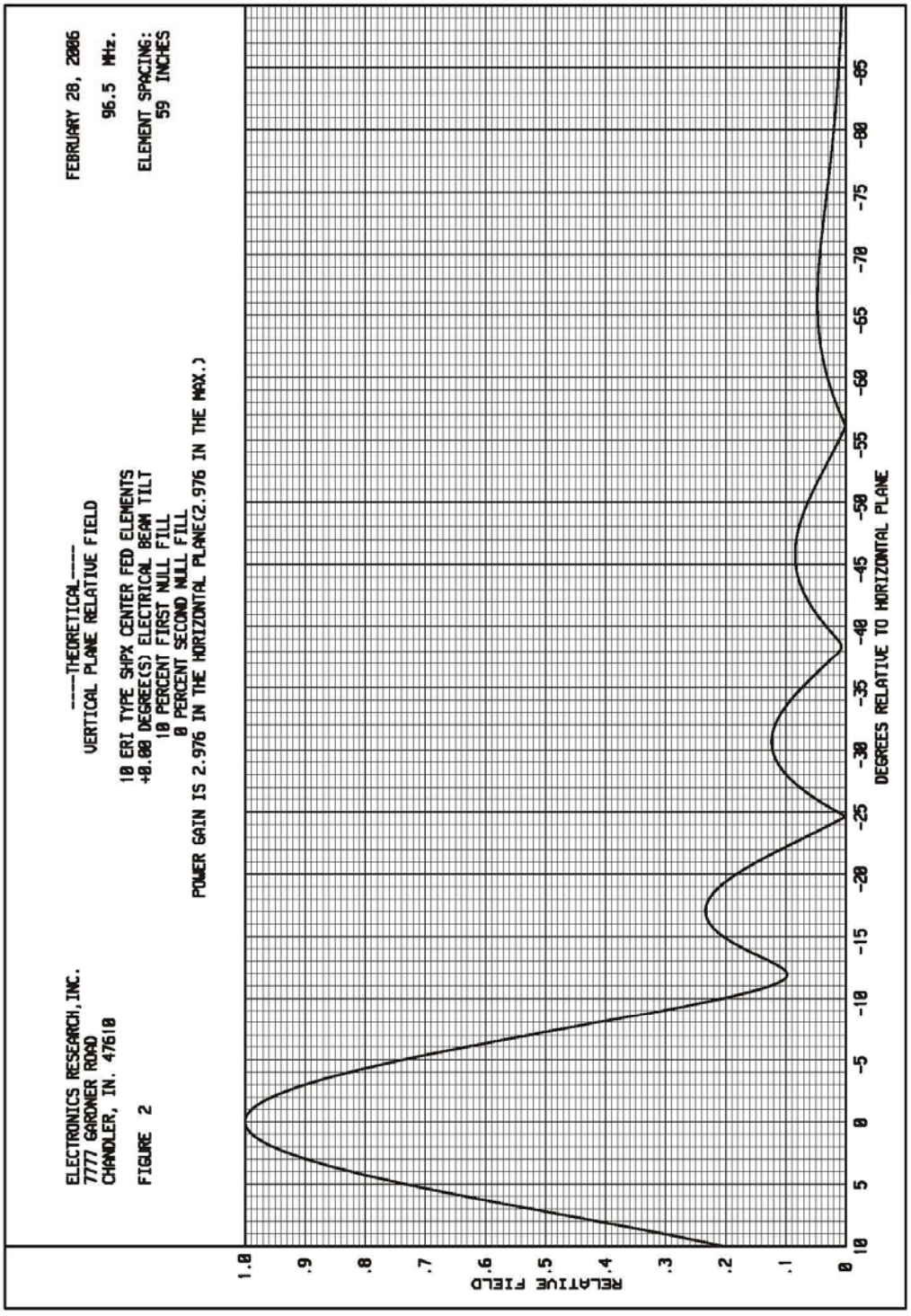
Frequency Assignment ..... 94.1, 96.5, 103.7, and 105.3 MHz.
Power Rating, Each Injected Port ..... 11 KW for 96.5, 103.7, 105.3 ~ 30 KW 94.1 MHz.
Input Connector ..... 3-1/8" 50 Ohm EIA (Flanged)
VSWR.....< 1.07:1 @ +/-150 KHz.(2
Group Delay..... Less than 110 ns Overall Variation, Carrier @ +/- 150 KHz.
Insertion Loss (Measured):

