SELLMEYER ENGINEERING
BROADCAST AND COMMUNICATIONS CONSULTING ENGINEERS
P.O. Box 356 McKinney, Texas 75070
MEMBER AFCCE
(972) 542-2056

DIRECTIONAL ANTENNA PARTIAL PROOF OF PERFORMANCE
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

AUGUST, 2001

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PARTIAL PROOF OF PERFORMANCE
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SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

Morris Communications Corporation

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☐ Station License ☒ Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
				Night	Day
KGNC	N/A	710	Unlimited	10.0	10.0

2. Station location

State	City or Town
Texas	Amarillo

3. Transmitter location

State	County	City or Town	Street address (or other identification)
Texas	Carson	Rural Carson County	Approx 25 mi. NE of Amarillo, Tx

4. Main studio location

State	County	City or Town	Street address (or other identification)
Texas	Potter	Amarillo	3505 Olsen Blvd

5. Remote control point location (specify only if authorized directional antenna)

State	County	City or Town	Street address (or other identification)
Texas	Potter	Amarillo	3505 Olsen Blvd

6. Has type-approved stereo generating equipment been installed? ☐ Yes ☒ No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68? ☒ Yes ☐ No

☐ Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed.

Exhibit No. E-1

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system	RF common point or antenna current (in amperes) without modulation for day system
14.49	14.49

Measured antenna or common point resistance (in ohms) at operating frequency		Measured antenna or common point reactance (in ohms) at operating frequency	
Night	Day	Night	Day
50.0	50.0	0.0	0.0

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
1 (South)	+132.2	-179.5	0.255	0.161	N/A	N/A
2 (South-Center)	-119.7	-86.0	0.677	0.724	N/A	N/A
3 (Center)	0.0	0.0	1.000	1.000	N/A	N/A
4 (North-Center)	+116.9	N/A	0.731	N/A	N/A	N/A
5 (North)	-125.6	N/A	0.244	N/A	N/A	N/A

Manufacturer and type of antenna monitor: Potomac Instruments 1901-5

9. Description of antenna system (If directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
Uniform Cross Section Guyed Vertical	91.44	93.00	93.88	Exhibit No. N/A

Excitation ☒ Series ☐ Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude				West Longitude			
	35 °	25 '	12 "		101 °	33 '	20 "

If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits. Exhibit No. N/A

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system. Exhibit No. E-1

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

None

11. Give reasons for the change in antenna or common point resistance.

Refurbishment of transmitter plant.

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type)	Signature (check appropriate box below)
J. S. Sellmeyer, P. E.	
Address (include ZIP Code)	Date
Sellmeyer Engineering P.O. Box 356 McKinney, Texas 75070	August 21, 2001
	Telephone No. (Include Area Code)
	214-495-9764

☐ Technical Director ☒ Registered Professional Engineer

☐ Chief Operator ☒ Technical Consultant

☐ Other (specify)

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ENGINEERING STATEMENT RE:
PARTIAL PROOF OF PERFORMANCE
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS
AUGUST, 2001

= =

This Firm has been retained by Morris Communications Corporation, licensee of Radio Station KGNC to adjust the directional antenna system and perform a Partial Proof of Performance on the directional array of Radio Station KGNC, Amarillo, Texas.

Station KGNC operates on 710 kilohertz with ten kilowatts fulltime using a five element directional antenna system during nighttime hours and with the three southern towers during daytime hours.

The entire transmitter plant of Station KGNC has been refurbished following serious damage from an ice storm which destroyed large portions of the elevated ground radials in the immediate vicinity of the tower bases along with a large portion of the sampling system and several sections of the original overhead transmission lines. New transmission, sample, control and power lines have been installed in an underground trench approximately thirty inches below grade level. The original overhead counterpoise system has been replaced by 120 uniformly spaced underground radials from the base of each tower, a radius of approximately fifty feet to the intersection of a copper cable which terminates the original radials. At this point the new radials are bonded to the copper cable. All existing connections were checked for security and resoldered where necessary. All electrical connections were made with high temperature solder for long term reliability. All radials cut by the trenching process were repaired and bonded with high temperature solder as necessary.

The new transmission lines have significantly lower propagation velocities than the original air dielectric lines. Minor changes were made to the power dividing and phasing system to compensate for the differences and permit more independent adjustment of operating parameters.

The Common Point Ammeter was relocated to the south tower coupling house. A Delta Electronics common point bridge was installed at this point to allow observation of the common point impedance. Redundant transmission lines were installed between the transmitter building and the south tower coupling building.

A non-directional matching network was installed at the north tower, Tower-5, to allow for operation at reduced power during tower light replacement and other required tower maintenance. This tower is not used during daytime operation so maintenance of all five towers is possible during daytime

hours without interruption of service to the public.

