

ENGINEERING STATEMENT RE  
APPLICATION FOR LICENSE TO COVER THE  
OUTSTANDING CONSTRUCTION PERMIT  
FCC FILE NO. BPH-20050816AAL  
**KWJZ(FM), SEATTLE, WASHINGTON**  
CHANNEL 255C 58 KW ERP 698 METERS HAAT  
FACILITY ID #57843

JULY 2006

COHEN, DIPPELL AND EVERIST, P.C.  
CONSULTING ENGINEERS  
RADIO AND TELEVISION  
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.

City of Washington            )  
  ) ss  
District of Columbia         )

Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

That his qualifications are a matter of record in the Federal Communications Commission;

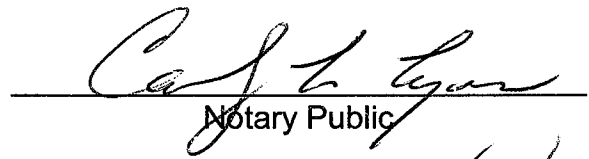
That the attached engineering report was prepared by him or under his supervision and direction and

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.

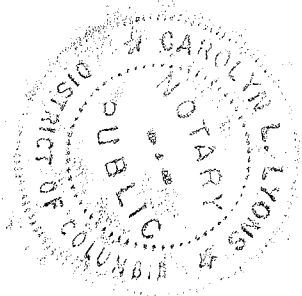


Donald G. Everist  
District of Columbia  
Professional Engineer  
Registration No. 5714

Subscribed and sworn to before me this 11<sup>th</sup> day of July, 2006.

  
Notary Public

My Commission Expires: 2/28/2008



### Introduction

This engineering report has been prepared on behalf of Orca Radio, Inc. in support of an application for license to cover the outstanding construction permit (FCC File No. BPH-20050816AAL). The outstanding construction permit authorizes technical changes in broadcast facilities of FM station KWJZ(FM), licensed to Seattle, Washington.

This outstanding construction permit authorizes changes in the effective radiated power ("ERP"), height of the antenna radiation center, the location of the transmitter site and operate from a master antenna. This application has been submitted within the 10 days after actual operation commenced. Request for program test proceeded the date of the actual commencement of operation. An unanticipated delay in implementing completion of all construction resulted in the operation commencing on July 1, 2006.

### Transmitter Site

The geographic coordinates (NAD-27) of the existing site are as follows:

North Latitude: 47° 30' 17.3"  
West Longitude: 121° 58' 03.4"

Tower Registration No. 1056093

The location is described from the tower registration as 10812 279<sup>th</sup> Avenue Southeast (West Tiger Mountain).

### Power Data

Transmitter output power	19.25 kW	12.843 dB
Combiner and filter loss		0.236 dB

Transmission line loss --(Myat 6-1/8" rigid dual run) 90.5 meters (297 feet)		0.157 dB
Master antenna		
Type, ERI, Type 1084-8CP	3.299	5.184 dB
	Max. Horiz. 3.10	4.914 dB
Maximum Effective Radiated Power (H&V)	58 kW	17.634 dB

#### Elevation Data

Elevation of the site above mean sea level:	865.3 meters (2838.9 feet)
Elevation of the top of supporting structure: above ground	94.5 meters (310 feet)
Elevation of the top of supporting structure: above mean sea level	959.8 meters (3149 feet)
Height of antenna radiation center: meters above ground	66.7 meters (218.8 feet)
Height of antenna radiation center: above mean sea level	932 meters (3057.7 feet)
Height of antenna radiation center: above average terrain	698 meters

#### Response to Special Operating Conditions

1. The licensee will, in coordination with other users of the site, reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.
2. As attached as Exhibit E-1, sufficient measurements have been made by Electronics Research, Inc. to establish that the operation authorized in this construction permit is in compliance with the spurious emissions requirements of 47 C.F.R. Sections 73.317(b) through 73.317(d). All measurements were made with all stations simultaneously utilizing the shared antenna. These measurements are hereby submitted to the Commission with this application for license.

4. KWJZ(FM) is requesting a license to operate from the antenna specified in the outstanding construction permit. Therefore, no other submission is required.
5. Warning signs which describe the radiofrequency electromagnetic field hazard are posted at appropriate intervals. KWJZ(FM) indicates that access to the site is approximately 5 miles from a main road. The road is not regularly traveled as the only purpose the access road serves is to provide access to transmitter site.

It is noted that the values shown in the ERI report, page 10 the column entitled, "Computed TPO", should reflect 19.25 kW in lieu of 22.5 kW. The footnote in the ERI report, page 7 provides the clarification regarding the KWJZ(FM) power level.