94.1 MHz..... - 0.1963 dB
96.5 MHz..... - 0.3234 dB
103.7 MHz..... - 0.6228 dB
105.3 MHz..... - 0.6437 dB

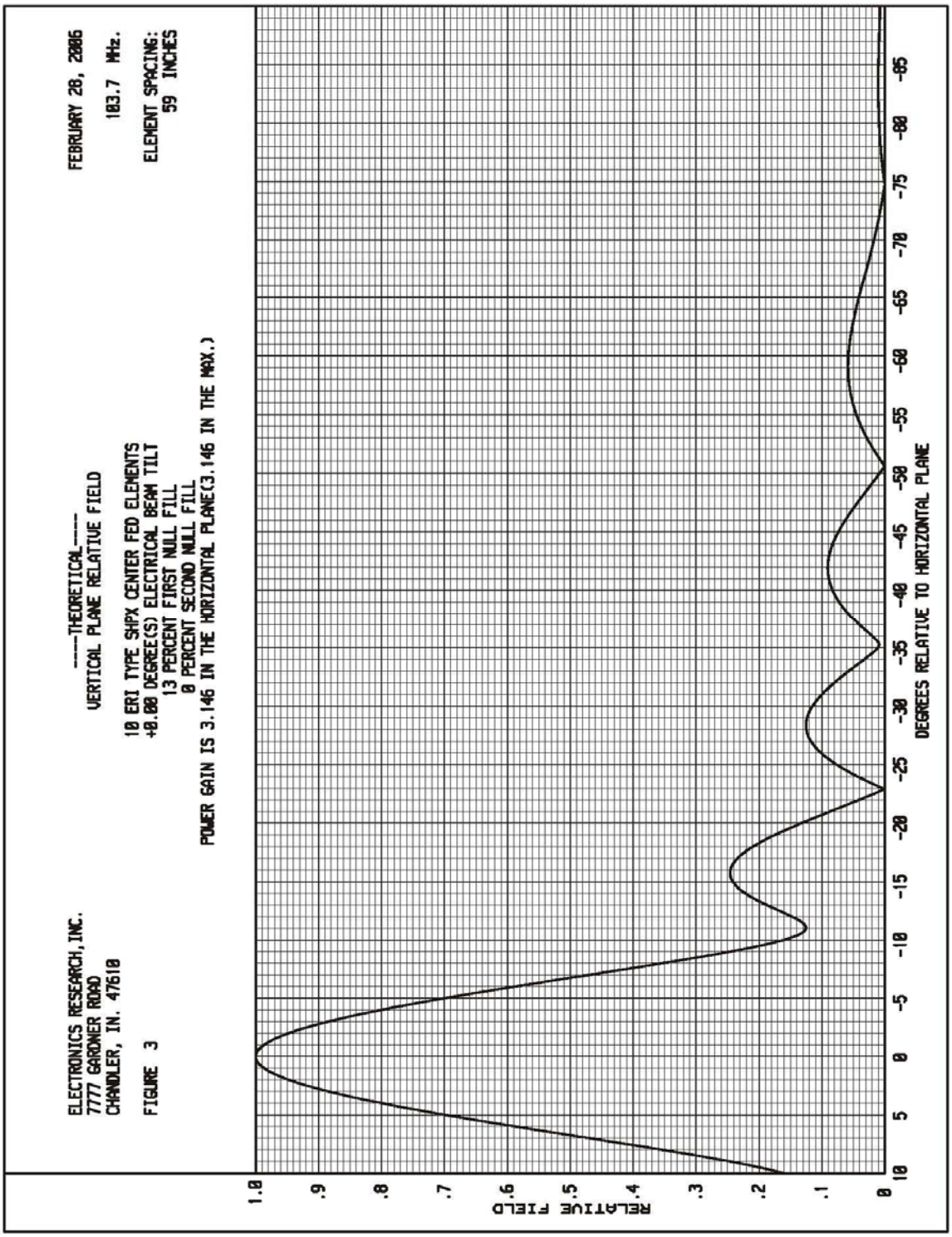
1) Power Rating Listed is as Designed Only. Actual Power Capabilities May Vary.
2) When Terminated in 50 Ohm Resistive Load.


