

COMMUNICATION TECHNOLOGY

Thank you for the opportunity to propose a solution for the TV project for WPBY. We are pleased to offer the following proposal for your review.

Since our inception in 1942, SPX Communication Technology (Dielectric Communications) has considered itself a solution-oriented engineering company, with pride in our depth of scientific knowledge, and our experience, both in TV and FM.

We are the nation's largest manufacturer of broadcast antennas, transmission line, and RF systems equipment, with over 60 years of continuous service to the broadcast community. We have over 80 Staff Engineers with over 1500 years of combined experience to their credit. Our entire company is committed to providing you the best in broadcast systems.

We look forward to this exciting project. A point to point response to Sections 1-5 is included. We have also included our standard Terms and Conditions of Sale including Warranty, which would apply to the extent they are not in conflict with the bid documents. Shipment is quoted as 45-60 days ARO, however we may be able to ship sooner depending upon the timing of the order. We are available to answer any questions or providing clarifications should they be required.

Kind regards,

A handwritten signature in cursive script that reads "David Stout".

David Stout
Quotes Representative

RECEIVED

2001 JAN -6 A 11: 37

STATE DIVISION
STATE OF WY



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

**Request for
 Quotation**

RFQ NUMBER
EBA326

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
**SHELLY MURRAY
 304-558-8801**

PROPERTY

RFQ COPY
 TYPE NAME/ADDRESS HERE

SPX Communication Technology
 22 Tower Road
 Raymond, ME 04071

C20082552 01

SHIP TO

EDUCATIONAL BROADCASTING
 AUTHORITY
 VARIOUS LOCALES AS INDICATED
 BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
11/29/2010				

BID OPENING DATE: **12/16/2010** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UQP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	EA		840-10	\$ 38,611.00	\$ 38,611.00
ANTENNAS AND ACCESSORIES, TELEVISION REQUEST FOR QUOTATION THE PURCHASING DIVISION IS SOLICITING BIDS FOR THE WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY TO PROVIDE (1) DIGITAL CHANNEL 34 SIDE MOUNT ANTENNA WITH RADOME, WHICH INCLUDES A TRANSMISSION LINE TO ADAPTER OF ANTENNA AND TOWER MOUNTING ADAPTERS. ATTACHMENTS: BID SHEETS PURCHASING AFFIDAVIT BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER. THE MODEL/BRAND/SPECIFICATIONS NAMED HEREIN ESTABLISH THE ACCEPTABLE LEVEL OF QUALITY ONLY AND ARE NOT INTENDED TO REFLECT A PREFERENCE OR FAVOR ANY PARTICULAR BRAND OR VENDOR. VENDORS WHO ARE BIDDING ALTERNATES SHOULD SO STATE AND INCLUDE PERTINENT LITERATURE AND SPECIFICATIONS. FAILURE TO PROVIDE INFORMATION FOR ANY ALTERNATES MAY BE GROUNDS FOR REJECTION OF THE BID. THE STATE RESERVES THE RIGHT TO WAIVE MINOR IRREGULARITIES IN BIDS OR SPECIFICATIONS IN ACCORDANCE WITH SECTION 148-1-4 (F) OF THE WEST VIRGINIA LEGISLATIVE RULES AND REGULATIONS.						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>David M. Stout</i>	TELEPHONE <i>207-655-8137</i>	DATE <i>1-5-11</i>
TITLE <i>Quotes Representative</i>	ADDRESS CHANGES TO BE NOTED ABOVE	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

GENERAL TERMS & CONDITIONS PURCHASE ORDER/CONTRACT

1. **ACCEPTANCE:** Seller shall be bound by this order and its terms and conditions upon receipt of this order.
2. **APPLICABLE LAW:** The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern all rights and duties under the Contract, including without limitation the validity of this Purchase Order/Contract.
3. **NON-FUNDING:** All services performed or goods delivered under State Purchase Orders/Contracts are to be continued for the terms of the Purchase Order/Contract, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods, this Purchase Order/Contract becomes void and of no effect after June 30.
4. **COMPLIANCE:** Seller shall comply with all federal, state and local laws, regulations and ordinances including, but not limited to, the prevailing wage rates of the WV Division of Labor.
5. **MODIFICATIONS:** This writing is the parties' final expression of intent. No modification of this order shall be binding unless agreed to in writing by the Buyer.
6. **ASSIGNMENT:** Neither this Order nor any monies due, or to become due hereunder may be assigned by the Seller without the Buyer's consent.
7. **WARRANTY:** The Seller expressly warrants that the goods and/or services covered by this order will:
(a) conform to the specifications, drawings, samples or other description furnished or specified by the Buyer; (b) be merchantable and fit for the purpose intended; and/or (c) be free from defect in material and workmanship.
8. **CANCELLATION:** The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
9. **SHIPPING, BILLING & PRICES:** Prices are those stated in this order. No price increase will be accepted without written authority from the Buyer. All goods or services shall be shipped on or before the date specified in this Order.
10. **LATE PAYMENTS:** Payments may only be made after the delivery of goods or services. Interest may be paid on late payments in accordance with the *West Virginia Code*.
11. **TAXES:** The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
12. **RENEWAL:** Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
13. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
14. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at www.state.wv.us/admin/purchase/vrc/hipaa.htm and is hereby made part of the agreement provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
15. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
16. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agency or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
17. **ANTITRUST:** In accepting this purchase order or signing this contract with any agency for the State of West Virginia, the vendor agrees to convey, sell, assign, or transfer to the State of West Virginia all rights, title, and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to vendor. Vendor certifies that this purchase order or contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law. Vendor further certifies that this purchase order or contract is in all respects fair and without collusion or fraud.



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 Department of Administration
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DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
11/29/2010				

BID OPENING DATE: **12/16/2010** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION BUILDING 15 2019 WASHINGTON STREET, EAST CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: 31</p> <p>RFQ. NO.: EBA326</p> <p>BID OPENING DATE: 12/16/2010</p> <p>BID OPENING TIME: 01:30 PM</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID: ----- 207-655-8173 -----</p> <p>CONTACT PERSON (PLEASE PRINT CLEARLY): ----- DAVID STOUT 207-655-8137 -----</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE David M. Stout	TELEPHONE 207-655-8137	DATE 1-5-11
TITLE Quotes Representative	ADDRESS CHANGES TO BE NOTED ABOVE	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

RFQ EBA326

The West Virginia Educational Broadcasting Authority is conducting a request for quotations for a digital capable Channel 34 broadcast television side mount antenna.

Overview:

West Virginia Public Broadcasting operates WPBY-DT in Huntington, WV. Two of three bays have failed on the existing antenna, and the station is operating at a reduced power under a Special Temporary Authority issued by the FCC. This project will place a temporary antenna in service in preparation for the replacement and upgrade of the primary antenna. The placement of the temporary antenna is time critical.

- 1 General Mechanical Specifications**
- 2 Transmission line**
- 3 Antenna Gain and Pattern**
- 4 Tower Specifics**
- 5 Attachments**
- 6 Shipping and Delivery**
- 7 Invoicing and Billing**

1 General Mechanical Specifications

- 1.1 All structural elements shall be designed and fabricated in accordance with TIA/EIA standard RS-222-G, Structural Standards for Steel Antenna, Towers, and Supporting Structures
- 1.2 All hardware shall be constructed of non-ferrous material (Brass, Copper, Stainless Steel, etc) or be Galvanized
 - 1.2.1 Steel elements shall be hot-dip galvanized in accordance with ASTM A123
 - 1.2.2 Zinc coating shall be applied with a minimum thickness of 0.002 inches (0.05 mm) in accordance with Metco Specification MS-108A
- 1.3 Vendor shall provide mounting adapters for each antenna
- 1.4 Vendor shall certify the directional pattern and gain for each antenna
- 1.5 All antennas, transmission lines, and connectors shall be rated for the power level indicated
- 1.6 All materials shall be new, no surplus or refurbished components are allowed
- 1.7 Antenna shall be supplied with a radome for operation in icing conditions

2 Transmission line

- 2.1 There is an existing 6 1/8 rigid coaxial line currently in service which terminates just below the top of steel on the tower.
 - 2.1.1 There is a 75 to 50 Ohm transformer at the termination point.
- 2.2 EBA can provide adapters to reduce to 3 1/8 and 1 5/8 EIA flange
- 2.3 Vendor shall provide transmission line from adapter to antenna
 - 2.3.1 Antenna input connector size and interconnecting line is at vendor's discretion
- 2.4 All components must be rated greater than 3000 watts DTV average power

3 Antenna Gain and Pattern

- 3.1 Antenna shall operate on Channel 34
- 3.2 Antenna shall exhibit a peak directional gain of 16 dB referenced to halfwave dipole
- 3.3 Antenna shall have a directional pattern indicated by polar plot and tabulation attached
- 3.4 Antenna shall be rated above 3000 watts DTV average power
- 3.5 Antenna shall have a 50 ohm impedance
 - 3.5.1 Antenna shall exhibit a VSWR of less than 1.1:1
- 3.6 Beam tilt shall be 1.2 degrees