EXHIBIT E-1

ERI INTERMOD REPORT

# **Report Of Intermodulation Product Findings**

## **WEST TIGER #2**

<b>KQMV</b>	<b>92.5 MHz.</b>
<b>KMPS</b>	<b>94.1 MHz.</b>
<b>KJAQ</b>	<b>96.5 MHz.</b>
<b>KWJZ</b>	<b>98.9 MHz.</b>
<b>KZOK</b>	<b>102.5 MHz.</b>
<b>KBKS</b>	<b>106.1 MHz.</b>

*June 30, 2006*

**Electronics Research Inc.  
7777 Gardner Road  
Chandler, Indiana 47610  
Phone (812) 925-6000 Fax (812) 925- 4030**

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**Seattle, Washington**

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## **Exhibits Accompanying This Report**

Page 10.....	ERI Antenna Specification Sheet
Page 11.....	Drawing Depicting Combiner Module
Page 12.....	ERI Combiner Specification Sheet
Page 13 B-1.....	Intermodulation Product Measurement Equipment Layout
Page 13 B-2.....	Broadcasting Scheme of the Multiplexed System



## REPORT OF FINDINGS

### ENTERCOM BROADCAST FACILITY

**Introduction:** This report of findings is based on data collected at the American Tower broadcast facility. The report includes measurements offered as proof that the combined operations of KQMV (92.5 MHz.), KMPS (94.1MHz.), KJAQ (96.5 MHz.), KWJZ (98.9 MHz.), KZOK (102.5 MHz.), and KBKS (106.1 MHz.) 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 and Jon Adams of Electronics Research, Inc. located in Chandler, Indiana performed the measurements summarized herein on June 22, 2006.

**The following exhibits are provided:**

Exhibit A:

- A-1 Drawing Depicting Antenna.
- A-2 1084-8CP Antenna Specification Sheet.
- A-3 Drawing Depicting Multiplexing Scheme.
- A-4 963 Series Constant Impedance Combiner Specification Sheet.

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  $F_2$  signifies the frequency causing the interference.

**The Multiplexed System:** These measurements were taken with all seven FM stations operating from the combined antenna system. The multiplexed system is fundamentally comprised of antenna, feed line and multiplexer unit. The 1084-8CP (Cogwheel antenna) and Constant Impedance combiner units are products of Electronics Research, Inc, whereas the 6 1/8" rigid line is manufactured by Myat. Refer to Exhibit B-1, for an illustration of the Broadcasting Scheme of these stations.

To accomplish the aggregation of multiple 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 combiner utilizes ERI Model 963 series filter modules for each transmitter. The multiplexer, fully assembled, exhibited transmitter port-to-port isolation in excess of -60 dB. Other performance measurements, such as match, loss, group-delay, etc, revealed that the multiplexer unit was in proper working condition. Refer to page 13 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. An 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.**

<b>Carrier Frequency (MHz)</b>	<b>Pad One (dB)</b>	<b>Bandpass Filter Loss (dB)</b>	<b>Full Scale Range (dB<math>\mu</math>)</b>	<b>Scale Reading (dB)</b>	<b>Adjusted Level (dB<math>\mu</math>)</b>	<b>Notes</b>
<b>92.5</b>	6	-	120	7.9	<b>118.1</b>	
<b>94.1</b>	6	-	120	7.0	<b>119.0</b>	
<b>96.5</b>	6	-	120	8.1	<b>117.9</b>	
<b>98.9</b>	6	-	120	7.1	<b>118.9</b>	
<b>102.5</b>	6	-	120	6.8	<b>119.2</b>	
<b>106.1</b>	6	-	120	6.9	<b>119.1</b>	

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.**

	<b>92.5</b>	<b>94.1</b>	<b>96.5</b>	<b>98.9</b>	<b>102.5</b>	<b>106.1</b>
<b>92.5</b>	---	95.7	100.5	105.3	112.5	119.7
<b>94.1</b>	90.9	---	98.9	103.7	110.9	118.1
<b>96.5</b>	88.5	91.7	---	101.3	108.5	115.7
<b>98.9</b>	86.1	89.3	94.1	---	106.1	113.3
<b>102.5</b>	82.5	85.7	90.5	95.3	---	109.7
<b>106.1</b>	78.9	82.1	86.9	91.7	98.9	---

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*
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### Transmitter Mixes