ELECTRONICS RESEARCH, INC.
7777 GARDNER ROAD
CHANDLER, IN. 47610
FIGURE 1
---THEORETICAL---
VERTICAL PLANE RELATIVE FIELD
10 ERI TYPE SHPX CENTER FED ELEMENTS
+0.00 DEGREE(S) ELECTRICAL BEAM TILT
17 PERCENT FIRST NULL FILL
1 PERCENT SECOND NULL FILL
POWER GAIN IS 2.793 IN THE HORIZONTAL PLANE(2.793 IN THE MAX.)
FEBRUARY 28, 2006
94.1 MHz.
ELEMENT SPACING:
59 INCHES
RELATIVE FIELD
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
0
10 5 0 -5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55 -60 -65 -70 -75 -80 -85
DEGREES RELATIVE TO HORIZONTAL PLANE

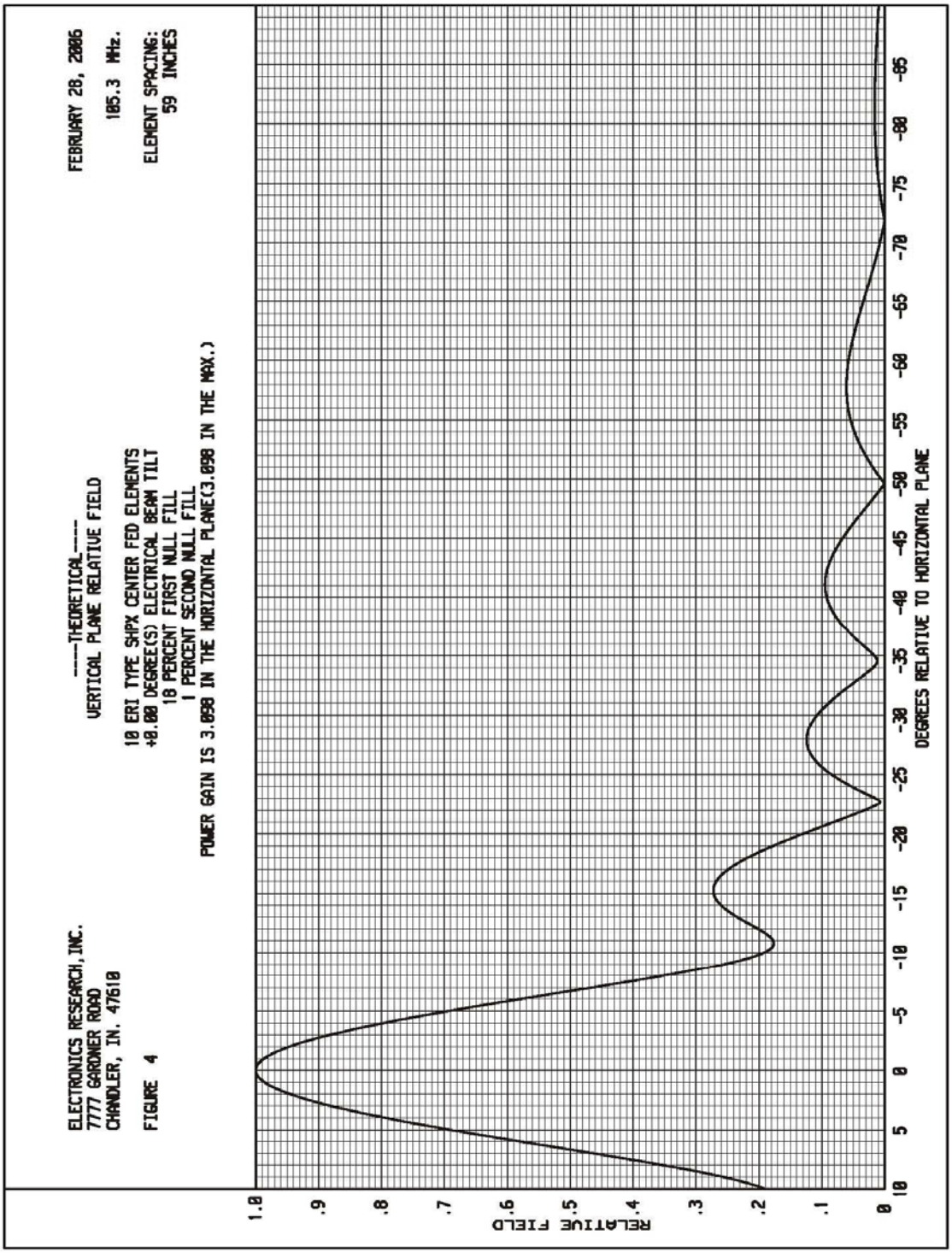
EXHIBIT, A - 5


ELECTRONICS RESEARCH,INC.
7777 GARDNER ROAD
CHANDLER, IN. 47610
FIGURE 2
----THEORETICAL----
VERTICAL PLANE RELATIVE FIELD
10 ERI TYPE SHPX CENTER FED ELEMENTS
+0.00 DEGREE(S) ELECTRICAL BEAM TILT
10 PERCENT FIRST NULL FILL
0 PERCENT SECOND NULL FILL
POWER GAIN IS 2.976 IN THE HORIZONTAL PLANE(2.976 IN THE MAX.)
FEBRUARY 28, 2006
96.5 MHz.
ELEMENT SPACING:
59 INCHES
RELATIVE FIELD
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
0
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
DEGREES RELATIVE TO HORIZONTAL PLANE