ANTENNA MONITORING SYSTEM

The antenna monitoring system was replaced in its entirety. Equal lengths of Cablewave FLC-38-50J foam dielectric sample lines are buried from the north end of the transmitter building to each antenna coupling building. The end termination of the cable is a Type UHF connector furnished by the manufacturer which is connected to a bulkhead feedthrough connection on the coupling panel. A Delta Electronics type TCT-1 current transformer is located in the feed pipe to each tower at this point. The connection between the feedthrough connector and the toroid is made by a short length of RG-8/U. The building end of the sample line is terminated in a similar manner at the north bulkhead of the transmitter building. From this point to the terminal rack, equal lengths of Cablewave FLC-38-50J are run in an overhead wire trough. Short equal lengths of RG-8/U are used to connect the antenna monitor to the UHF connectors on the ends of the sample lines. The entire system was measured and determined to be equal within one electrical degree at 710 kilohertz.

The excess sample line is stored in an underground pit located approximately twenty feet north of the transmitter building.

The antenna monitor is a Potomac Instruments type 1901-5. The output of the monitoring system is available on the station remote control system

ADJUSTMENT OF DIRECTIVE ARRAY

The daytime and nighttime arrays were initially adjusted to the licensed parameters using the existing sampling loops connected to the new sample lines and antenna monitor. Following field measurements, minor adjustments were made to both patterns before switching to the new toroidal transformers. The antenna monitor readings were recorded for both patterns following the switch to the toroidal transformers. The loops and their associated isolation inductors were left in place to avoid disturbing the operation of the arrays.

Out of an abundance of caution due to the replacement of the counterpoise system with conventional radials, eight to ten points were measured on each of the nighttime radials and analyzed in accordance with Section 73.154 of the Rules. The tabulation of each of the measured radials appears herein as Exhibits E1-6 through E1-18. The overall pattern exhibits excellent agreement with the 1967 full proof of performance. The efficiency in the main lobe over Amarillo is essentially unchanged.

Some minor adjustments to the daytime array were determined to be necessary following initial measurements. These adjustments were made by John P. Wolfe, Chief Engineer of Station KGNC

under my direction. The Common Point Impedance was maintained by reference to the Delta common point bridge which was previously checked for proper calibration by the undersigned. Following these adjustments, Mr. Wolfe measured five radials, the three specified radials an adjacent radial and the main lobe over Amarillo to verify the efficiency of the daytime array. The 226° radial efficiency was determined to be within 1.2 percent of the 1967 value. The tabulations of these measurements appear herein as Exhibits E1-1 through E1-5.

The attached data was measured on the dates indicated. The resulting data was analyzed against the November, 1967 full proof of performance. All measurements were made within the period of

time from two hours after local sunrise to two hours prior to local sunset in similar environmental conditions.

All field measurements were made by John P. Wolfe, Chief Engineer of Radio Station KGNC under my supervision, using a Potomac Instruments model FIM-21 field intensity meter, serial number 1233, last calibrated on August 24, 1998. The meter was also compared against an FIM-41 owned by this Firm and was found to be in agreement within the Manufacturer's specifications. Mr. Wolfe is known by the undersigned to be qualified by experience to make such field intensity measurements.

The attached Tabulation of Field Intensity Data lists the inverse distance fields and the associated standard pattern limits for each radial. It is the opinion of the undersigned that the KGNC Directional Antenna System is adjusted in substantial agreement with the terms of the station license.

MONITOR POINTS

No changes were made in the monitor point locations. With the exception of the monitor point on the five degree radial, all points are located in rural areas with paths to the transmitter site which remain essentially undisturbed since the November, 1967 proof of performance. The five degree monitor point is located on the southern edge of Borger, Texas. This point appears to be undisturbed and responsive to changes in the radiation. For this reason, no revisions to the descriptions are being furnished.

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TABULATION OF OPERATING PARAMETERS
PARTIAL PROOF OF PERFORMANCE
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS
AUGUST, 2001

DAYTIME ARRAY

Common Point Impedance:	50 + j0 Ohms
Common Point Current:	14.49 Amperes
Transmitter Power:	10,500 Watts

Antenna Monitor Indications*	
Tower 1 (South):	0.161/+179.5
Tower 2 (South-Center):	0.724/- 86.0
Tower 3 (Center):	1.000/ 0.0

NIGHTTIME ARRAY

Common Point Impedance:	50 + j0 Ohms
Common Point Current:	14.49 Amperes
Transmitter Power:	10,500 Watts

Antenna Monitor Indications*	
Tower 1 (South):	0.255/+132.2
Tower 2 (South-Center):	0.677/-119.7
Tower 3 (Center):	1.000/ 0.0
Tower 4 (North-Center):	0.731/+116.9
Tower 5 (North):	0.244/-125.6

* As indicated on a Potomac Instruments 1901-5 Antenna Monitor

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TABULATION OF MEASURED FIELDS
PARTIAL PROOF OF PERFORMANCE
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS
AUGUST, 2001