<b>92.5</b>	<b>Carrier</b>	<b>Ref.</b>	<b>6</b>		<b>6</b>	<b>120</b>	<b>7.9</b>		<b>118.1</b>		(1)
<b>94.1</b>	<b>Carrier</b>	<b>Ref.</b>	<b>6</b>		<b>6</b>	<b>120</b>	<b>7</b>		<b>119</b>		
<b>96.5</b>	<b>Carrier</b>	<b>Ref.</b>	<b>6</b>		<b>6</b>	<b>120</b>	<b>8.1</b>		<b>117.9</b>		
<b>98.9</b>	<b>Carrier</b>	<b>Ref.</b>	<b>6</b>		<b>6</b>	<b>120</b>	<b>7.1</b>		<b>118.9</b>		(2)
<b>102.5</b>	<b>Carrier</b>	<b>Ref.</b>	<b>6</b>		<b>6</b>	<b>120</b>	<b>6.8</b>		<b>119.2</b>		
<b>106.1</b>	<b>Carrier</b>	<b>Ref.</b>	<b>6</b>		<b>6</b>	<b>120</b>	<b>6.9</b>		<b>119.1</b>		
78.9	92.5	106.1	6	7.8	13.8	20	20	20	118.1	-98.1	
82.1	94.1	106.1	6	6.9	12.9	20	20	12.9	119	-106.1	
82.5	92.5	102.5	6	7	13	20	20	13	118.1	-105.1	
85.7	94.1	102.5	6	6.8	12.8	20	20	12.8	119	-106.2	
86.1	92.5	98.9	6	6.7	12.7	20	20	12.7	118.1	-105.4	
86.9	96.5	106.1	6	6.7	12.7	20	20	12.7	117.9	-105.2	
88.5	92.5	96.5	6	6.9	12.9	20	14.1	18.8	118.1	-99.3	KPLU on Tiger #1
89.3	94.1	98.9	6	6.9	12.9	20	20	12.9	119	-106.1	
90.5	96.5	102.5	6	6.8	12.8	20	20	12.8	117.9	-105.1	
90.9	92.5	94.1	6	6.6	12.6	20	20	12.6	118.1	-105.5	
91.7	94.1	96.5	6	6.8	12.8	20	11.3	21.5	119	-97.5	
91.7	98.9	106.1	6	6.8	12.8	20	11.3	21.5	118.9	-97.4	
94.1	96.5	98.9	6	6.8	12.8	20	5.5	27.3	117.9	-90.6	Turned off 94.1
95.3	98.9	102.5	6	6.8	12.8	20	20	12.8	118.9	-106.1	
95.7	94.1	92.5	6	6.9	12.9	20	11.5	21.4	119	-97.6	
98.9	96.5	94.1	6	6.8	12.8	20	20	12.8	117.9	-105.1	Turned off 98.9
98.9	102.5	106.1	6	6.8	12.8	20	20	12.8	119.2	-106.4	Turned off 98.9
100.5	96.5	92.5	6	6.5	12.5	20	20	12.5	117.9	-105.4	
101.3	98.9	96.5	6	6.9	12.9	20	20	12.9	126	-113.1	
103.7	98.9	94.1	6	6.8	12.8	20	4.1	28.7	126	-97.3	
105.3	98.9	92.5	6	6.8	12.8	20	0.5	32.3	126	-93.7	
106.1	102.5	98.9	6	6.8	12.8	20	6.1	26.7	119.2	-92.5	Turned off 106.1
108.5	102.5	96.5	6	6.5	12.5	20	20	12.5	119.2	-106.7	
109.7	106.1	102.5	6	7	13	20	20	13	119.1	-106.1	

110.9	102.5	94.1	6	<b>6.5</b>	12.5	<b>20</b>	<b>20</b>	12.5	<b>119.2</b>	-106.7
112.5	102.5	92.5	6	<b>6.8</b>	12.8	<b>20</b>	<b>20</b>	12.8	<b>119.2</b>	-106.4
113.3	106.1	98.9	6	<b>6.8</b>	12.8	<b>20</b>	<b>20</b>	12.8	<b>119.1</b>	-106.3
115.7	106.1	96.5	6	<b>6.9</b>	12.9	<b>20</b>	<b>20</b>	12.9	<b>119.1</b>	-106.2
118.1	106.1	94.1	6	<b>6.8</b>	12.8	<b>20</b>	<b>20</b>	12.8	<b>119.1</b>	-106.3
119.7	106.1	92.5	6	<b>7</b>	13	<b>20</b>	<b>20</b>	13	<b>119.1</b>	-106.1

#### Local Stations in the Area

(1) KQMV 92.5 MHz. Tested at 63KW ERP for licensing at a later date.

(2) KWJZ 98.9 MHz. Tested at 68 KW ERP for licensing at a later date.

After testing was completed on the combined system, the KQMV and KWJZ transmitters power were reduced to operate at their original ERP's of 50 KW (KQMV 92.5 MHz.), and 58 KW (KWJZ 98.9 MHz.). The "Level Referenced to Carrier" does not exceed the level of actual testing due to a reduction of power.

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.