4 Tower Specifics

4.1 The tower is a Stainless G7

4.2 Site drawing showing tower orientation is attached

4.2.1 Azimuth is reference to True North

4.3 Vendor shall provide mounts for proper azimuth orientation

4.3.1 Antenna tabulation and polar plot are attached

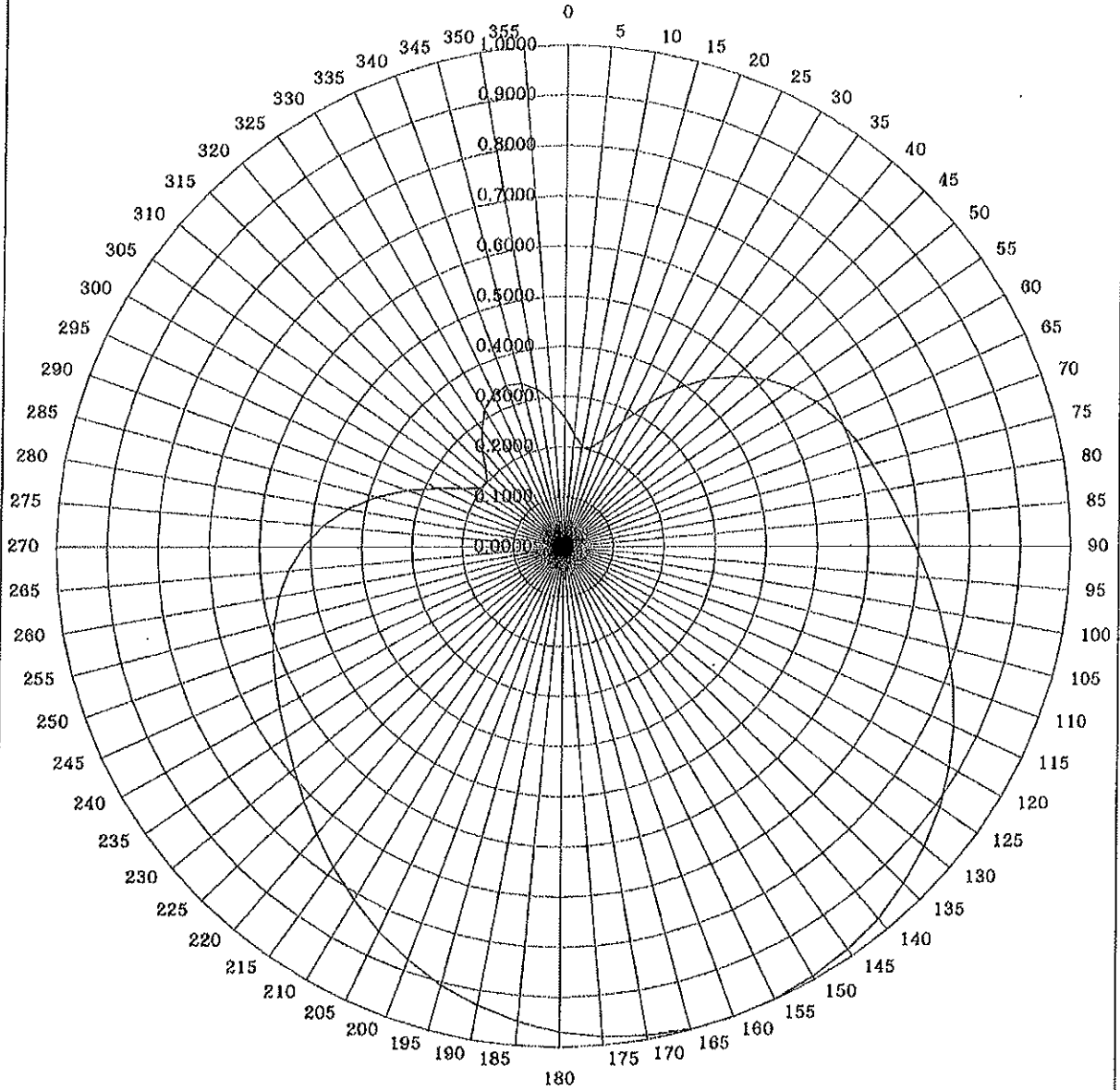
5 Attachments

5.1 Drawing of tower azimuth

5.2 Tabulation of gain

5.3 Polar plot of gain

RELATIVE FIELD AZIMUTH PATTERN



DIELECTRIC - 881-24
ORIENTED WITH BEAM MAXIMA AT 160°
MAXIMUM GAIN (HORIZONTAL AND VERTICAL PATTERN): 17.7 DBD

KESSLER & GEHMAN
TELECOMMUNICATIONS CONSULTING ENGINEERS
507 N.W. 60th Street, Suite C
Gainesville, Florida 32607

WPBY-DT
HUNTINGTON, WV

20030220

EXHIBIT E4B

WPBY-DT

HUNTINGTON, WEST VIRGINIA

TABULATION OF RELATIVE FIELD FOR PROPOSED DIRECTIONAL ANTENNA

<u>AZIMUTH</u>	<u>RELATIVE FIELD</u>	<u>AZIMUTH</u>	<u>RELATIVE FIELD</u>
N000°E	0.254	N180°E	0.970
N005°E	0.221	N185°E	0.952
N010°E	0.200	N190°E	0.931
N015°E	0.202	N195°E	0.907
N020°E	0.229	N200°E	0.879
N025°E	0.275	N205°E	0.849
N030°E	0.328	N210°E	0.816
N035°E	0.382	N215°E	0.783
N040°E	0.433	N220°E	0.751
N045°E	0.478	N225°E	0.720
N050°E	0.515	N230°E	0.691
N055°E	0.546	N235°E	0.666
N060°E	0.571	N240°E	0.645
N065°E	0.591	N245°E	0.626
N070°E	0.609	N250°E	0.609
N075°E	0.626	N255°E	0.591
N080°E	0.645	N260°E	0.571
N085°E	0.666	N265°E	0.546
N090°E	0.691	N270°E	0.515
N095°E	0.720	N275°E	0.478
N100°E	0.751	N280°E	0.433
N105°E	0.783	N285°E	0.382
N110°E	0.816	N290°E	0.328
N115°E	0.849	N295°E	0.275
N120°E	0.879	N300°E	0.229
N125°E	0.907	N305°E	0.202
N130°E	0.931	N310°E	0.200
N135°E	0.952	N315°E	0.221
N140°E	0.970	N320°E	0.254
N145°E	0.983	N325°E	0.288
N150°E	0.992	N330°E	0.317
N155°E	0.998	N335°E	0.335
N160°E	1.000	N340°E	0.341
N165°E	0.998	N345°E	0.335
N170°E	0.992	N350°E	0.317
N175°E	0.983	N355°E	0.288

MAXIMUM OF 1.000 AT N160°E
 MINIMUM OF 0.200 AT N010°E AND N310°E

KESSLER & GEHMAN
 TELECOMMUNICATIONS CONSULTING ENGINEERS
 507 N.W. 80th Street, Suite C
 Gainesville, Florida 32607

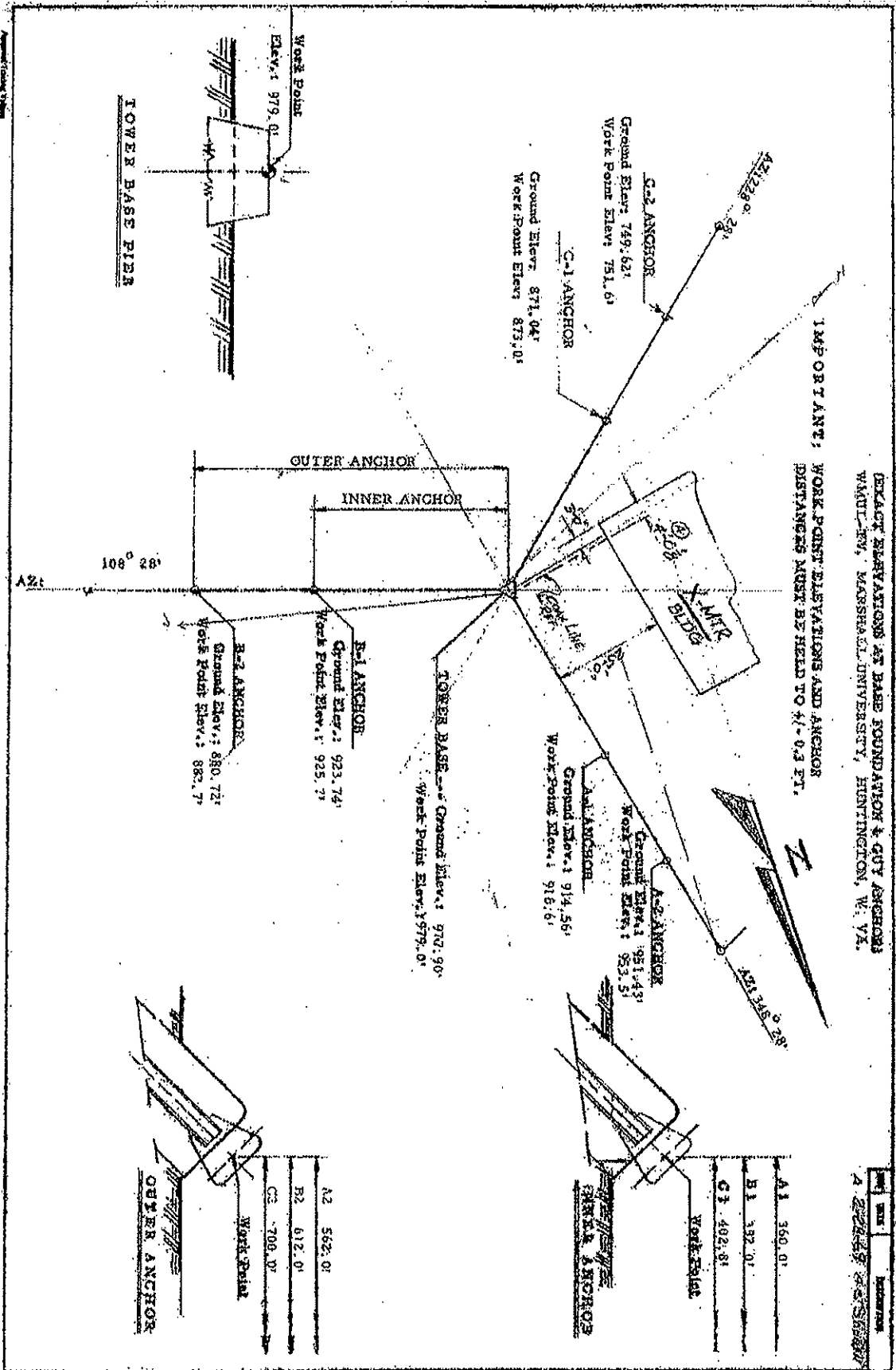
WPBY-DT
HUNTINGTON, WV
 20030220 EXHIBIT E4A

Showing A.P./Kant
 1-7-69

STIMMUS INC.
 PLOT PLAN

EXACT DIMENSIONS AT BASE FOUNDATION & GUY ANCHORS
 WASHINGTON, MASSACHUSETTS UNIVERSITY, HUNTINGTON, W. VA.

IMPORTANT: WORK POINT ESTIMATIONS AND ANCHOR
 DISTANCES MUST BE HELD TO +/- 0.3 FT.



Plot No.: 851-1
 Date: 1-7-69

NO.	DESCRIPTION
1	...
2	...
3	...

A1	360.0'
B1	192.0'
C1	402.81'

A2	562.0'
B2	612.0'
C2	700.0'

Work Point	
Work Point	
Work Point	

Vertical Scale 1/4" = 10'

6 Shipping and Delivery

6.1 Vendor shall provide shipping and it will be included in equipment pricing.

6.2 The receiving facility will be the WPBY Transmitter site

9283 Barker's Ridge Church Road

Milton, WV 25541

6.3 Shipper shall provide 24 hours notice to arrange off-loading

Contact Dave McClanahan

600 Capitol Street

Charleston, wv 25302

Office 304-556-4914

Cell 304-533-6808

Backup Jeff Queen 304-533-6810

Backup Ernie Maggard 304-533-6811

7 Invoicing and Billing

7.1 The billing address is:

West Virginia Public Broadcasting

PO Box 9004

Beckley, wv 25802

Jeff Bennett

304-254-7899

EBA326 Pricing Page Digital Channel 34 Sidemount Television Broadcast Antenna

<u>Quantity</u>	<u>Description</u>	<u>Unit Price</u>	<u>Extended Price</u>
1	Digital Channel 34 Side Mount antenna with Radome	\$ 30,779.50	\$ 30,779.50
1	Transmission Line (from main tower transmission line to adapter of antenna)	\$ 4,427.25	\$ 4,427.25
1 lot	Antenna to tower mounting adaptors	\$ 3,404.25	\$ 3,404.25
Total			\$ 38,611.00

Shipping shall be included in equipment pricing.

David M. Stout
Signature of Vendor Representative Submitting Bid

1-5-11

Date

State of West Virginia

VENDOR PREFERENCE CERTIFICATE

Certification and application* is hereby made for Preference in accordance with West Virginia Code, §5A-3-37. (Does not apply to construction contracts). West Virginia Code, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the West Virginia Code. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

- 1. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or, Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
2. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
3. Application is made for 2.5% resident vendor preference for the reason checked: Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
4. Application is made for 5% resident vendor preference for the reason checked: Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked: Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: _____ Signed: _____

Date: _____ Title: _____

*Check any combination of preference consideration(s) indicated above, which you are entitled to receive.

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

EXCEPTION: The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code §61-5-3*), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

WITNESS THE FOLLOWING SIGNATURE

Vendor's Name: _____

Authorized Signature: _____ Date: _____

State of _____

County of _____, to-wit:

Taken, subscribed, and sworn to before me this ____ day of _____, 20__.

My Commission expires _____, 20__.