EXHIBIT	RADIAL	1967 FIELD MV/M	2001 RATIO (LOG RATIO)	2001 FIELD MV/M	STD PAT MV/M
DAYTIME ARRAY					
E1-1	5° D	654.90	1.0033	657.04	717.70
E1-2	59° D	326.60	0.9957	325.18	402.30
E1-3	226° D	1359.60	0.9886	1344.15	1429.90
E1-4	291° D	429.60	1.0055	431.96	504.40
E1-5	311° D	326.60	0.9842	321.45	402.30
NIGHTTIME ARRAY					
E1-6	5° N	473.05	1.0072	476.46	498.90
E1-7	38° N	145.13	0.9877	143.35	160.90
E1-8	59° N	35.88	0.9699	34.80	74.00
E1-9	79° N	31.05	1.0031	31.15	64.40
E1-10	100° N	113.43	1.0250	116.26	169.00
E1-11	128° N	1517.29	0.9860	1496.06	1517.60
E1-12	144° N	1806.91	0.8764	1583.55	1842.40
E1-13	185° N	1288.81	0.9770	1259.11	1367.80
E1-14	226° N	1818.17	1.0094	1835.27	1842.40
E1-15	270° N	117.78	0.9884	116.42	169.00
E1-16	291° N	34.27	1.0689	36.63	64.40
E1-17	311° N	29.12	0.9568	27.86	74.00
E1-18	332° N	134.83	1.0075	135.83	160.90

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EXHIBIT E1-1
RADIAL N-05.0° DAYTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	3.79	105.00	108.00	TIMES	671115	1457	20010730	1.029	0.0122
2	4.03	104.00	100.00	NOT	671115	1453	20010730	0.962	-0.0170
3	4.37	90.50	95.00	LISTED	671115	1448	20010730	1.050	0.0211
4	4.83	84.00	82.00		671115	1440	20010730	0.976	-0.0105
5	5.27	80.00	80.50		671115	1426	20010730	1.006	0.0027
6	8.37	43.80	46.00		671115	1532	20010730	1.050	0.0213
7	9.82	40.20	37.00		671115	1556	20010730	0.920	-0.0360
8	10.10	35.30	36.50		671115	1607	20010730	1.034	0.0145
9	11.50	30.50	31.50		671115	1615	20010730	1.033	0.0140
10	14.20	27.00	26.50		671115	1637	20010730	0.981	-0.0081

ARITHMETIC AVG DA/REF READINGS.	1.0041
LOG-RATIO AVERAGE DA/REF READINGS. . . .	1.0033
REFERENCE FIELD.	654.90
LOG-RATIO TIMES REFERENCE FIELD.	657.04
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	717.70

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-2
RADIAL N-59.0° DAYTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	1.59	119.00	123.00	TIMES	671115	1615	20010730	1.034	0.0144
2	1.69	122.00	114.50	NOTES:	671115	1622	20010730	0.939	-0.0276
3	2.13	95.00	99.00	LISTED	671115	1638	20010730	1.042	0.0179
4	2.24	82.00	85.50		671115	1646	20010730	1.043	0.0182
5	3.17	63.00	61.50		671115	1500	20010730	0.976	-0.0105
6	3.34	60.00	58.50		671115	1514	20010730	0.975	-0.0110
7	3.49	55.50	56.00		671115	1540	20010730	1.009	0.0039
8	3.71	57.50	55.50		671115	1545	20010730	0.965	-0.0154
9	3.86	44.80	48.00		671115	1555	20010730	1.071	0.0300
10	10.70	16.40	15.00		671115	1434	20010730	0.915	-0.0388

ARITHMETIC AVG DA/REF READINGS.	0.9968
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9957
REFERENCE FIELD.	326.60
LOG-RATIO TIMES REFERENCE FIELD.	325.18
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	402.30

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-3
RADIAL N-226.0° DAYTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	1.61	507.00	510.00	TIMES	671119	1627	20010815	1.006	0.0026
2	2.01	393.00	400.00	NOT	671119	1651	20010815	1.018	0.0077
3	2.21	368.00	365.00	LISTED	671119	1655	20010815	0.992	-0.0036
4	3.71	228.00	220.00		671119	1708	20010815	0.965	-0.0155
5	4.33	185.00	195.00		671119	1713	20010815	1.054	0.0229
6	6.73	113.00	103.00		671119	1736	20010815	0.912	-0.0402
7	8.93	84.00	82.50		671119	1748	20010815	0.982	-0.0078
8	9.57	77.00	76.00		671119	1758	20010815	0.987	-0.0057

ARITHMETIC AVG DA/REF READINGS.	0.9894
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9886
REFERENCE FIELD.	1359.60
LOG-RATIO TIMES REFERENCE FIELD.	1344.15
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	1429.90

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-4
RADIAL N-291.0° DAYTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	1.77	157.00	165.00	TIMES	671121	1415	20010815	1.051	0.0216
2	2.06	129.00	130.00	NOT	671121	1418	20010815	1.008	0.0034
3	2.17	122.00	125.00	LISTED	671121	1425	20010815	1.025	0.0106
4	2.32	118.00	115.00		671121	1430	20010815	0.975	-0.0112
5	2.60	103.00	100.00		671121	1436	20010815	0.971	-0.0128
6	2.79	94.00	95.00		671121	1445	20010815	1.011	0.0046
7	2.97	92.00	95.00		671121	1450	20010815	1.033	0.0139
8	3.07	90.00	90.00		671121	1456	20010815	1.000	0.0000
9	3.26	87.50	85.00		671121	1501	20010815	0.971	-0.0126
10	4.75	54.50	55.00		671122	1810	2000815	1.009	0.0040