**Conclusion:** Based upon my observations and measurements taken on June 30, 2006 as summarized in this document, I, Jeff Taylor, find the subject system- specifically the transmitter and filter system for the operation of KQMV, KMPS, KJAQ, KWJZ, KZOK and KBKS 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 KQMV, KMPS, KJAQ, KWJZ, KZOK and KBKS are 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:

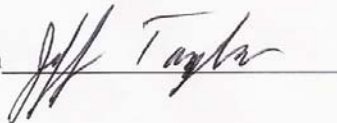
County of Warrick)

**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"). I am familiar with and have assisted in the design, manufacturing and installation of FM Antennas and FM Filters with ERI.
- 2.) I have either prepared and/or directly supervised the preparation of all technical information contained in the Report of Findings and to my knowledge to be accurate and true.
- 3.) ERI has been requested by Sandusky Broadcasting, on behalf of KQMV, KMPS, KJAQ, KWJZ, KZOK and KBKS to prepare this report of findings.

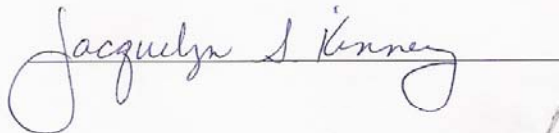
Jeff Taylor; Field Technician



*Subscribed and sworn to before me on this 6<sup>th</sup> day of July, 2006.*

Jacquelyn Kinney; Notary Public

My Commission expires July 5<sup>th</sup> 2007



**A-2 ERI Antenna Specification Sheet**

American Tower West Tiger #2  
Seattle, Washington

**General Specifications**

Antenna Type ..... High Power FM-Broadcast, Suitable For Multiplexing  
Model Number ..... 1084-8CP (Cogwheel)  
Number of Bay Levels ..... Eight  
Polarization ..... Right Hand Circular

**Electrical Specifications**

Antenna Input Power Capability ..... 140 KW Max <sup>(1)</sup>  
Operating Frequency Band ..... 88 ~ 108 Megahertz.  
VSWR ..... <1.15:1 @ Operating  
Frequencies<sup>(2)</sup>  
Azimuthal Pattern Circularity ..... Better Than +/- 2dB From RMS ( Free Space )  
Power Split ..... 50/50 ( Horizontal & Vertical )  
Frequency Specific Information:

<u>Frequency</u>	<u>Station ERP</u>	<u>Beam Tilt</u>	<u>First Null Fill</u>	<u>Second Null Fill</u>	<u>Power Gain</u>	<u>Line Loss</u> <sup>(3)</sup>	<u>Filter Loss</u> <sup>(4)</sup>	<u>Computed TPO</u>
92.5	50 KW	-1.31°	9 %	7%	3.147	.152 db	.414 db	22.8 KW
94.1	73 KW	-1.31°	9 %	8%	3.186	.153 db	.284 db	25.3 KW
96.5	52 KW	-1.31°	10 %	8%	3.243	.155 db	.223 db	18.2 KW
98.9	58 KW	-1.31°	10 %	8%	3.299	.157 db	.236 db	22.5 KW
102.5	73 KW	-1.31°	10 %	8%	3.377	.159 db	.297 db	24.0 KW
106.1	73 KW	-1.31°	10 %	8%	3.449	.162 db	.254 db	23.2 KW

**Mechanical Specifications**

Antenna Feed System ..... Fed With Two 6 1/8" Lines  
Input Connector ..... 6 1/8"-50 Ohm EIA Flanged  
Element Deicing.....Raydomes  
Interbay Spacing ..... 92" Center to Center  
Array Length..... 61'  
Construction Material ( Antenna ) ..... All Noncorrosive  
Construction Material ( Mounting ) ..... All Stainless Steel