AFFIX SEAL HERE

NOTARY PUBLIC _____



State of West Virginia
 Department of Administration
 Purchasing Division
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 Charleston, WV 25305-0130

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12/10/2010				

BID OPENING DATE: **01/06/2011** BID OPENING TIME: **01:30PM**

LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
----- ADDENDUM NO. 1 -----						
THIS ADDENDUM IS ISSUED TO ALLOW FOR THE SUBMISSION OF QUESTIONS.						
TECHNICAL QUESTIONS MUST BE SUBMITTED IN WRITING TO SHELLY MURRAY IN THE WEST VIRGINIA PURCHASING DIVISION VIA MAIL AT THE ADDRESS SHOWN AT THE TOP OF THIS RFQ, VIA FAX AT 304-558-4115, OR VIA E-MAIL AT SHELLY.L.MURRAY@WV.GOV. DEADLINE FOR ALL TECHNICAL QUESTIONS IS 12/20/2010 AT THE CLOSE OF BUSINESS. ALL TECHNICAL QUESTIONS RECEIVED, IF ANY, WILL BE ADDRESSED BY ADDENDUM AFTER THE DEADLINE.						
THE BID OPENING DATE HAS BEEN EXTENDED:						
FROM: 12/16/2010 TO : 01/06/2011						
0001	1	EA		840-10		
ANTENNAS AND ACCESSORIES, TELEVISION						
EXHIBIT 10						
REQUISITION NO.: EBA326						
ADDENDUM ACKNOWLEDGEMENT						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>David M. Stout</i>	TELEPHONE 207-655-8137	DATE 1-5-11
TITLE <i>Quotes Representative</i>	ADDRESS CHANGES TO BE NOTED ABOVE	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

**GENERAL TERMS & CONDITIONS
REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)**

1. Awards will be made in the best interest of the State of West Virginia.
2. The State may accept or reject in part, or in whole, any bid.
3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
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State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
EBA326

PAGE
2

ADDRESS CORRESPONDENCE TO ATTENTION OF
SHELLY MURRAY
304-558-8801

RFQ COPY
 TYPE NAME/ADDRESS HERE

SPX Communication Technology
 22 Tower Road
 Raymond, ME 04071

EDUCATIONAL BROADCASTING
 AUTHORITY
 VARIOUS LOCALES AS INDICATED
 BY ORDER

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
12/10/2010				

BID OPENING DATE: **01/06/2011** BID OPENING TIME **01:30PM**

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
<p>I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.</p> <p>ADDENDUM NO. 'S:</p> <p>NO. 1 ... <i>David M. Stout</i></p> <p>NO. 2</p> <p>NO. 3</p> <p>NO. 4</p> <p>NO. 5</p> <p>I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.</p> <p>VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.</p> <p><i>David M. Stout</i> SIGNATURE <i>SPX Communication Technology</i> COMPANY <i>1-5-11</i> DATE</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>David M. Stout</i>	TELEPHONE <i>207-655-8137</i>	DATE <i>1-5-11</i>
TITLE <i>Quotes Representative</i>	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'



State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
EBA326

PAGE
3

ADDRESS CORRESPONDENCE TO ATTENTION OF
SHELLY MURRAY
304-558-8801

RFQ COPY

TYPE NAME/ADDRESS HERE

V
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SPX Communication Technology
 22 Tower Road
 Raymond, ME 04071

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T
O

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DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
12/10/2010				

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LINE	QUANTITY	UOP	CAT NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.						
----- END OF ADDENDUM NO. 1 -----						
***** THIS IS THE END OF RFQ EBA326 ***** TOTAL:						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>David M. Stout</i>	TELEPHONE 207-655-8137	DATE 1-5-11
TITLE <i>Quotes Representative</i>	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

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State of West Virginia
 Department of Administration
 Purchasing Division
 2019 Washington Street East
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 Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER
 EBA326

PAGE
 1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
 SHELLY MURRAY
 304-558-8801

VENDOR
 *C20082552 01 800-341-9678
 DIELECTRIC COMMUNICATIONS
 PO BOX 949
 RAYMOND ME 04071

SHIP TO
 EDUCATIONAL BROADCASTING
 AUTHORITY
 VARIOUS LOCALES AS INDICATED
 BY ORDER

RECEIVED
 DEC 28 2010
 JDC
 LDCOM

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
12/23/2010				

BID OPENING DATE: 01/06/2011 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
----- ADDENDUM NO. 2 -----						
THIS ADDENDUM IS ISSUED TO ADDRESS THE QUESTIONS RECEIVED PRIOR TO THE QUESTION SUBMISSION DEADLINE OF 12/20/2010 AS ESTABLISHED IN ADDENDUM NO. 1.						
0001	1	EA		840-10		
ANTENNAS AND ACCESSORIES, TELEVISION						
EXHIBIT 10						
REQUISITION NO.: EBA326						
ADDENDUM ACKNOWLEDGEMENT						
I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.						
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NO. 1 <i>David M. Stout</i>						
NO. 2 <i>David M. Stout</i>						
NO. 3						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE <i>David M. Stout</i>	TELEPHONE 207-655-8137	DATE 1-5-11
TITLE <i>Quotes Representative</i>	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

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4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
5. Payment may only be made after the delivery and acceptance of goods or services.
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Request for Quotation

RFQ NUMBER
EBA326

PAGE
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EBA326
Addendum No. 2

QUESTION:

Transmission Line section 2.3 – how long of a cable section would we need to supply?

RESPONSE:

The 6 1/8" line terminates at approximately 1010 feet AGL. The antenna Center of Radiation is 960 Feet. This provides a vertical difference of 50 feet. The actual length would vary depending on the antenna being end fed or center fed. The vendor shall provide a connecting line 100 feet in length with one connector factory attached with the other connector provided to be field installed.

QUESTION:

Tower Specifics section 4.3 – What is the diameter of the G7 tower leg that we would be mounting too?

RESPONSE:

The diameter is 5 inches

QUESTION:

What is the proposed centerline of the temporary antenna relative to the top of the existing 6-1/8" rigid coaxial line?

RESPONSE:

The 6 1/8" line terminates at approximately 1010 feet AGL. The antenna Center of Radiation is 960 Feet. This provides a vertical difference of 50 feet. The actual length would vary depending on the antenna being end fed or center fed. The vendor shall provide a connecting line 100 feet in length with one connector factory attached with the other connector provided to be field installed.

QUESTION:

Will the proposed antenna be mounted off the tower leg or face? Or is this for the antenna supplier to decide? What are the sizes of each (tower leg and face)?

RESPONSE:

The vendor has discretion regarding face or leg mount. Either method must have reinforcement to prevent rotation of the antenna. Mounting can be either face mount or leg mount at vendor's discretion. The tower leg diameter is 5 inches. The G7 is a 7 foot face tower

QUESTION:

Can the bidder, so long as the terms don't conflict with the WV rules, provide the terms of its warranty, including duration?

RESPONSE:

Vendor shall provide a one year warranty parts and labor to repair FOB factory. Removal and reinstallation excluded.

RFQ # EBA326
West Virginia Educational Broadcasting Authority
WPBY-DT Huntington, WV

Dielectric Communications Point-by-Point Response

Section 1. General Mechanical Specifications

- 1.1 Comply. WPBY to supply 222-G Site Specific Factors of Basic Windspeed; Design Ice Thickness; Exposure Category; Topographic Category; and Structure Class
- 1.2 Comply
- 1.2.1 Comply
- 1.2.2 Comply as appropriate for the type of product to be provided.
- 1.3 Comply
- 1.4 Comply. Specifications within.
- 1.5 Comply
- 1.6 Comply
- 1.7 Comply, Proposed Antenna to be furnished with a "full cylindrical radome", not slot covers only.

Section 2. Transmission Line

- 2.1 Understood
- 2.1.1 Understood
- 2.2 Understood
- 2.3 Comply, a 2-1/4" Flexible Line is proposed.
- 2.3.1 Understood, 1-5/8" Connectors to be utilized at both ends.
- 2.4 Comply

Section 3. Antenna Gain and Pattern

- 3.1 Comply
- 3.2 Comply
- 3.3 Understood. Dielectric has proposed a cost effective, low power type antenna with the azimuth pattern as indicated within.
- 3.4 Comply
- 3.5 Comply
- 3.5.1 Comply
- 3.6 Comply

Section 4. Tower Specifics

- 4.1 Understood
- 4.2 Understood
- 4.2.1 Understood
- 4.3 Comply
- 4.3.1 Understood

Section 5. Attachments

- 5.1 Understood
- 5.2 Understood
- 5.3 Understood

Addendum No. 2

All Q&A Understood



COMMUNICATION TECHNOLOGY

22 Tower Road
Raymond, ME 04071
Phone: 207-655-4555
Fax: 207-655-8173
Internet: www.spxcomtech.com



Quotation

Customer
STATE OF WEST VIRGINIA
EDUCATIONAL BROADCASTING AUTH
600 CAPITOL STREET
CHARLESTON WV 25301-1223
USA

Information
Quote Number: 2022558
Quote Date: 01/04/2011
Customer No.: 110148
Currency: USD
Validity Start Date: 01/04/2011
Validity End Date: 03/06/2011

Ship-To-Party
STATE OF WEST VIRGINIA
EDUCATIONAL BROADCASTING AUTH
600 CAPITOL STREET
CHARLESTON WV 25301-1223
USA

Header Information
Terms of payment: Net due in 30 days
** PAYMENT TERMS ARE SUBJECT TO CHANGE PENDING CREDIT APPROVAL **
Incoterms: FOB Raymond ME 04071PPD
LEAD TIME: 45 TO 60 DAYS ARO

Item	Material Number / Cat. Num / Description	Quantity	Unit Price	Amount
10	11000000077/ ANT TLP-16-R S250 WPBY CH34 SPECIFICATIONS PER TECHNICAL PROPOSAL C-04485. INCLUDES "FULL" NON PRESSURIZED RADOME OF COLOR IMPREGNATED MATERIAL.	1 EA	38,566.00 Item Discount %25.000- Item NET Price	38,566.00 -9,641.50 28,924.50
20	11000000077/ MOUNTS TLP16-R WPBY STANDARD MOUNTING BRACKETS FOR ITEM 10. CUSTOMER MUST PROVIDE ALL REQUIRED TOWER DETAIL/DRAWINGS WITHIN 10 DAYS OF ORDER, INCLUDING TOWER ORIENTATION WITH RESPECT TO TRUE NORTH.	1 EA	4,539.00 Item Discount %25.000- Item NET Price	4,539.00 -1,134.75 3,404.25
30	RFLEX/ FLEX LINE RUN With the following configuration FACTORY INSTALL BOT CONN?: NO SELECT TOP CONNECTOR: 1 5/8" MALE GPASS CONN EIA 2" SELECT BOTTOM CONNECTOR: 1 5/8" MALE GPASS CONN EIA 2" ENTER VERTICAL LENGTH: 100 Foot ENTER HORIZONTAL LENGTH: 0 Foot SELECT CHANNEL: Channel 34 ENTER DESIRED FREQUENCY: 593.0 MHz ARE MOUNTING REQMTS KNOWN?: YES ATTENUATION (dB): 0.44 dB EFFICIENCY (%): 90.37 % SYSTEM MAX AVG PWR (KW): 6.4 KW	1 EA		