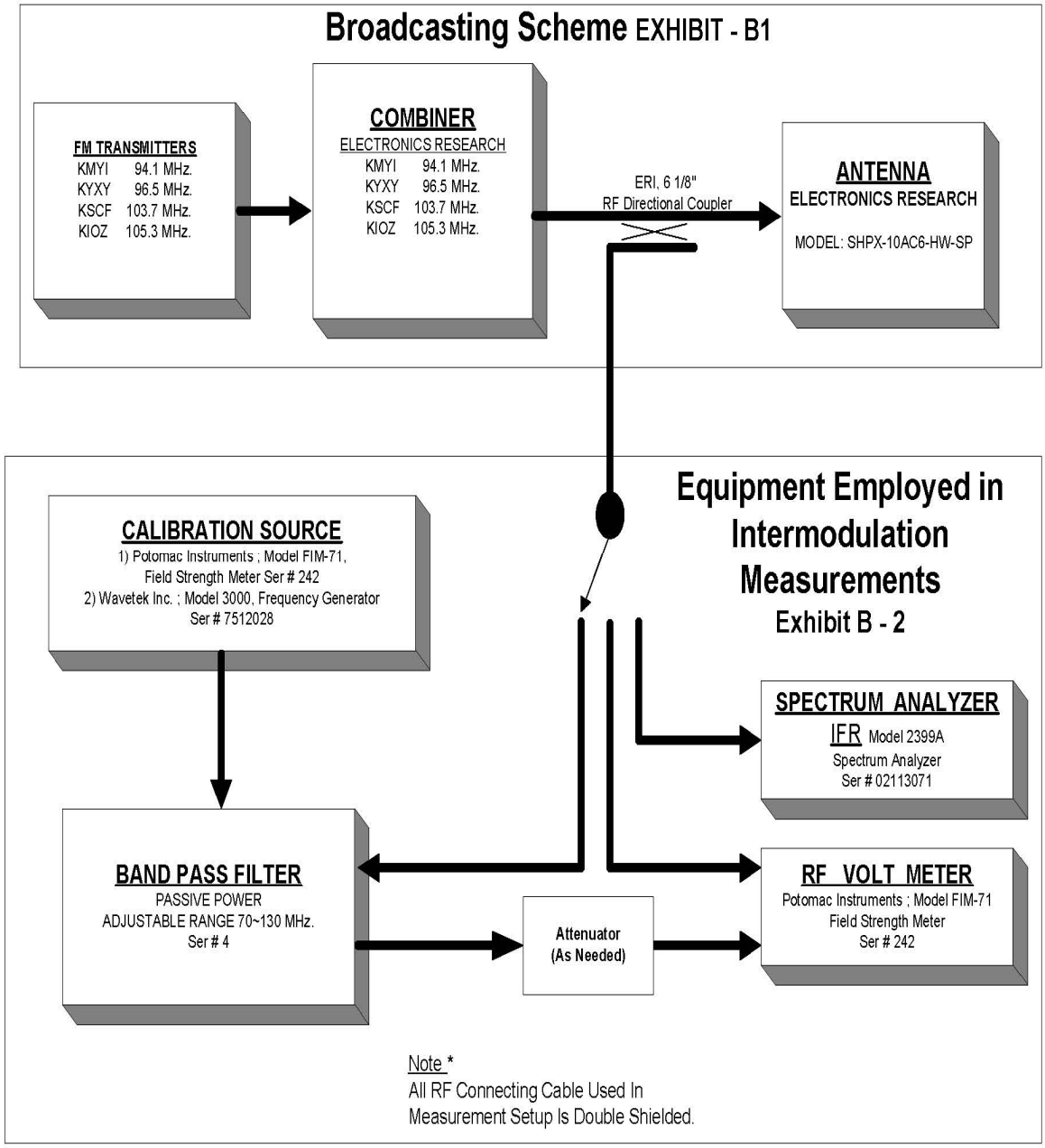
EXHIBIT, A - 5


ELECTRONICS RESEARCH, INC.
7777 GARDNER ROAD
CHANDLER, IN. 47610
FIGURE 3
----THEORETICAL----
VERTICAL PLANE RELATIVE FIELD
10 ERI TYPE SHPX CENTER FED ELEMENTS
+0.00 DEGREE(S) ELECTRICAL BEAM TILT
13 PERCENT FIRST NULL FILL
0 PERCENT SECOND NULL FILL
POWER GAIN IS 3.146 IN THE HORIZONTAL PLANE(3.146 IN THE MAX.)
FEBRUARY 28, 2006
183.7 MHz.
ELEMENT SPACING:
59 INCHES
RELATIVE FIELD
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
0
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
DEGREES RELATIVE TO HORIZONTAL PLANE

EXHIBIT, A - 5


ELECTRONICS RESEARCH, INC.
7777 GARDNER ROAD
CHANDLER, IN. 47610
FIGURE 4
----THEORETICAL----
VERTICAL PLANE RELATIVE FIELD
10 ERI TYPE SHPX CENTER FED ELEMENTS
+0.00 DEGREE(S) ELECTRICAL BEAM TILT
10 PERCENT FIRST NULL FILL
1 PERCENT SECOND NULL FILL
POWER GAIN IS 3.090 IN THE HORIZONTAL PLANE(3.090 IN THE MAX.)
FEBRUARY 28, 2006
105.3 MHz.
ELEMENT SPACING:
59 INCHES
RELATIVE FIELD
1.0
.9
.8
.7
.6
.5
.4
.3
.2
.1
0
10 5 0 -5 -10 -15 -20 -25 -30 -35 -40 -45 -50 -55 -60 -65 -70 -75 -80 -85
DEGREES RELATIVE TO HORIZONTAL PLANE

EXHIBIT, A - 5



Broadcasting Scheme and Equipment Employed in Intermodulation Measurements

EXHIBIT B