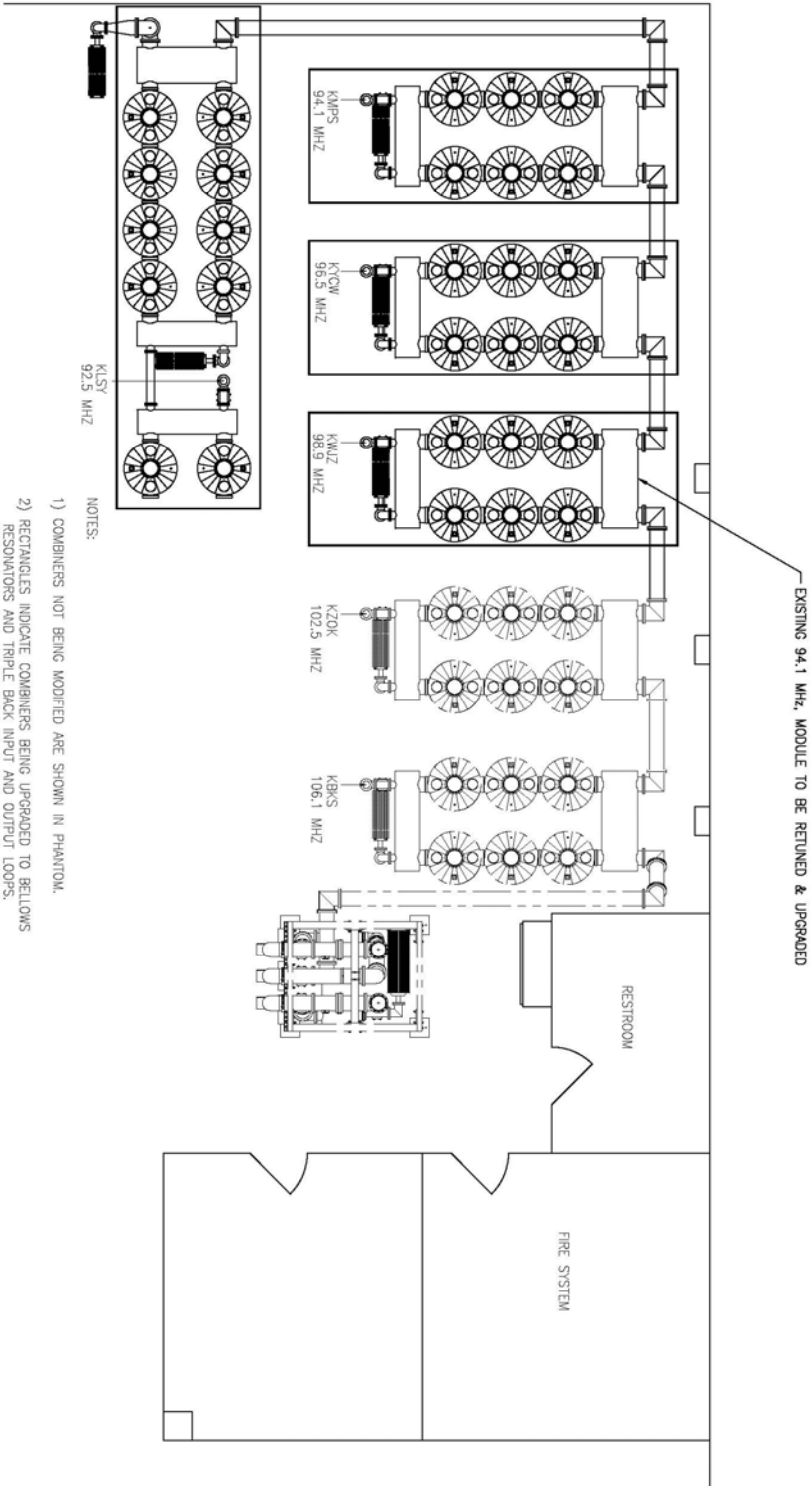
1) Power Capability Has Been Rated Assuming an Operating Transmission VSWR of 1.5:1

2) VSWR Specification Achieved After On Site Tuning For User Specific Frequencies.

3) Line Loss Assumes A Feed Run of 297 Feet, 6 1/8" Myat Rigid.

4) Losses Taken From Actual Combiner.





- NOTES:
- 1) COMINERS NOT BEING MODIFIED ARE SHOWN IN PHANTOM.
  - 2) RECTANGLES INDICATE COMINERS BEING UPGRADED TO BELOWS RESONATORS AND TRIPLE BACK INPUT AND OUTPUT LOOPS.

**ELECTRONICS RESEARCH, INC.**  
 7777 GARDNER RD.  
 CHANDLER, IN. 47610-9637  
 PHONE: (812) 925-6000  
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SUPERSTEDS PART #:		APPROVED		DATE		NAME/COMINER ROOM MODIFICATIONS	
SUPERSTEDS FILE #:		ENG.		0.00 ± 0.03		FOR WEST TIGER MT. II SEATTLE, WA	
WATERLAL:		MANU.		0.000 ± 0.008		DATE: 1/11/01 BY: [signature] SCALE: 1 OF 1	
				± .5°		DATE: 1/18/05 BY: [signature] SCALE: 1/50	
				TO BRANCHES		PER MAT' 1021-APPLICABLE	

**A-4 ERI Combiner Specification Sheet**

American Tower West Tiger #2  
Seattle, Washington

**General Specifications:**

Multiplexer Type ..... Constant Impedence "Series 963"  
 Number of Combining Units ..... Six  
 Injected Port to Injected Port Isolation ..... < - 50 dB  
 Output Connector ..... 6 1/8 "50 Ohm EIA (Flanged)  
 Output Power (Designed) ..... 140 KW<sup>(1)</sup>

Heat Removal (All Multiplexer Components) ..... Natural Convection  
 Physical Arrangement ..... All Components floor standing