ARITHMETIC AVG DA/REF READINGS.	1.0053
LOG-RATIO AVERAGE DA/REF READINGS. . . .	1.0055
REFERENCE FIELD.	429.60
LOG-RATIO TIMES REFERENCE FIELD.	431.96
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	504.40

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-5
RADIAL N-311.0° DAYTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	2.23	80.30	81.00	TIMES	671121	1728	20010731	1.009	0.0038
2	2.97	68.50	70.50	NOT	671121	1726	20010731	1.029	0.0125
3	3.28	64.00	62.50	LISTED	671121	1722	20010731	0.977	-0.0103
4	3.60	62.00	63.00		671121	1736	20010731	1.016	0.0069
5	3.81	53.70	51.00		671121	1740	20010731	0.950	-0.0224
6	4.02	50.50	48.00		671121	1746	20010731	0.950	-0.0221
7	4.27	48.00	45.50		671121	1750	20010731	0.948	-0.0232
8	4.43	52.50	54.00		671121	1759	20010731	1.029	0.0122
9	5.87	34.00	32.50		671121	1656	20010731	0.956	-0.0196

ARITHMETIC AVG DA/REF READINGS.	0.9848
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9842
REFERENCE FIELD.	326.60
LOG-RATIO TIMES REFERENCE FIELD.	321.45
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	402.30

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-6
RADIAL N-05.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	2.44	125.00	137.00	TIMES	671116	1532		1.096	0.0398
2	2.63	125.00	111.00	NOT	671116	1541		0.888	-0.0516
3	2.90	103.00	111.00	LISTED	671116	1548		1.078	0.0325
4	3.79	75.00	83.00		671116	1606		1.107	0.0440
5	4.37	65.50	73.00		671116	1615		1.115	0.0471
6	5.76	52.00	57.00		671116	1636		1.096	0.0399
7	8.37	32.00	24.70		671116	1314		0.772	-0.1125
8	9.48	28.00	25.30		671116	1345		0.904	-0.0440
9	11.50	21.50	23.60		671116	1408		1.098	0.0405
10	14.20	19.50	19.30		671116	1436		0.990	-0.0045

ARITHMETIC AVG DA/REF READINGS.	1.0142
LOG-RATIO AVERAGE DA/REF READINGS. . . .	1.0072
REFERENCE FIELD.	473.05
LOG-RATIO TIMES REFERENCE FIELD.	476.46
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	498.90

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-7
RADIAL N-38.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	2.03	45.30	45.00	TIMES	671116	1648	20010321	0.993	-0.0029
2	2.20	42.00	43.00	NOT	671116	1654	20010321	1.024	0.0102
3	2.37	38.60	39.00	LISTED	671116	1700	20010321	1.010	0.0045
4	2.67	39.00	39.00		671116	1705	20010321	1.000	0.0000
5	3.22	25.00	26.00		671116	1730	20010321	1.040	0.0170
6	3.42	25.60	26.00		671116	1735	20010321	1.016	0.0067
7	3.65	25.60	25.50		671116	1745	20010321	0.996	-0.0017
8	3.82	23.00	22.50		671116	1752	20010321	0.978	-0.0095
9	4.06	22.70	22.00		671116	1810	20010321	0.969	-0.0136
10	13.30	6.30	5.50		671116	1536	20010321	0.873	-0.0590

ARITHMETIC AVG DA/REF READINGS.	0.9900
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9877
REFERENCE FIELD.	145.13
LOG-RATIO TIMES REFERENCE FIELD.	143.35
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	160.90

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-8
RADIAL N-59.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	1.59	16.80	17.10	TIMES	671116	1550	20010306	1.018	0.0077
2	2.13	10.00	9.80	NOT	671116	1535	20010306	0.980	-0.0088
3	2.78	7.50	7.30	LISTED	671116	1526	20010306	0.973	-0.0117
4	2.97	5.20	4.90		671116	1517	20010306	0.942	-0.0258
5	3.17	5.70	5.50		671116	1414	20010306	0.965	-0.0155
6	3.34	7.50	7.40		671116	1424	20010306	0.987	-0.0058
7	3.49	8.40	8.40		671116	1440	20010306	1.000	0.0000
8	3.71	8.70	8.50		671116	1445	20010306	0.977	-0.0101
9	10.20	1.40	1.50		671116	1600	20010306	1.071	0.0300
10	10.70	1.80	1.50		671116	1548	20010306	0.833	-0.0792

ARITHMETIC AVG DA/REF READINGS.	0.9747
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9699
REFERENCE FIELD.	35.88
LOG-RATIO TIMES REFERENCE FIELD.	34.80
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	74.00