Item 40 on next page



COMMUNICATION TECHNOLOGY

22 Tower Road
Raymond, ME 04071
Phone: 207-655-4555
Fax: 207-655-8173
Internet: www.spxcomtech.com



Quotation

Quote Number 2022558

Quote Date 01/04/2011

Customer No. 110148

Item	Material Number / Cat. Num / Description	Quantity	Unit Price	Amount
40	11000002352/ FLEXLINE 2-50 FL-57 DIELECTRIC	100 FT	42.00	4,200.00
			Item Discount %25.000-	-1,050.00
			Item NET Price	3,150.00
	FL-57, 2 1/4" AIR SEMIFLEXIBLE TRANSMISSION LINE			
50	11000002356/ FLEXLINE CONN 1-50 MPASS FL-57	2 EA	543.00	1,086.00
			Item Discount %25.000-	-271.50
			Item NET Price	814.50
	57-EM158P 1 5/8" EIA MALE CONNECTOR FOR 2 1/4" FL-57 LINE			
60	11000006623/ FLEXLINE CONN INSTALL 2 1/4-3 1/8" AIR	1 EA	54.00	54.00
70	11000002362/ FLEXLINE BTFLY HNGR FL-57 10PK	4 EA	44.00	176.00
			Item Discount %25.000-	-44.00
			Item NET Price	132.00
	HBF-57 2 1/4" FLEXLINE BUTTERFLY HANGER			
80	11000002445/ FLEXLINE RMA5 10PK	4 EA	55.00	220.00
			Item Discount %25.000-	-55.00
			Item NET Price	165.00
	RMA5: ROUND MEMBER ADAPTER FOR 5-6" DIA LEG/POLE			
90	11000002360/ FLEXLINE HOISTING GRIP FL-57	1 EA	115.00	115.00
			Item Discount %25.000-	-28.75
			Item NET Price	86.25
	HSTG-57 2 1/4" FLEXLINE			
100	11000002385/ FLEXLINE WEATHERPROOF KIT - 221213	1 EA	34.00	34.00
			Item Discount %25.000-	-8.50
			Item NET Price	25.50
	WPKIT: CONNECTOR WEATHERPROOF KIT			
110	RFREIGHT/ FREIGHT, SHIPPING, AND HANDLING	1 EA	1,855.00	1,855.00
	Note: The quoted price is subject to change to reflect increases in fuel costs, shipper surcharges, etc.			
	This is for freight only and excludes any off loading of equipment unless specified. If off loading is required please notify the customer service rep.			
	SHIPPING LTL TRUCK FROM RAYMOND, ME 04071 TO MILTON, WV 25541 TRANSIT TIME 4 DAYS			
			Items total:	38,611.00
			Total Tax	
			Final amount:	38,611.00



COMMUNICATION TECHNOLOGY

22 Tower Road
Raymond, ME 04071
Phone: 207-655-4555
Fax: 207-655-8173
Internet: www.spxcomtech.com



Quotation

Quote Number 2022558

Quote Date 01/04/2011

Customer No. 110148

ACCEPTANCE:

By execution below, or by sending a Purchase Order referencing this proposal, the undersigned accepts this proposal to furnish equipment and services on this schedule subject to the Terms and Conditions of Sale for Broadcast, Lighting, Monitoring and Related Products and Services (Rev P)("Dielectric Terms") attached hereto and/or incorporated by reference herein, and authorizes Dielectric to proceed with the procurement and fabrication of this equipment. Your acceptance of this proposal is conditioned upon your acceptance of the Dielectric Terms and your agreement to be bound by and comply with the Dielectric Terms. Dielectric's failure to object to provisions contained in any Purchase Order or other document from you shall not be construed as a waiver by Dielectric of the Dielectric Terms or an acceptance of any such provisions. Any conflicting or additional terms or conditions set forth in a Purchase Order or other document from you are not binding upon Dielectric, and Dielectric hereby expressly objects thereto.

Signature _____ Date _____

Requested Ship Date: _____

This requested ship date is subject to review by Dielectric. If Dielectric can not meet the requested ship date, you will be contacted to work out a mutually acceptable shipment date. Dielectric requires that the customer take ownership of the product no later than 14 calendar days after the agreed-upon ship date.

Terms and Conditions of Sale for Broadcast, Lighting, Monitoring and Related Products Rev P (Products)

General Terms and Conditions

1. DEFINITIONS.

- a) *Terms* means these Terms and Conditions of Sale for Broadcast, Lighting, Monitoring and Related Products;
- b) *Proposal* means the proposal or quotation document provided to Customer by DC into which these Terms are incorporated by reference;
- c) *Customer* means the purchaser to whom the Proposal is addressed and to whom these Terms apply, including, where applicable, all individual and/or corporate guarantors;
- d) *DC* means Dielectric Communications (a division of SPX Corporation);
- e) *Custom-built* means equipment set forth in the Proposal which is built by DC to Customer's specifications;
- f) *Product* means the applicable broadcast, lighting, monitoring and related equipment to be sold by DC to Customer as set forth in the Proposal;
- g) *Price* means the price to be paid by Customer for the Products and/or Services listed in the Proposal, including any changes agreed to in writing by the parties.
- h) *Shipping Date* means the shipping date(s) that DC has communicated to customer
- i) *Services* means any consulting services to be furnished by DC to Customer as set forth in the Proposal;
- j) *Rigging* means the labor, materials and machinery required to remove or install any Products.
- k) *Low-Power Broadcast Product* means any Broadcast Product identified as a Low Power Product in the Proposal or in DC's Product Catalog.

PROPOSAL, ACCEPTANCE AND GOVERNING PROVISIONS. A Proposal will automatically expire if not accepted by Customer within sixty (60) days from its date or any extension of such date approved in writing by DC, and Customer's acceptance of the Proposal, by purchase order or signature, shall constitute Customer's offer and will evidence Customer's intent that the sale of the Products and the furnishing of any Services shall be governed by the Proposal and the Terms. **DC's acceptance of Customer's offer is conditioned upon Customer's acceptance of the Terms set forth herein and Customer's agreement to be bound by and comply with the Terms. The Terms, the Proposal, and all referenced attachments constitute the entire agreement between Customer and DC ("Agreement"), and no amendment or modification shall be binding on DC unless in writing and signed by an officer of DC. The failure of DC to object to provisions contained in any purchase order or other document of Customer's shall not be construed as a waiver by DC of the Terms or an acceptance of any such provisions. Any conflicting or additional terms or conditions set forth by Customer in a purchase order or other document are not binding upon DC, and DC hereby expressly objects thereto.** No purchase order shall be binding upon DC until accepted by a written acknowledgment by an authorized representative of the company.

2. **PRICES.** All Prices are subject to adjustment by DC if: (a) the required down payment has not been made with Customer's acceptance of the Proposal, or (b) shipment is delayed by Customer beyond the Shipping Date(s). Prices for Products do not include any special packing or crating materials, which may be required for Custom-built equipment. All costs of special packing shall be paid by Customer and shall be paid prior to shipment or as soon as all packing costs are determined.
3. **TAXES.** The Prices do not include any applicable foreign, federal, state or local taxes. The amount of such taxes payable or paid by or assessed against DC will be billed to, and shall be paid by, Customer. No tax exemption shall be recognized unless Customer has completed and returned to DC the Tax Questionnaire provided with the Proposal.
4. **PAYMENT TERMS.** (a) The Price for all Products shall be paid to DC in accordance with the payment schedule shown in the Proposal. Absent specific agreement to the contrary, all amounts owed to DC, including but not limited to the Price for Services hereunder, shall be payable within 30 days after shipment; provided, however, that if shipment of the Products is delayed beyond the Shipping Date by the action or inaction of Customer, payment will be due 30 days after the Shipping Date. (b) Overdue payments shall accrue interest at the rate of 16% per annum (or the maximum percentage allowed by applicable law, if lower) from the due date. Customer shall also be required to pay DC any and all collection costs and expenses DC incurs (including without limitation reasonable attorneys' fees) to collect overdue payments. (c) DC may make partial shipments of Products, and pro-rata payments shall be due for such partial shipments of Products. (d) All down payments shall be made to Dielectric Communications, P.O. Box 277883, Atlanta, GA 30384-7883, unless otherwise directed in writing by DC. DC may, at its option, decline to deliver Products or to provide Services, or may stop shipment of Products in transit, whenever, for any reason, DC has concerns about a Customer's financial status. In such event, DC may require payment in full prior to shipping a Product or providing any Services.
5. **DELIVERY.** (a) DC will deliver Products FOB point of shipment, with delivery to the initial carrier constituting delivery to Customer. All transportation charges will be Customer's responsibility; however, upon Customer's request, DC will prepay transportation charges for which Customer shall reimburse DC (together with an administrative fee payable to DC). Customer shall have sole responsibility for filing any claims with any carrier for delay, loss or damage. (b) Any Shipping Dates are predictions made by DC of the times within which it is likely the Products will be shipped; however, due to the difficulties inherent in predicting future delivery dates or periods, DC does not promise, guarantee or otherwise obligate itself to have the Products shipped on or before that time. **DC will endeavor to meet the Shipping Date(s), but shall not be liable in damages or otherwise, nor shall Customer be relieved of performance, because of failure to meet them.** However, as to Products which, without Customer's fault, have not been shipped to Customer within three (3) months after the Shipping Date(s) applicable to such Products, Customer may, by providing written notice to DC, delete from this Agreement any such Products that have not been shipped to Customer before DC receives Customer's written notice of deletion, and the Price shall be proportionately reduced. **The foregoing right is Customer's exclusive remedy for any delays in shipment.** DC may, in its discretion, accept standard Products returned for credit (shipping prepaid) within 60 days of receipt subject to a restocking fee.
6. **DELIVERY TO STORAGE.** Customer agrees to authorize and accept shipment of Products on the Shipping Date(s). To the extent Customer is unable or otherwise fails to accept shipment of Products on the Shipping Date(s), or if Customer has failed to timely provide DC with payment due and delivery instructions, Customer agrees that DC is authorized to deliver the Products into storage and bill Customer as though shipment had been made to Customer, subject to DC's security interest. Title to such Product(s) and the risk or loss thereof or damage thereto shall pass to Customer when placed in storage. Customer shall be responsible for all storage charges and expenses and, to the extent any storage charges and expenses are incurred by DC, Customer shall reimburse DC for such storage charges and expenses (together with an administrative fee payable to DC).

7. **TITLE, INSURANCE AND RISK OF LOSS.** Subject to DC's security interest, and except as provided in Section 6, both title to the Products and risk of loss or damage passes to Customer upon delivery to the initial carrier.
8. **SECURITY INTEREST.** Until the Price has been paid in full, DC reserves, and Customer hereby grants to DC, a first priority security interest under the Uniform Commercial Code in the Products. Customer also agrees to execute such documents and to take such other actions as are reasonably requested by DC to perfect its security interest in the Products. DC further retains a right of set-off against any obligations owing by Customer, whether or not related to this order.
9. **PATENT LIABILITY.** Customer agrees that DC has the right to defend, or at its option to settle, and DC agrees, at its own expense to defend or, at its option, to settle, any claim, suit or proceeding brought against Customer on the issue of infringement of any United States patent by any Product, or any part thereof, supplied by DC to Customer under this Agreement. DC agrees to pay, subject to the limitations hereinafter set forth in this paragraph, any final judgment entered against Customer on such issue in any such suit or proceeding defended by DC. Customer agrees that DC at its sole option shall be relieved of the foregoing obligations unless Customer notifies DC promptly in writing of any such claim, suit or proceeding, and at DC's expense gives DC proper and full information and assistance to settle and/or defend any such claim, suit or proceeding. If the Product, or any part thereof furnished by DC to Customer hereunder becomes, or in the opinion of DC may become, the subject of any claim, suit or proceeding for the infringement of any United States patent, or in the event of any adjudication that such Product or part infringes any United States patent, or if the use, lease or sale of such Product or part is enjoined, DC may at its option and its expense: (a) procure for Customer the right under such patent to use, lease or sell, as appropriate, such Product or part, or (b) replace such Product or part, or (c) modify such Product or part, or (d) remove such Product or part and refund the aggregate payments and transportation costs paid therefore by Customer, less a reasonable sum for use, damage and obsolescence. DC shall not be liable for any costs or expenses incurred without DC's written authorization. **The foregoing constitutes the entire liability of DC and Customer's sole and exclusive remedy for intellectual property infringement related to the Products. Notwithstanding the foregoing, the remedy described in this paragraph shall not apply to any suit or proceeding alleging infringement resulting from or related to DC's compliance with Customer's specifications or design or the use of Products in combination with other goods or materials. In no event shall DC's total liability to Customer under, or as a result of compliance with, the provisions of this section exceed the aggregate sum paid to DC by Customer for the allegedly infringing Product or part.**
10. **WARRANTY.** Except as otherwise specified in the Proposal or other written material provided to Customer, DC warrants new Products purchased by Customer hereunder to be free from defects in material and workmanship, as follows:
- Broadcast Products** – The warranty period for any Broadcast Product, except for Low-Power products, is five (5) years from the date of shipment. The warranty period for any Low-Power Broadcast Product is one (1) year from the date of shipment.
 - Lighting Products** – The warranty period for lighting Products is one (1) year from the date of shipment for halogen/incandescent light source equipment, two (2) years from date of shipment for control devices and strobe light source equipment, or five (5) years from the date of shipment for LED light source equipment.
 - Monitoring Products** – The warranty period for monitoring Products shall be one (1) year from the date of shipment.
 - Repaired or Refurbished Products** – The warranty period for repaired or refurbished Products (other than Products repaired under warranty) shall be ninety (90) days from date of shipment, unless otherwise provided in the applicable Proposal.