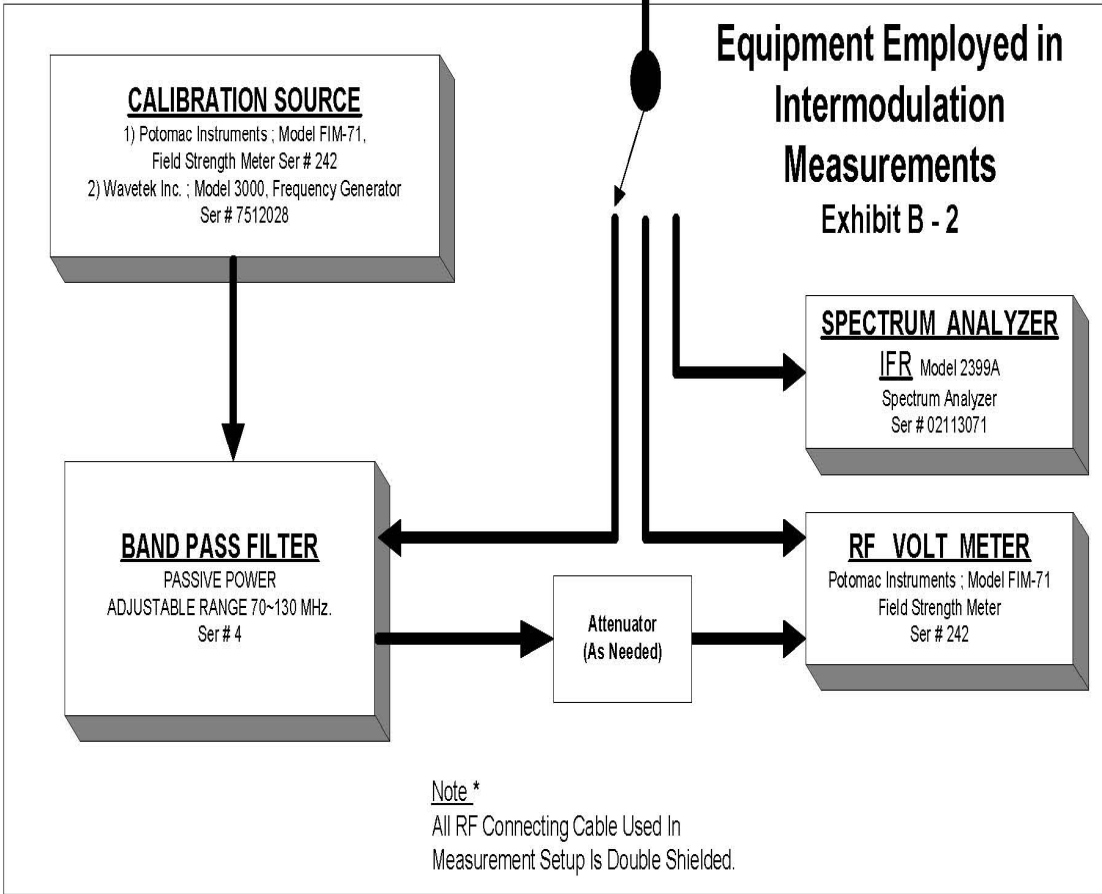
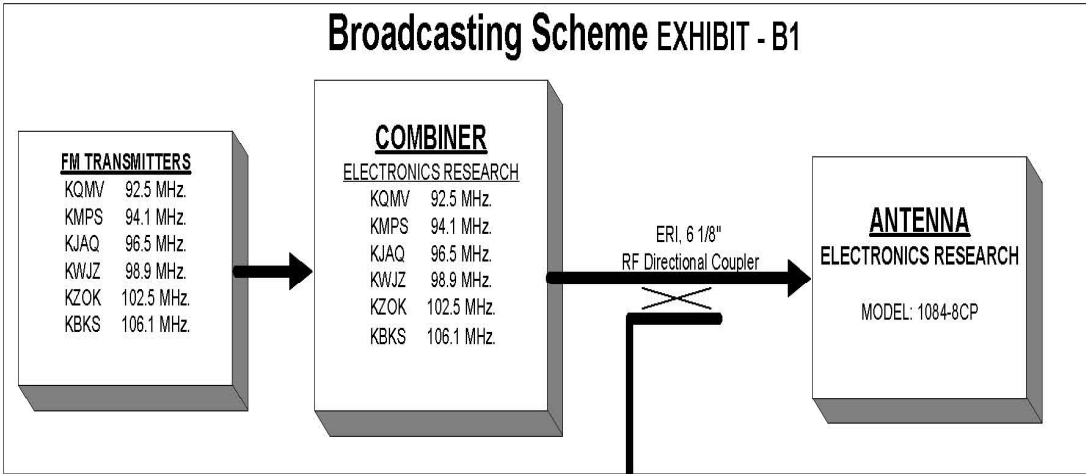
**Injected Port Specifications:**

Frequency Assignment ..... 92.5, 94.1, 96.5, 98.9, 102.5, and 106.1 MHz.  
 Power Rating, Each Injected Port (Designed) ..... 26 KW  
 Input Connector ..... 3-1/8" 50 Ohm EIA (Flanged)  
 VSWR ..... < 1.08:1 @ +/-150 KHz.<sup>(2)</sup>  
 Group Delay ..... Less than 75 ns Overall Variation, Carrier @ +/- 150 KHz.  
 Insertion Loss (Measured):

92.5 MHz. .... - 0.414 dB  
 94.1 MHz. .... - 0.284 dB  
 96.5 MHz. .... - 0.223 dB  
 98.9 MHz. .... - 0.236 dB  
 102.5 MHz. .... - 0.297 dB  
 106.1 MHz. .... - 0.254 dB

1) Power Rating Listed is as Designed Only. Actual Power Capabilities May Vary.