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-9
RADIAL N-79.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REF DATE	DA TIME	DA date	DA/REF	LOG
1	1.33	9.60	9.60	TIMES	671118	1330	20010306	1.000	0.0000
2	1.85	9.40	9.60	NOT	671118	1321	20010306	1.021	0.0091
3	1.97	8.00	8.10	LISTED	671118	1312	20010306	1.013	0.0054
4	2.32	7.40	7.50		671118	1305	20010306	1.014	0.0058
5	2.89	4.90	4.80		671118	1253	20010306	0.980	-0.0090
6	2.97	3.60	4.10		671118	1245	20010306	1.139	0.0565
7	3.38	8.80	8.80		671118	1350	20010306	1.000	0.0000
8	3.42	8.60	8.70		671118	1355	20010306	1.012	0.0050
9	5.23	4.00	3.90		671118	1620	20010306	0.975	-0.0110
10	10.10	2.70	2.40		671118	1610	20010306	0.889	-0.0512

ARITHMETIC AVG DA/REF READINGS.	1.0041
LOG-RATIO AVERAGE DA/REF READINGS. . . .	1.0031
REFERENCE FIELD.	31.05
LOG-RATIO TIMES REFERENCE FIELD.	31.15
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	64.40

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-10
RADIAL N-100.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA TIME	DA date	DA/REF	LOG
1	2.37	35.50	36.80	TIMES	671116	1617	20010307	1.037	0.0156
2	2.43	33.50	36.20	NOT	671116	1620	20010307	1.081	0.0337
3	2.88	25.70	26.00	LISTED	671116	1626	20010307	1.012	0.0050
4	3.13	23.20	25.50		671116	1630	20010307	1.099	0.0411
5	3.83	17.50	18.00		671116	1635	20010307	1.029	0.0122
6	3.94	16.90	17.30		671116	1640	20010307	1.024	0.0102
7	5.97	10.87	10.50		671116	1651	20010307	0.966	-0.0150
8	6.77	10.20	10.60		671116	1658	20010307	1.039	0.0167
9	6.99	9.30	8.90		671116	1701	20010307	0.957	-0.0191
10	10.00	6.40	6.50		671116	1620	20010307	1.016	0.0067

ARITHMETIC AVG DA/REF READINGS.	1.0258
LOG-RATIO AVERAGE DA/REF READINGS. . . .	1.0250
REFERENCE FIELD.	113.43
LOG-RATIO TIMES REFERENCE FIELD.	116.26
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	169.00

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-11
RADIAL N-128° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	1.89	460.00	465.00	TIMES	671118	1615	20010319	1.011	0.0047
2	2.33	398.00	330.00	NOT	671118	1628	20010319	0.829	-0.0814
3	2.63	325.00	325.00	LISTED	671118	1633	20010319	1.000	0.0000
4	3.62	232.00	240.00		671118	1639	20010319	1.034	0.0147
5	3.67	225.00	225.00		671118	1641	20010319	1.000	0.0000
6	4.93	174.00	170.00		671118	1648	20010319	0.977	-0.0101
7	5.73	143.00	145.00		671118	1654	20010319	1.014	0.0060
8	6.21	135.00	135.00		671118	1659	20010319	1.000	0.0000
9	8.77	99.00	110.00		671118	1707	20010319	1.111	0.0458
10	10.70	79.00	75.00		671118	1715	20010319	0.949	-0.0226

ARITHMETIC AVG DA/REF READINGS.	0.9926
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9860
REFERENCE FIELD.	1517.29
LOG-RATIO TIMES REFERENCE FIELD.	1496.06
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	1517.60

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-12
RADIAL N-144.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	1.94	565.00	585.00	TIMES	671118	1753	20001101	1.035	0.0151
2	2.37	445.00	450.00	NOT	671118	1730	20010307	1.011	0.0049
3	2.53	440.00	450.00	LISTED	671118	1735	20010307	1.023	0.0098
4	2.70	415.00	418.00		671118	1742	20010307	1.007	0.0031
5	2.85	390.00	370.00		671118	1748	20010307	0.949	-0.0229
6	3.06	355.00	95.00		671118	1755	20010307	0.268	-0.5725
7	3.29	318.00	320.00		671118	1808	20010307	1.006	0.0027
8	3.67	288.00	290.00		671118	1818	20010307	1.007	0.0030
9	10.60	107.00	105.00		671118	1902	20010307	0.981	-0.0082
10	13.00	81.50	80.00		671118	1920	20010307	0.982	-0.0081

ARITHMETIC AVG DA/REF READINGS.	0.9269
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.8764
REFERENCE FIELD.	1806.91
LOG-RATIO TIMES REFERENCE FIELD.	1583.55
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	1842.40