All Products –

DC shall, during the applicable warranty period and subject to the right to inspect such Product, repair or replace, at DC's sole discretion, such warranted Product as is found to be defective, subject to the conditions of these Terms. For returns, the warranted Product must be properly authorized for return (with a Return Materials Authorization (RMA) number), packed and returned to DC, transportation prepaid. Replacement parts will be sent only upon receipt of a valid purchase order. If determined by DC to be a valid warranty claim, the purchase order obligation will be voided; otherwise, Customer shall be responsible for the purchase order obligation.

For products that cannot reasonably be returned, Customer has the obligation to provide photographic or other evidence to document a claim. DC may agree to send a representative to the Customer's site to inspect the warranted Product if Customer has demonstrated a sufficient basis for concluding that there is, in fact, a Product defect. In the event that DC sends such a representative, and in the event that the inspection determines that the Product is not, in fact, defective, then Customer shall compensate DC at its standard rates for all of its direct and indirect costs for the inspection.

Replacement of any original DC parts with non-DC parts will take the Products out of compliance and void this warranty.

If DC fails to repair or replace any defective Product, Customer agrees that the exclusive measure of damages shall be the reasonable cost of the repair or replacement of the defective product at the time. DC's warranty obligation is conditioned on Customer's payment of all amounts due under these terms as well as Customer's compliance with its obligations hereunder.

Repair or replacement of defective Products does not re-start the warranty periods defined above; the warranty period commences upon initial delivery or installation of the original Product, as described above.

The Customer's warranty rights under these Terms shall apply only if DC receives prompt written notice of any alleged defect within the applicable warranty period defined above, the Product has been operated in accordance with DC's written instructions, and DC's examination discloses that such Product has not been damaged through accident or negligence, misuse, alteration, or improper maintenance, repair, or installation.

No warranty shall apply: (a) to any Products that have been repaired, worked upon, disassembled or altered by persons not authorized by DC in such a manner as to injure the stability or reliability of such Products, (b) to any Products that have been subject to misuse, negligence or accident other than by DC, (c) to any Products that have not been connected, installed, used, maintained, inspected or adjusted by appropriately qualified personnel in accordance with the written instructions furnished by DC, (d) with respect to any Product that has had its serial number altered, effaced or removed, (e) to damage resulting from: Force Majeure; intentional acts, such as sabotage, terrorism, or vandalism; accidents; extreme weather, the impact of ambient chemicals, and/or flying objects, (f) to ordinary wear and tear resulting from use and exposure or (g) to any party other than the original purchaser of the Products.

The foregoing warranties are in lieu of, and DC expressly disclaims, all other warranties, express or implied in fact or by law, including without limitation all warranties of merchantability or fitness for a particular purpose or otherwise, and the foregoing warranties state DC's entire and exclusive liability, and Customer's sole and exclusive remedy, in connection with the sale or furnishing of service, products or parts, their design, suitability for use, installation or operation. Without limiting the foregoing, DC shall in no event be liable for

rigging charges connected with repair or replacement of defective Products or Services covered by these warranties, or for any third party engineering or consulting fees. Equipment furnished by DC but not bearing its trademark or trade name shall carry no warranties, except those, if any, extended by and enforceable against the manufacturer at the time of delivery to DC.

LIMITATION OF LIABILITY. DC shall not be liable under any theory of relief, including without limitation breach of warranty, breach of contract, tort (including negligence), strict liability, or otherwise, arising out of or related to these Terms or products or services provided hereunder or DC's acts or omissions for: (i) any indirect, incidental, special or consequential damages whatsoever (including without limitation, loss of anticipated value of a business or its reputation) or (ii) any damage or loss in excess of the price actually paid by Customer. Any action by Customer must be commenced within one year after the cause of action has accrued.

12. **FORCE MAJEURE.** DC shall not be liable for delay in performance or failure to perform any of its obligations, if the delay or failure results directly or indirectly from Force Majeure. Force Majeure means any law, order, regulation, direction, request, action or failure to act of Customer or of any government having jurisdiction over DC, its subcontractors and/or its suppliers, or of any department, agency or corporation of one or more of such governments; failure or delay of transportation; suspension or cancellation of any required license; insurrection; riots, national emergencies; war; acts of public enemies, strikes or other labor difficulties; inability to obtain necessary labor, manufacturing facilities, materials or components from DC's usual sources; fires, floods, earthquakes, lightning or other catastrophes; acts of God; extreme weather conditions; or any cause of like or different kind beyond the control of DC. DC shall notify Customer in writing if performance of any of its obligations under this Agreement is delayed by reasons of Force Majeure.
13. **PROPRIETARY INFORMATION.** DC retains title to and ownership of all engineering and production prints, drawings, technical data, and other information and documents that relate to the Products and Services sold to Customer and any intellectual property rights embodied therein. Unless advised by DC in writing to the contrary, all such information and documents disclosed or delivered by DC to Customer are to be deemed proprietary to DC and shall be used by Customer solely for the purpose of inspection, installation, maintenance and use of the Products purchased hereunder and not used by Customer for any other purpose. Customer shall maintain such proprietary information with a standard of care no less stringent than it uses with its own confidential information.
14. **TERMINATION/SUSPENSION.** Without prejudice to its other rights, DC may immediately terminate this Agreement by giving notice to Customer or suspend the performance of DC's obligations if Customer:
- Breaches this Agreement and fails to remedy that breach within 14 days of a request by DC; or
 - Ceases business operations, is unable to pay Customer's debts as they fall due, makes an assignment for the benefit of creditors, commences winding-up, has a receiver or liquidator appointed over any of Customer's assets, or becomes subject to a bankruptcy or insolvency proceeding.

OTHER CONDITIONS.

- Modifications of Products may be made by DC or its suppliers prior to delivery for reasons such as improvement in performance, simplifications in design, availability of materials, etc., but not to such an extent that the performance will be materially affected.
- Customer shall not assign this Agreement, or any rights thereunder, without the prior written consent of DC.
- DC shall not be deemed to have waived any term or condition of this Agreement or to have assented to any exception to or modification of such terms and conditions unless such waiver or assent is in writing and signed by an authorized officer of DC. DC's failure at any time to require strict performance by Customer of any provision in this Agreement shall not waive or diminish DC's right thereafter to demand strict performance therewith or with any other provision. Waiver of any default shall not waive any other default.
- in the event that any part of this Agreement is or becomes invalid or illegal in whole or in part, such part shall be deemed amended so as to, as nearly as possible, be consistent with the intent expressed in the Agreement. If this is impossible, such part shall be deemed to be deleted, but shall not in any way invalidate any of the remaining provisions of this Agreement.
- Notices shall be mailed, certified mail, or sent by or fax to Customer at the address given on the cover sheet of the Proposal and to DC, Attention: Director of Contracts, PO Box 949, 22 Tower Road, Raymond, Maine 04071, fax: 207-655-8174. Notice shall be effective from date of receipt by addressee.
- This Agreement, including without limitation the Proposal and all schedules attached hereto and/or incorporated herein by reference, expresses the entire agreement between the parties regarding the subject matter contained herein, and conclusively supersedes all prior agreements, writings and negotiations with respect to the subject matter hereof, and any such previous agreement is modified by the deletion of the items listed herein.
- The rights and duties of the parties to this Agreement shall be governed by and construed in accordance with the laws of the State of Maine.
- All disputes, differences, or questions arising out of or relating to this Agreement, or the validity, interpretation, breach, violation, or termination of this Agreement shall be resolved solely by arbitration through the CPR Institute for Dispute Resolution ("CPR") by a sole arbitrator in the city of Portland, Maine. The arbitration proceedings shall be governed by and decided in accordance with the CPR Rules for Non-Administered Arbitration then in effect, unless the parties shall mutually agree otherwise in writing. Any evidentiary rules not expressly provided by the CPR Rules shall be determined in accordance with the Federal Rules of Evidence. Notwithstanding anything to the contrary provided in this Agreement, the arbitration shall be governed by the United States Arbitration Act, 9 U.S.C. § 1, et seq. The arbitration proceeding must be completed through the rendering of the award within six months of the selection of the arbitrator. The award of the arbitrator may be monetary damages, an order requiring performance of obligations under this Agreement or an award of injunctive, declaratory, or equitable relief or any other appropriate award or remedy. However, in no event may the arbitrator issue an award of any form of exemplary or punitive damages, nor may the arbitrator make any ruling, finding or award that does not conform to the terms and conditions of this Agreement. The award rendered by the arbitrator shall be final and binding upon the parties, and judgment may be entered by any competent court having jurisdiction. The award of the arbitrator shall be accompanied by a written explanation of the basis for the award. Notwithstanding anything to the contrary provided in this paragraph and without prejudice to the above procedures, any of the parties may apply to any court of competent jurisdiction for injunctive or other equitable relief if such action is necessary to avoid irreparable damage or to preserve the status quo.

CONSULTING SERVICES. DC will, at Customer's request, furnish a representative to consult regarding the installation of the Products. Charges for furnishing such representative shall be at DC's per diem rate in effect at the time, plus transportation and reasonable living expenses, including standard general and administrative charges. Such consulting service shall not include the furnishing or arranging for the furnishing of any equipment, materials or services required for the actual installation of Products.