2) When Terminated in 50 Ohm Resistive Load.

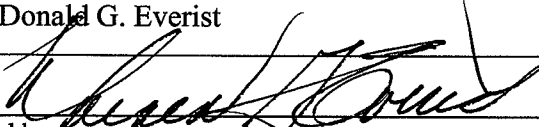


**Broadcasting Scheme and Equipment Employed in Intermodulation Measurements**

**EXHIBIT B**

## SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name Donald G. Everist		Relationship to Applicant (e.g., Consulting Engineer) Consulting Engineer	
Signature 		Date July 11, 2006	
Mailing Address Cohen, Dippell and Everist, P.C., 1300 L Street, NW, Suite 1100			
City Washington	State or Country (if foreign address) DC		ZIP Code 20005
Telephone Number (include area code) (202) 898-0111		E-Mail Address (if available) cde@attglobal.net	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001),  
AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)),  
AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

### Section III - Engineering

#### TECHNICAL SPECIFICATIONS

Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

#### TECH BOX

1. Channel: \_\_\_\_\_
2. a. Effective Radiated Power: \_\_\_\_\_ kW (H) \_\_\_\_\_ kW (V)  
b. Maximum Effective Radiated Power: ☐ Not applicable \_\_\_\_\_ kW (H) \_\_\_\_\_ kW (V)  
(Beam-Tilt Antenna ONLY)
3. Transmitter Power Output: \_\_\_\_\_ kW
4. Antenna Data

Manufacturer	Model	Number of Sections	Spacing Between Sections (wavelength)
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**NOTE:** In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

#### CERTIFICATION

All applicants must complete this section.

5. **Main Studio Location.** The main studio location complies with 47 C.F.R. Section 73.1125. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
6. **Transmitter Power Output.** The operating transmitter power output produces the authorized effective radiated power. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

#### APPLICATIONS FILED TO COVER A CONSTRUCTION PERMIT.

**NOTE:** In addition to the information called for in this section, an explanatory exhibit providing full particulars must be submitted for each question for which a "No" response is provided.

7. **Constructed Facility.** The facility was constructed as authorized in the underlying construction permit or complies with 47 C.F.R. Section 73.1690. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
8. **Special Operating Conditions.** The facility was constructed in compliance with all special operating conditions, terms, and obligations described in the construction permit. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

Exhibit No.

An exhibit may be required. Review the underlying construction permit.

**PREPARER'S CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.**

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**APPLICATION FILED PURSUANT TO 47 C.F.R. SECTIONS 73.1675(c) or 73.1690(c).**

Only applicants filing this application pursuant to 47 C.F.R. Sections 73.1675(c) or 73.1690(c) must complete the following

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9. **Changing transmitter power output.** Is this application being filed to authorize a change in transmitter power output caused by the replacement of omnidirectional antenna with another omnidirectional antenna or an alteration of the transmission line system? See 47 C.F.R. Sections 73.1690(c)(1) and (c)(10). ☐ Yes ☐ No
10. **Increasing effective radiated power.** Is this application being filed to authorize an increase in ERP for a station operating in the nonreserved band (Channels 221-300)? See 47 C.F.R. Sections 73.1690(c)(4), (c)(5) and (c)(7). ☐ Yes ☐ No

If "Yes" to the above, the Applicant certifies the following:

- a. **Spacing Requirements.** The increase in ERP was authorized pursuant to MM Docket 88-375 (Class A stations) OR the facility complies with the spacing requirements of 47 C.F.R. Section 73.207. ☐ Yes ☐ No 

See Explanation in Exhibit No.
- b. **International Coordination.** The transmitter site is greater than 320 km from the Canadian or Mexican borders OR coordination for the station's international class is complete. ☐ Yes ☐ No 

See Explanation in Exhibit No.
- c. **Interference.** The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied OR are not applicable. ☐ Yes ☐ No 

See Explanation in Exhibit No.

**Exhibit required.** If the proposed facility must be notified to the entities set forth in 47 C.F.R. Section 73.1030, the applicant must provide a copy of the written approval for the ERP increase from the affected entity.

Exhibit No.