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-13
RADIAL N-185.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	0.61	1400.00	1430.00	TIMES	671118	1559		1.021	0.0092
2	2.44	329.00	327.00	NOT	671116	1619		0.994	-0.0026
3	2.66	299.00	300.00	LISTED	671116	1625		1.003	0.0015
4	4.63	167.00	163.00		671116	1644		0.976	-0.0105
5	9.91	78.00	71.00		671116	1704		0.910	-0.0408
6	10.60	71.00	71.00		671116	1714		1.000	0.0000
7	11.60	64.00	63.00		671116	1730		0.984	-0.0068
8	13.80	57.00	55.00		671116	1751		0.965	-0.0155
9	15.30	49.00	46.00		671116	1801		0.939	-0.0274
10	16.70	42.80	43.00		671116	1820		1.005	0.0020

ARITHMETIC AVG DA/REF READINGS.	0.9798
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9770
REFERENCE FIELD.	1288.81
LOG-RATIO TIMES REFERENCE FIELD.	1259.11
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	1367.80

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-14
RADIAL N-226.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
2	1.82	575.00	580.00	NOT	671120	1410	20010319	1.009	0.0038
3	2.01	525.00	530.00	LISTED	671120	1414	20010319	1.010	0.0041
4	2.21	495.00	505.00		671120	1418	20010319	1.020	0.0087
5	2.31	435.00	440.00		671120	1420	20010319	1.011	0.0050
6	2.90	361.00	360.00		671120	1422	20010319	0.997	-0.0012
7	3.06	350.00	340.00		671120	1433	20010319	0.971	-0.0126
8	4.33	244.00	250.00		671120	1438	20010319	1.025	0.0106
9	6.57	160.00	160.00		671120	1501	20010319	1.000	0.0000
10	6.73	150.00	155.00		671120	1508	20010319	1.033	0.0142

ARITHMETIC AVG DA/REF READINGS.	1.0085
LOG-RATIO AVERAGE DA/REF READINGS. . . .	1.0094
REFERENCE FIELD.	1818.17
LOG-RATIO TIMES REFERENCE FIELD.	1835.27
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	1842.40

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-15
RADIAL N-270.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	1.93	43.40	45.00	TIMES	671120	1554	20010320	1.037	0.0157
2	2.12	42.40	43.00	NOT	671120	1559	20010320	1.014	0.0061
3	2.23	39.20	40.00	LISTED	671120	1607	20010320	1.020	0.0088
4	3.03	27.90	27.00		671120	1615	20010320	0.968	-0.0142
5	3.13	24.00	24.00		671120	1622	20010320	1.000	0.0000
6	3.23	22.70	23.00		671120	1627	20010320	1.013	0.0057
7	3.74	18.20	18.00		671120	1634	20010320	0.989	-0.0048
8	4.43	16.70	15.50		671120	1640	20010320	0.928	-0.0324
9	4.97	10.60	10.00		671120	1646	20010320	0.943	-0.0253
10	5.17	10.00	10.00		671120	1655	200103020	1.000	0.0000

ARITHMETIC AVG DA/REF READINGS.	0.9913
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9884
REFERENCE FIELD.	117.78
LOG-RATIO TIMES REFERENCE FIELD.	116.42
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	169.00

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-16
RADIAL N-291.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	1.77	6.90	7.00	TIMES	671120	1220	20010321	1.014	0.0062
2	2.06	5.70	5.00	NOT	671120	1212	20010321	0.877	-0.0569
3	2.17	6.20	7.20	LISTED	671120	1208	20010321	1.161	0.0649
4	2.32	8.80	8.00		671120	1205	20010321	0.909	-0.0414
5	2.60	9.40	9.00		671120	1225	20010321	0.957	-0.0189
6	2.79	4.90	5.20		671120	1228	20010321	1.061	0.0258
7	2.47	3.80	7.50		671120	1235	20010321	1.974	0.2953
8	3.07	4.90	5.00		671120	1238	20010321	1.020	0.0088
9	3.26	8.50	9.00		671120	1248	20010321	1.059	0.0248
10	4.75	4.60	4.40		671120	1706	20010321	0.957	-0.0193

ARITHMETIC AVG DA/REF READINGS.	1.0990
LOG-RATIO AVERAGE DA/REF READINGS. . . .	1.0689
REFERENCE FIELD.	34.27
LOG-RATIO TIMES REFERENCE FIELD.	36.63
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	64.40

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-17
RADIAL N-311.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	2.12	6.90	7.00	TIMES	671124	1352	20010321	1.014	0.0062
2	2.23	8.25	8.00	NOT	671124	1348	20010321	0.970	-0.0134
3	2.97	6.90	6.40	LISTED	671124	1328	20010321	0.928	-0.0327
4	3.28	4.80	4.80		671124	1322	20010321	1.000	0.0000
5	3.60	3.48	4.00		671124	1314	20010321	1.149	0.0605
6	3.81	3.32	3.50		671124	1254	20010321	1.054	0.0229
7	4.02	4.40	4.50		671124	1302	20010321	1.023	0.0098
8	4.27	5.25	5.40		671124	1308	20010321	1.029	0.0122
9	5.87	2.73	2.20		671124	1540	20010320	0.806	-0.0937
10	5.89	2.65	1.90		671124	1531	20010320	0.717	-0.1445