Proposal #: **C-04485**
 Call Letters: **WPBY**

Antenna Type: **TLP-16-R S250**
 Location: **Huntington, WV**

Channel: **34 DTV**

Electrical Specifications		Value		Remarks	
		Ratio	dBd		
RMS Gain at Main Lobe over Halfwave Dipole	Hpol	16.0	12.04		
	Vpol				
RMS Gain at Horizontal over Halfwave Dipole	Hpol	9.7	9.87		
	Vpol				
Peak Directional Gain over Halfwave Dipole	Hpol	40.0	16.02		
	Vpol				
Peak Directional Gain at Horizontal over Halfwave Dipole	Hpol	24.3	13.86		
	Vpol				
Circularity	Directional		dB		
Axial Ratio			dB		
Beam Tilt		1.20	deg		
Average Power		3.5	kW	5.44 dBk	
Antenna Input:	T/L	1 5/8	in	50.0 ohm	
Maximum Antenna Input VSWR		Channel	1.10 : 1	Type: EIA/DCA Notes:	
Patterns	Azimuth	S250-HPOL			
	Elevation	16L160120	16L160120-90		
Mechanical Specifications		Metric	English	Preliminary	
Height with Lightning Protector	H4	m	ft	Side mounted	
Height Less Lightning Protector	H2	9.4 m	30.7 ft		
Height of Center of Radiation	H3	4.7 m	15.4 ft		
Basic Wind Speed	V	TBD km/h	TBD mi/h		
Structure Class	TBD	Exposure Category	TBD	Topographic Category	TBD
Effective Projected Area	(EPA)s	3.9 m ²	42.4 ft ²	Excludes Mounts	TIA-222-G.
Weight	W	0.1 t	325 lbs	Excludes Mounts	
Antenna designed in accordance with AISC specifications for design of structural steel for building as prescribed by TIA-222-G. Mechanical Loads Exclude Mounts Ice and seismic loading not included					

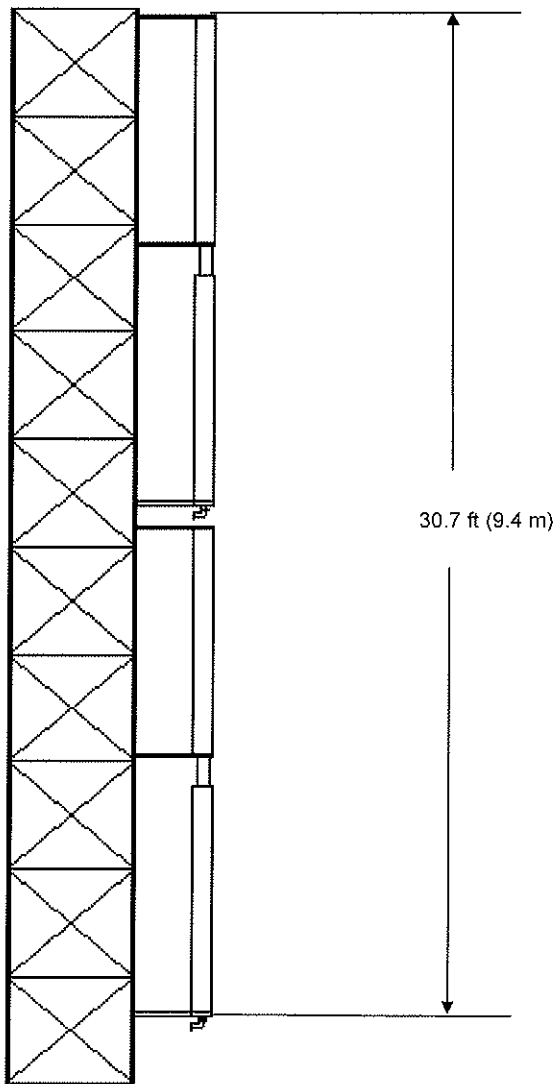
NOTE:
 Prepared By: **Paul Jones** PSJ
 Original Date: **16-Dec-10**

RMS **Rick Smart**

Approved By: **Mike Spugnardi**

Digitally signed by Mike Spugnardi
 DN: cn=Mike Spugnardi, o=SPX Corporation, email=Mike.Spugnardi@spx.com, c=US
 Date: 2010.12.31 09:25:31 -0500

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Mechanical Specifications
TIA-222-G. @ TBD mi/h (TBD km/h)

TLP-16-R S250
Channel: D34

(EPA)s = 42.4 ft²(3.9 m²)
W = 325 lbs(0.1 t)

Structure Class = TBD
Exposure Category = TBD
Topographic Category = TBD

PSJ-TLP-SIDEMOUNT-12-16-10

Not to Scale

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Proposal Number **C-04485**
Date **16-Dec-10**
Call Letters **WPBY** Channel **34**
Location **Huntington, WV**
Customer
Antenna Type **TLP-16-R S250**

SYSTEM SUMMARY

Antenna:

Type:	TLP-16-R S250	ERP:	140 kW	H Pol (21.46 dBk)
Channel:	34	Peak Gain*:	40.0	(16.02 dB)
Location:	Huntington, WV	Input Power:	3.5 kW	(5.44 dBk)

Transmission Line:

Type:	EIA	Attenuation:	1.25 dB
Size:	6 1/8 in	Efficiency:	75.0%
Impedance:	75 ohm		
Length:	1,050 ft		320.0 m

Type:	DCA	Attenuation:	0.31 dB
Size:	2 1/4 flex	Efficiency:	93.2%
Impedance:	50 ohm		
Length:	70 ft		21.3 m

Transmitter:

Power Required: **5.0 kW** (**7.00 dBk**)

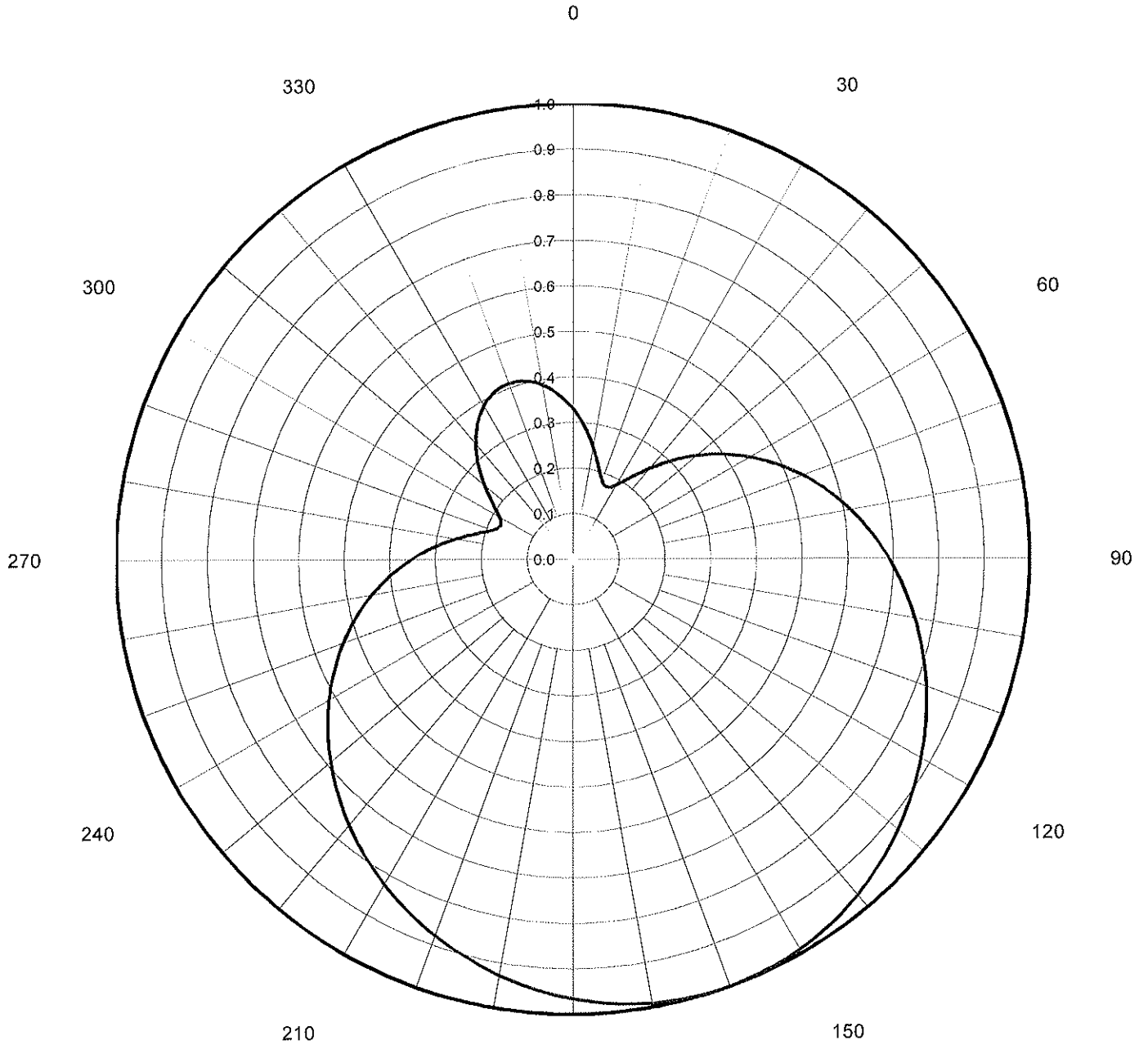
* Gain is with respect to half wave dipole.

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Proposal Number	C-04485		
Date	16-Dec-10		
Call Letters	WPBY	Channel	34
Location	Huntington, WV		
Customer			
Antenna Type	TLP-16-R S250		

AZIMUTH PATTERN

Gain	2.50	(3.98 dB)	Frequency	593.00 MHz
Calculated / Measured		Calculated	Drawing #	S250-HPOL





Proposal Number **C-04485**
 Date **16-Dec-10**
 Call Letters **WPBY** Channel **34**
 Location **Huntington, WV**
 Customer
 Antenna Type **TLP-16-R S250**

TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **S250-HPOL**

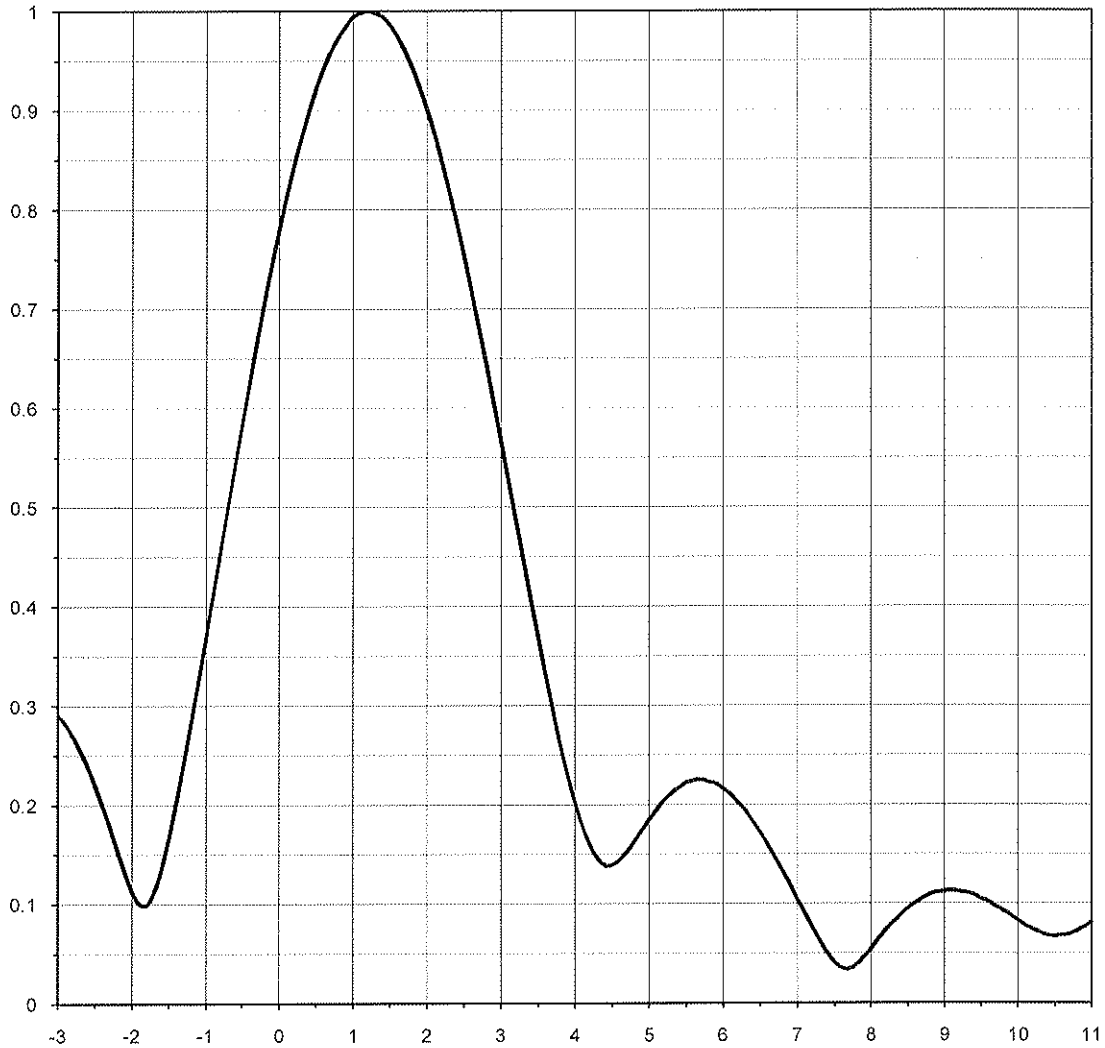
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.330	45	0.304	90	0.690	135	0.948	180	0.966	225	0.726	270	0.352	315	0.292
1	0.323	46	0.314	91	0.698	136	0.952	181	0.963	226	0.719	271	0.342	316	0.300
2	0.315	47	0.323	92	0.705	137	0.956	182	0.959	227	0.712	272	0.333	317	0.308
3	0.308	48	0.333	93	0.712	138	0.959	183	0.956	228	0.705	273	0.323	318	0.315
4	0.300	49	0.342	94	0.719	139	0.963	184	0.952	229	0.698	274	0.314	319	0.323
5	0.292	50	0.352	95	0.726	140	0.966	185	0.948	230	0.690	275	0.304	320	0.330
6	0.283	51	0.362	96	0.733	141	0.969	186	0.944	231	0.683	276	0.295	321	0.337
7	0.275	52	0.371	97	0.740	142	0.972	187	0.940	232	0.676	277	0.286	322	0.345
8	0.267	53	0.381	98	0.746	143	0.975	188	0.936	233	0.669	278	0.277	323	0.351
9	0.259	54	0.390	99	0.753	144	0.978	189	0.932	234	0.661	279	0.267	324	0.358
10	0.251	55	0.399	100	0.760	145	0.980	190	0.927	235	0.654	280	0.258	325	0.364
11	0.243	56	0.409	101	0.766	146	0.983	191	0.923	236	0.646	281	0.250	326	0.369
12	0.235	57	0.418	102	0.773	147	0.985	192	0.918	237	0.638	282	0.241	327	0.375
13	0.227	58	0.427	103	0.779	148	0.987	193	0.914	238	0.631	283	0.233	328	0.380
14	0.220	59	0.436	104	0.786	149	0.989	194	0.909	239	0.623	284	0.225	329	0.385
15	0.213	60	0.446	105	0.792	150	0.991	195	0.904	240	0.615	285	0.217	330	0.389
16	0.206	61	0.455	106	0.798	151	0.993	196	0.899	241	0.607	286	0.210	331	0.393
17	0.200	62	0.464	107	0.804	152	0.994	197	0.894	242	0.599	287	0.204	332	0.397
18	0.194	63	0.473	108	0.811	153	0.996	198	0.889	243	0.591	288	0.197	333	0.400
19	0.189	64	0.482	109	0.817	154	0.997	199	0.884	244	0.583	289	0.192	334	0.403
20	0.184	65	0.490	110	0.823	155	0.998	200	0.879	245	0.575	290	0.187	335	0.405
21	0.181	66	0.499	111	0.829	156	0.999	201	0.874	246	0.567	291	0.183	336	0.407
22	0.178	67	0.508	112	0.834	157	0.999	202	0.868	247	0.559	292	0.179	337	0.408
23	0.176	68	0.517	113	0.840	158	1.000	203	0.863	248	0.550	293	0.177	338	0.410
24	0.174	69	0.525	114	0.846	159	1.000	204	0.857	249	0.542	294	0.175	339	0.410
25	0.175	70	0.534	115	0.852	160	1.000	205	0.852	250	0.534	295	0.175	340	0.410
26	0.175	71	0.542	116	0.857	161	1.000	206	0.846	251	0.525	296	0.174	341	0.410
27	0.177	72	0.550	117	0.863	162	1.000	207	0.840	252	0.517	297	0.176	342	0.410
28	0.179	73	0.559	118	0.868	163	0.999	208	0.834	253	0.508	298	0.178	343	0.408
29	0.183	74	0.567	119	0.874	164	0.999	209	0.829	254	0.499	299	0.181	344	0.407
30	0.187	75	0.575	120	0.879	165	0.998	210	0.823	255	0.490	300	0.184	345	0.405
31	0.192	76	0.583	121	0.884	166	0.997	211	0.817	256	0.482	301	0.189	346	0.403
32	0.197	77	0.591	122	0.889	167	0.996	212	0.811	257	0.473	302	0.194	347	0.400
33	0.204	78	0.599	123	0.894	168	0.994	213	0.804	258	0.464	303	0.200	348	0.397
34	0.210	79	0.607	124	0.899	169	0.993	214	0.798	259	0.455	304	0.206	349	0.393
35	0.217	80	0.615	125	0.904	170	0.991	215	0.792	260	0.446	305	0.213	350	0.389
36	0.225	81	0.623	126	0.909	171	0.989	216	0.786	261	0.436	306	0.220	351	0.385
37	0.233	82	0.631	127	0.914	172	0.987	217	0.779	262	0.427	307	0.227	352	0.380
38	0.241	83	0.638	128	0.918	173	0.985	218	0.773	263	0.418	308	0.235	353	0.375
39	0.250	84	0.646	129	0.923	174	0.983	219	0.766	264	0.409	309	0.243	354	0.369
40	0.258	85	0.654	130	0.927	175	0.980	220	0.760	265	0.399	310	0.251	355	0.364
41	0.267	86	0.661	131	0.932	176	0.978	221	0.753	266	0.390	311	0.259	356	0.358
42	0.277	87	0.669	132	0.936	177	0.975	222	0.746	267	0.381	312	0.267	357	0.351
43	0.286	88	0.676	133	0.940	178	0.972	223	0.740	268	0.371	313	0.275	358	0.345
44	0.295	89	0.683	134	0.944	179	0.969	224	0.733	269	0.362	314	0.283	359	0.337

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Proposal Number	C-04485		
Date	16-Dec-10		
Call Letters	WPBY	Channel	34
Location	Huntington, WV		
Customer			
Antenna Type	TLP-16-R S250		

ELEVATION PATTERN

RMS Gain at Main Lobe	16.00 (12.04 dB)	Beam Tilt	1.20 deg
RMS Gain at Horizontal	9.70 (9.87 dB)	Frequency	593.00 MHz
Calculated / Measured	Calculated	Drawing #	16L160120



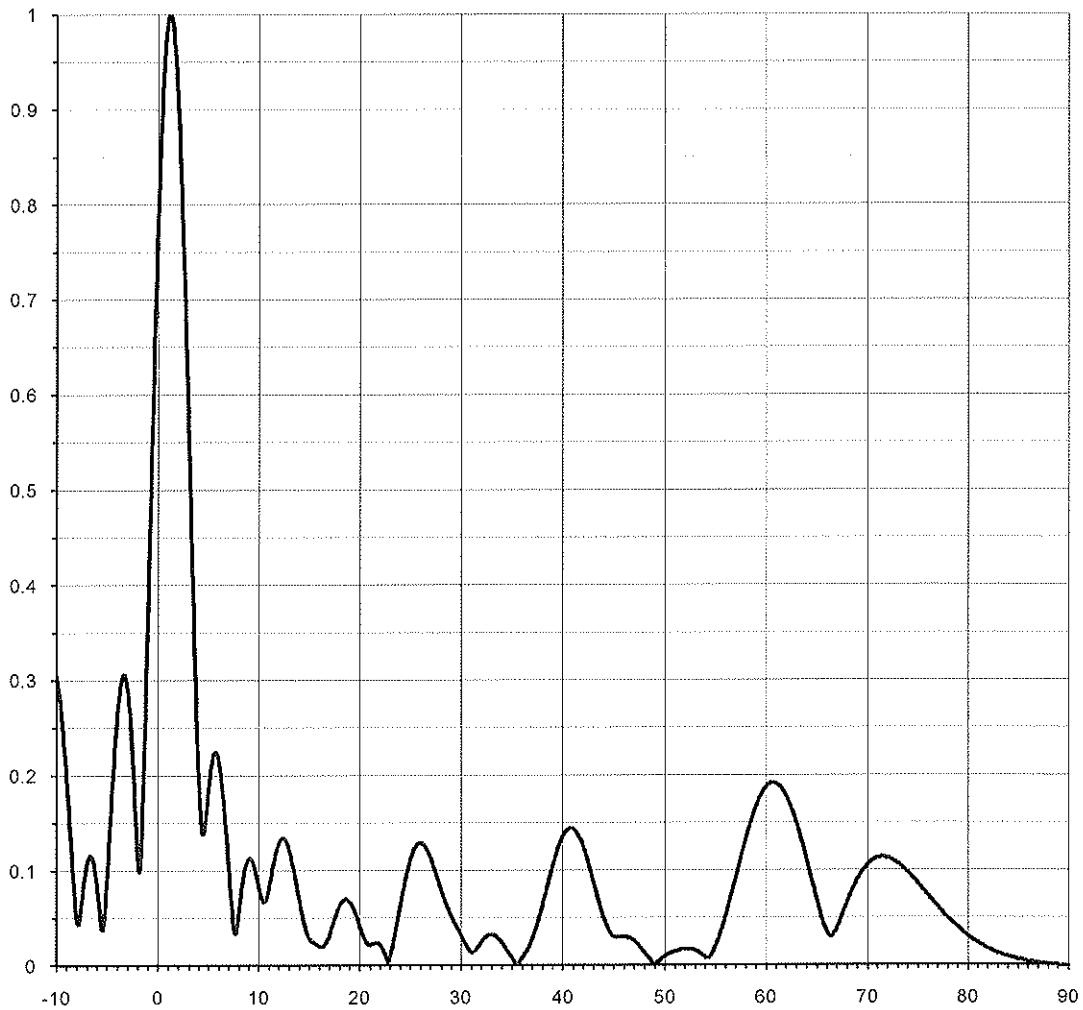
Degrees Below Horizontal



Proposal Number **C-04485**
Date **16-Dec-10**
Call Letters **WPBY** Channel **34**
Location **Huntington, WV**
Customer
Antenna Type **TLP-16-R S250**

ELEVATION PATTERN

RMS Gain at Main Lobe	16.00 (12.04 dB)	Beam Tilt	1.20 deg
RMS Gain at Horizontal	9.70 (9.87 dB)	Frequency	593.00 MHz
Calculated / Measured	Calculated	Drawing #	16L160120-90



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Proposal Number **C-04485**
 Date **16-Dec-10**
 Call Letters **WPBY** Channel **34**
 Location **Huntington, WV**
 Customer
 Antenna Type **TLP-16-R S250**