- d. **Multiple Ownership Showing.** The increase in ERP will not require the consideration of a multiple ownership showing pursuant to 47 C.F.R. Section 73.3555. ☐ Yes ☐ No 

See Explanation in Exhibit No.
- e. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (*i.e.*, the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an **Exhibit is required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

11. **Increasing vertically polarized effective radiated power.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(4) to authorize an increase in the vertically polarized ERP for a station operating in the reserved band (Channels 200-220)? ☐ Yes ☐ No

If "Yes" to the above, the Applicant certifies the following:

- a. **TV Channel 6 Protection Requirements.** The facility complies with the spacing requirements of 47 C.F.R. Section 73.525(a)(1). ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
- b. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (*i.e.*, the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an **Exhibit is required**. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

12. **Decreasing effective radiated power (non-reserved channel).** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(8) to authorize a decrease in the ERP for a station operating in the nonreserved band (Channels 221-300)? ☐ Yes ☐ No

If "Yes" to the above, the Applicant certifies the following:

- a. **Community Coverage.** The proposed facility complies with the community coverage requirements of 47 C.F.R. Section 73.315 where the distance to the 3.16 mV/m contour is predicted using the standard prediction method in 47 C.F.R. Section 73.313. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
- b. **Auxiliary Facilities.** The authorized or pending auxiliary facilities for this station comply with 47 C.F.R. Section 73.1675(a). ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
- c. **Multiple Ownership Showing.** The decrease in ERP is not requested or required to establish compliance with 47 C.F.R. Section 73.3555. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

13. **Decreasing effective radiated power (reserved channel).** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(8) to authorize a decrease in the ERP for a station operating in the reserved band (Channels 200-220)? ☐ Yes ☐ No

If "Yes" to the above, the Applicant certifies the following:

- a. **Community Coverage.** The proposed facility complies with the community coverage requirements of 47 C.F.R. Section 73.1690(c)(8)(i) where the distance to the 1 mV/m contour is predicted using the standard prediction method in 47 C.F.R. Section 73.313. ☐ Yes ☐ No 

See Explanation  
in Exhibit No.
- b. **Auxiliary Facilities.** The authorized or pending auxiliary facilities for this station comply with 47 C.F.R. Section 73.1675(a). ☐ Yes ☐ No 

See Explanation  
in Exhibit No.

14. **Replacing a directional antenna.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(2) to replace a directional antenna with another directional antenna? ☐ Yes ☐ No

If "Yes" to the above, the applicant certifies the following:

- a. **Measurement of Directional Antenna.** The composite measured pattern and measurement procedures comply with 47 C.F.R. Section 73.1690(c)(2). **Exhibit required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

Exhibit No.

- b. **Installation of Directional Antenna.** The installation of the directional antenna complies with 47 C.F.R. Section 73.1690(c)(2). **Exhibit required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

Exhibit No.

15. **Deleting contour protection status.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(6) to delete contour protection status (47 C.F.R. Section 73.215) for a station operating in the nonreserved band (Channels 221-300)? ☐ Yes ☐ No

- a. If "Yes" to the above, the applicant certifies that the facility complies with the spacing requirements of 47 C.F.R. Section 73.207. ☐ Yes ☐ No 

See Explanation in Exhibit No.

16. **Use a formerly licensed main facility as an auxiliary facility.** Is this application being filed pursuant to 47 C.F.R. Section 73.1675(c)(1) to request authorization to use a formerly licensed main facility as an auxiliary facility and/or change the ERP of the proposed auxiliary facility? ☐ Yes ☐ No

If "Yes" to the above, the applicant certifies the following:

- a. **Auxiliary antenna service area.** The proposed auxiliary facility complies with 47 C.F.R. Section 73.1675(a). ☐ Yes ☐ No 

See Explanation in Exhibit No.

- b. **Environmental Protection Act.** The proposed facility is excluded from environmental processing under 47 C.F.R. Section 1.1306 (*i.e.*, the facility will not have a significant environmental impact and complies with the maximum permissible radiofrequency electromagnetic exposure limits for controlled and uncontrolled environments). Unless the applicant can determine compliance through the use of the RF worksheets in Appendix A, an **Exhibit is required.** ☐ Yes ☐ No 

See Explanation in Exhibit No.

By checking "Yes" above, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic exposure in excess of FCC guidelines.

17. **Change the license status.** Is this application being filed pursuant to 47 C.F.R. Section 73.1690(c)(9) to change the license status from commercial to noncommercial or from noncommercial to commercial? ☐ Yes ☐ No

Exhibit No.

If "Yes" to the above, submit an exhibit providing full particulars. For applications changing license status from commercial to noncommercial, include Section II of FCC Form 340 as an exhibit to this application.

**PREPARER'S CERTIFICATION ON PAGE 3 MUST BE COMPLETED AND SIGNED.**