ARITHMETIC AVG DA/REF READINGS.	0.9690
LOG-RATIO AVERAGE DA/REF READINGS. . . .	0.9568
REFERENCE FIELD.	29.12
LOG-RATIO TIMES REFERENCE FIELD.	27.86
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	74.00

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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EXHIBIT E1-18
RADIAL N-332.0° NIGHTTIME
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

PT#	DIST MI	REF DA	DA mV/m	REFtime	REFdate	DA time	DA date	DA/REF	LOG
1	2.74	30.80	32.00	TIMES	671124	1247	20010320	1.039	0.0166
2	3.04	25.60	27.00	NOT	671124	1259	20010320	1.055	0.0231
3	3.27	22.40	22.00	LISTED	671124	1305	20010320	0.982	-0.0078
4	3.61	22.30	22.50		671124	1309	20010320	1.009	0.0039
5	3.87	22.20	23.00		671124	1317	20010320	1.036	0.0154
6	4.88	13.30	13.50		671124	1330	20010320	1.015	0.0065
7	5.12	14.10	14.00		671124	1340	20010320	0.993	-0.0031
8	5.92	12.50	13.00		671124	1347	20010320	1.040	0.0170
9	6.04	13.10	13.00		671124	1354	20010320	0.992	-0.0033
10	9.99	8.80	8.10		671124	1423	20010320	0.920	-0.0360

ARITHMETIC AVG DA/REF READINGS.	1.0082
LOG-RATIO AVERAGE DA/REF READINGS. . . .	1.0075
REFERENCE FIELD.	134.83
LOG-RATIO TIMES REFERENCE FIELD.	135.83
CP/STANDARD PATTERN MAX PERMISSIBLE. . .	160.90

NOTES: ALL TIMES PREVAILING LOCAL IN 24 HOUR FORMAT.
DATES SHOWN IN YYMMDD FORMAT.
ALL READINGS mV/m.

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TABULATION OF MONITOR POINT FIELDS
PARTIAL PROOF OF PERFORMANCE
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS
AUGUST, 2001

RADIAL	DISTANCE MILES	2001 FIELD MV/M	POINT MV/M	STD PAT MV/M	MAX FIELD MV/M
5° D	14.20	657.04	26.5	717.7	29.0
59° D	10.70	325.18	15.0	402.3	18.6
311° D	5.87	321.45	32.5	402.3	40.7
5° N	14.20	476.46	19.3	498.90	20.2
38° N	13.30	143.35	5.5	160.90	6.2
59° N	10.70	34.8 0	1.5	74.00	3.2
79° N	10.10	31.15	2.4	64.40	5.0
100° N	10.00	116.26	6.5	169.00	9.5
270° N	4.43	116.42	15.5	169.00	22.5
291° N	4.75	36.63	4.4	64.40	7.7
311° N	5.89	27.86	1.9	74.00	5.1
332° N	9.99	135.83	8.1	160.90	9.6

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EXHIBIT 1
METHOD OF MEASUREMENT OF ANTENNA IMPEDANCE

The KGNC Common Point Impedance was measured with a Delta Electronics type OIB-3 RF Impedance Bridge. The Bridge was driven with a Potomac Instruments type SD-31 generator. The null detector was a Potomac Instruments type RX-31. The RX-31 employs a coherent detector to detect a 39 hertz square wave modulating the carrier of the signal generator. This materially improves the accuracy of the null detection in the presence of severe interference. The RF Bridge was checked against General Radio precision resistance and reactance standards prior to the measurements and found to be within manufacturer's specifications.

The bridge was carefully balanced at each frequency with the unknown lead connected to the output lead of the RF ammeter and a measurement was made. The reactance reading was corrected for frequency prior to plotting and tabulating the data shown in Exhibit E-1.

The antenna coupling system schematic diagram showing the point of measurement is shown in Exhibit E-2.

The block diagram of the test setup is shown in Exhibit 3.

LIST OF INSTRUMENTS

INSTRUMENT	MANUFACTURER	RATED ACCURACY
RF Impedance Bridge	Delta Electronics Type OIB-3 Serial Number: 731	Resistance: 2.0% ± 1 Ohm Reactance: 2.0% ± 1 Ohm
RF Signal Generator	Potomac Instruments Type SD-31 Serial Number: 232	Frequency: 0.005%
RF Detector	Potomac Instruments Type RX-31 Serial Number 232	Frequency: 0.005%

All instruments were checked for proper calibration by the undersigned on the date of measurement and found to be within manufacturer's rated specifications.

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EXHIBIT E-1
TABULATION OF COMMON POINT IMPEDANCE
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS
AUGUST, 2001

The daytime and nighttime common point impedances were measured at the input to the common point bridge following completion of adjustment of the antenna system. The impedance of each pattern was adjusted to 50 Ohms, non-reactive at the common point meter location.

The Delta Electronics common point bridge calibration was checked against the Delta OIB-3 RF Impedance Bridge and found to agree within the manufacturer's stated accuracy at 710 kilohertz. The Delta Electronics common point bridge was used to maintain the common point impedance at 50 ohms during the subsequent field measurements.

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EXHIBIT E-2
RADIO STATION KGNC
710 KHZ, 10 KW, DA-2
AMARILLO, TEXAS

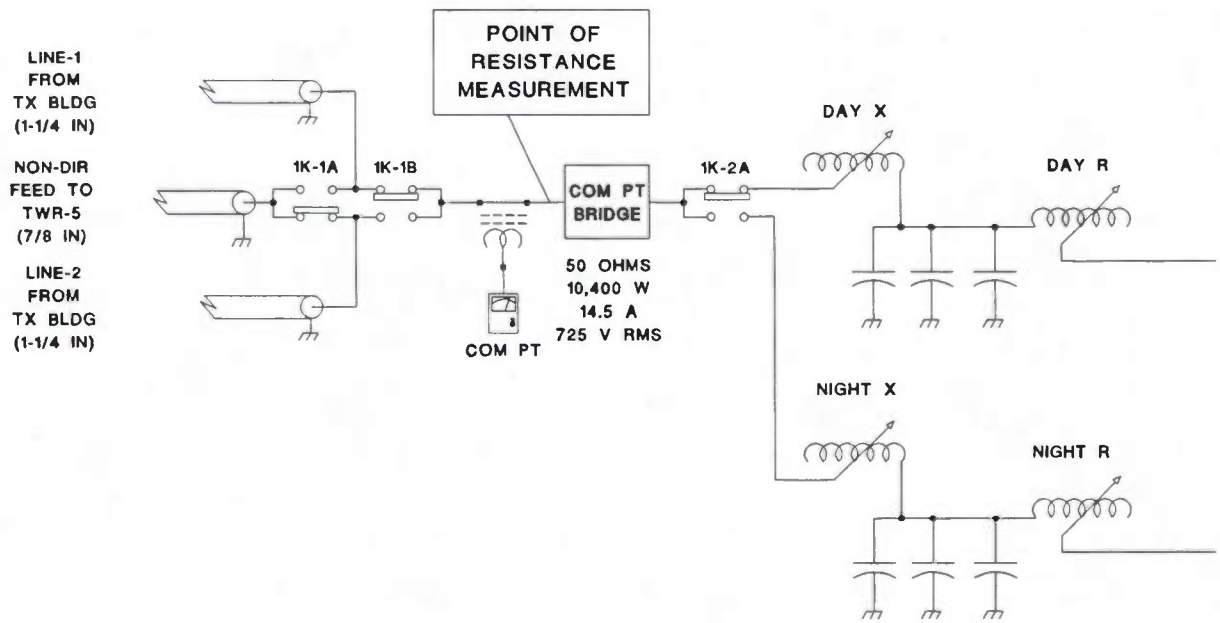

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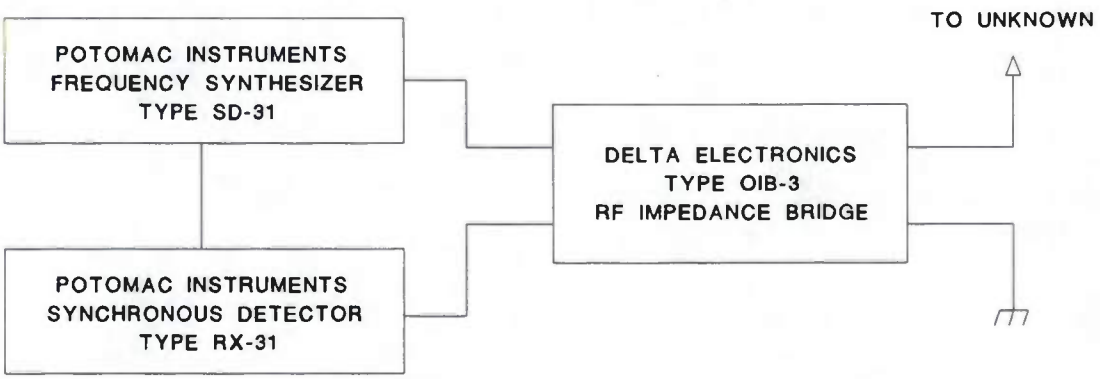
EXHIBIT-3
BLOCK DIAGRAM
RF TEST SETUP



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CERTIFICATION OF ENGINEER

I hereby state that:

I am President of Sellmeyer Engineering

The Firm of Sellmeyer Engineering has been retained by Morris Communications to prepare this Engineering Exhibit

I am a graduate of Arizona State University with the degree of Bachelor of Science in Engineering

I am a Registered Professional Engineer in the States of Ohio and Texas

My qualifications as an Engineer are a matter of record with the Federal Communications Commission

This Engineering Exhibit was prepared by me personally or under my direct supervision, and

All facts stated herein are true and correct to the best of my knowledge and belief.

J. S. Sellmeyer, P. E.

August 20, 2001

P. O. Box 356
McKinney, Texas 75070
214-495-9764