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **16L160120-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.305	2.4	0.787	10.6	0.067	30.5	0.023	51.0	0.014	71.5	0.114
-9.5	0.264	2.6	0.718	10.8	0.069	31.0	0.015	51.5	0.016	72.0	0.113
-9.0	0.198	2.8	0.644	11.0	0.076	31.5	0.016	52.0	0.017	72.5	0.111
-8.5	0.118	3.0	0.566	11.5	0.104	32.0	0.023	52.5	0.017	73.0	0.107
-8.0	0.049	3.2	0.486	12.0	0.126	32.5	0.030	53.0	0.016	73.5	0.103
-7.5	0.067	3.4	0.407	12.5	0.134	33.0	0.032	53.5	0.014	74.0	0.098
-7.0	0.106	3.6	0.331	13.0	0.126	33.5	0.031	54.0	0.010	74.5	0.092
-6.5	0.114	3.8	0.261	13.5	0.104	34.0	0.026	54.5	0.009	75.0	0.086
-6.0	0.085	4.0	0.202	14.0	0.076	34.5	0.018	55.0	0.018	75.5	0.080
-5.5	0.038	4.2	0.159	14.5	0.049	35.0	0.010	55.5	0.031	76.0	0.074
-5.0	0.091	4.4	0.139	15.0	0.031	35.5	0.002	56.0	0.048	76.5	0.068
-4.5	0.183	4.6	0.144	15.5	0.025	36.0	0.006	56.5	0.068	77.0	0.062
-4.0	0.262	4.8	0.163	16.0	0.021	36.5	0.014	57.0	0.088	77.5	0.056
-3.5	0.303	5.0	0.185	16.5	0.020	37.0	0.025	57.5	0.109	78.0	0.050
-3.0	0.291	5.2	0.204	17.0	0.029	37.5	0.040	58.0	0.129	78.5	0.045
-2.8	0.270	5.4	0.217	17.5	0.046	38.0	0.059	58.5	0.148	79.0	0.040
-2.6	0.239	5.6	0.224	18.0	0.060	38.5	0.080	59.0	0.164	79.5	0.035
-2.4	0.200	5.8	0.223	18.5	0.069	39.0	0.101	59.5	0.177	80.0	0.031
-2.2	0.155	6.0	0.216	19.0	0.068	39.5	0.119	60.0	0.186	80.5	0.027
-2.0	0.113	6.2	0.202	19.5	0.060	40.0	0.134	60.5	0.191	81.0	0.024
-1.8	0.099	6.4	0.183	20.0	0.045	40.5	0.142	61.0	0.192	81.5	0.021
-1.6	0.135	6.6	0.160	20.5	0.030	41.0	0.144	61.5	0.188	82.0	0.018
-1.4	0.202	6.8	0.134	21.0	0.022	41.5	0.139	62.0	0.180	82.5	0.015
-1.2	0.282	7.0	0.105	21.5	0.023	42.0	0.128	62.5	0.168	83.0	0.013
-1.0	0.367	7.2	0.077	22.0	0.023	42.5	0.112	63.0	0.153	83.5	0.011
-0.8	0.455	7.4	0.051	22.5	0.014	43.0	0.092	63.5	0.135	84.0	0.009
-0.6	0.542	7.6	0.035	23.0	0.006	43.5	0.072	64.0	0.115	84.5	0.008
-0.4	0.627	7.8	0.038	23.5	0.029	44.0	0.054	64.5	0.090	85.0	0.006
-0.2	0.706	8.0	0.054	24.0	0.057	44.5	0.039	65.0	0.069	85.5	0.005
0.0	0.779	8.2	0.073	24.5	0.085	45.0	0.031	65.5	0.049	86.0	0.004
0.2	0.844	8.4	0.088	25.0	0.108	45.5	0.030	66.0	0.035	86.5	0.003
0.4	0.898	8.6	0.100	25.5	0.123	46.0	0.030	66.5	0.031	87.0	0.003
0.6	0.942	8.8	0.109	26.0	0.129	46.5	0.029	67.0	0.040	87.5	0.002
0.8	0.974	9.0	0.112	26.5	0.126	47.0	0.027	67.5	0.053	88.0	0.001
1.0	0.994	9.2	0.112	27.0	0.115	47.5	0.022	68.0	0.067	88.5	0.001
1.2	1.000	9.4	0.109	27.5	0.100	48.0	0.015	68.5	0.080	89.0	0.000
1.4	0.994	9.6	0.102	28.0	0.083	48.5	0.008	69.0	0.091	89.5	0.000
1.6	0.974	9.8	0.097	28.5	0.068	49.0	0.002	69.5	0.099	90.0	0.000
1.8	0.943	10.0	0.088	29.0	0.055	49.5	0.004	70.0	0.106		
2.0	0.901	10.2	0.078	29.5	0.044	50.0	0.009	70.5	0.110		
2.2	0.848	10.4	0.071	30.0	0.034	50.5	0.012	71.0	0.113		

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Dielectric

A Unit of SPX Corporation

TV LOW POWER ANTENNA INSTRUCTION MANUAL

By
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March 2010

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Warnings:

The purchaser is responsible for determining if the support structure, pole, tower or mast will safely handle the antenna system.

For reliable, moisture free operation, maintain 5 psig of dry air or dry nitrogen to the antenna system at all times. Failure to keep the transmission line and antenna pressurized with dry air or nitrogen may allow moisture into the system can cause arcing and physical destruction of the coaxial system. The damage degrades the performance and eventually failure of the antenna. Failure or reduced performance of the antenna due to moisture in the system is not manufacture warranted.

This antenna system, when energized by a RF transmitter, will present a high intensity R.F. field. Care must be adhered not to touch the antenna system when energized. Personnel should not be in the aperture of the antenna while the antenna system is energized. All maintenance or repairs should be done with the primary voltage to the transmitter disconnected and all transmitter remote controls disabled.

Return Policy

When returning any material to the factory, be sure to call your sales representative or customer service support and obtain a material return authorization (MRA) number first. Use this number in all correspondence. Material may be refused and sent back at customer expense without a MRA.

Factory Tests

The antenna has been completely assembled and tested at the factory. Each antenna system has been tuned to the required frequency.

Each antenna section is internally matched and requires no tuning after installation. The total input VSWR of the antenna is measured on a tuning rack and is tuned to be 1.1:1 or better within the specified TV channel.

Each section is pressure tested to 15 psig at assembly.

Antenna Description

Dielectrics TLP Antenna is comprised of one or more eight-layer antenna section(s). Each section has vertical rows of horizontally or circularly polarized slots and directors mounted along the cylinder. The antenna sections are made of aluminum outers and copper inners along with stainless steel hardware and slot covers. These antennas are designed to be corrosion resistant and maintenance free. Adjustments and/or tuning are not necessary.

Uncrating

Prior to opening any crate(s) or removing strapping from skids, inspect for shipping damage. Notify the *carrier* immediately of any observed damage to the crate.

Note: TLP-8: The antenna single section is shipped under pressure and should remain so until installation.

TLP-16,-24,-32: The two, three, or four antenna sections and feed lines are shipped under pressure and should remain so until installation.

Open each crate and verify contents against packing list. If any parts are missing notify Dielectric Communications immediately. Inspect contents for possible shipping damage.

Note: If any parts are found damaged, *promptly notify the carrier*. Shipping crates may be used to return damaged parts.

Antenna Sections

Antenna sections are crated individually fully assembled, with hardware and O-rings.

Transmission Line, Power Divider & Feed Lines

Transmission lines may be crated with one or more sections per box. Feed lines are coiled in a separate crate.

Power dividers and feed lines (TLP-16,-24,-32) were match marked so that the antenna system will perform as tuned by the factory.

Where applicable, elbows and transmission line(s) for an elbow complex may be matched marked.

Note: Discoloration on transmission line exterior surface is normal and was caused by handling and exposure to the elements during tuning.

Mounts

Mounts may be crated on a pallet or in a box. Verify quantities and check for damage prior to removal.

Assembly/Installation

Notes:

1. Input section-Power Divider:

There is a transmission line (Input) section that is bolted onto the power divider. Do not remove the inner conductor from the outer of the input feed line. This inner conductor is usually slugged during the tuning process of the antenna. If the inner conductor is moved, it will affect the performance of the antenna.

2. O-ring Installation:

All flange joints are provided with black "Buna" O-ring seals. Ensure that all seal grooves are free of debris. Apply a light coat of the provided non-melting silicon dielectric lubricant (Dow Corning no. 4 compound) to the O-rings at time of assembly. The lubricant will aid in holding the O-ring in the seal groove. Always be sure the lubricant is applied very lightly. If applied too freely, so it does not get onto contact surfaces.

Also to prevent arcing and air leaks, ensure not to pinch an O-ring between the flange contact surfaces.

Sufficient quantities of O-rings and silicon dielectric lubricant are supplied.

3. Inner Conductor Connections:

While assembling and installing the antenna, care must be exercised when inserting the inner conductor connector (i.e. bullet) into a mating coaxial inner conductor. While engaging, the connector should be aligned perfectly with the mating inner conductor to prevent damage to connector.

4. Section Sequence Numbers (TLP-16,-24,-32):

If the antenna has more than one section note that the sections are not the same. The antenna sections are numbered in sequence from bottom to top, (i.e. number one is located in the bottom position). **Each section, elbow, feed line section and power divider output port are match marked.** Assembly by the number sequence ensures that the antenna system will be assembled as tuned by the factory. Reference the Installation Drawing.

5. Hardware:

Feed line hardware supplied is stainless steel. Mounting hardware may be either stainless steel or galvanized steel. Sufficient quantities are included.

Cautions

- ◆ Never climb on the antenna directors or antenna supports.
- ◆ Do not use any gas stop on the antenna. The antenna is internally pressure sealed and should be kept under pressure at all times after installation.
- ◆ Before and during installation, the antenna and feed lines should always be sealed against rain or moisture condensation.
- ◆ Do not alter the length of any feed line from the power divider to the antenna section(s).
- ◆ Connect feed lines only to their assigned (match marked) antenna sections.
- ◆ Never bend the 7/8" feed lines tighter than a ten (10) inch radius.
- ◆ Never bend the 1 5/8" feed lines tighter than a twenty (20) inch radius.
- ◆ Spacing between antenna sections should be set as specified.
- ◆ Antenna sections are not the same, do not interchange the sections from their designated order.

A. TLP-8 Assembly and Orientation

1. Assemble mounts. (Reference Universal Mount drawing in the information folder)
2. Locate and install antenna to supporting structure per Installation Drawing.

Note: If an azimuth pattern optimization and custom mounts were purchased then see the Installation Drawing for orientation with tower.

3. Remove the gas cap from the input section and connect the transmission line.

B. TLP-16, -24 & -32 Assembly and Orientation

1. Assemble mounts. (Reference Universal Mount drawing in the information folder)

For reference locate and mark the center of radiation on the tower.

2. Raise the top antenna section (i.e., highest number) and locate from the center of radiation (Reference Installation Drawing).

3. Fasten mounts to tower and orient antenna per Installation Drawing.

Note: If an azimuth pattern optimization and custom mounts were purchased then see the Installation Drawing for orientation with tower.

4. Repeat for the remaining section(s).
5. Clamp the saddle mount to the power divider and mount on the tower central to the antenna array.
6. Release the pressure and remove the gas cap from the section and the corresponding cap on the power divider. Then connect the feed line matched marked for that section.

Note: To ensure antenna performance the correct feed line must be connected to the correct section and power divider output port. Observe the match marking on sections, feed lines and power divider.

7. Repeat step 5 until all the feed lines are installed.
8. Remove the gas cap from the input section of the power divider and connect the transmission line.
9. After the feed lines have been connected, fasten the rest of the line within the supporting structure to eliminate damage. Use the “wrap-lock” clamps to fasten the lines to the tower legs, diagonals, and horizontals or support mast.

C. Leak Testing

After the antenna is installed and all transmission lines are connected, check the system for leaks.

1. Pressure the system using dry nitrogen or air from a compressor-dehydrator.

CAUTION

Using an air supply other than specified for transmission line, may contaminate the transmission line system.

Note: Make sure a good quality gauge is used which read accurately in the 1-20 psig (140 KPa) range, do not depend on the cylinder regulator gauge.

2. Pressurize the system to 6 psig.
3. Close the shutoff valve.
4. Give the system approximately one half hour to stabilize, and then record the pressure and the temperature.
5. Wait twenty-four hours, and then read the pressure and the temperature again. Use the following formula to obtain a corrected pressure for comparison:

$$PC=(PR+14.7)(T1+460)/(T2+460)-14.7$$

PC=corrected final pressure, psig
 PR=final pressure as read, psig
 T1=beginning temperature, degrees F
 T2=final temperature, degrees F

Note: A rule of thumb is that the final pressure should not be less than half the initial pressure after twenty-four hours.

6. If the system loses pressure at an unacceptably high rate, re-pressurize.
7. Leave the gas/air supply on and find the leak(s) using a "leak detector" or bubble soap.

Should it be necessary to identify a leak, use non-ammonia based leak detection soap, such as *Snoop*, by Swagelok. If unavailable use a simple mixture of dish detergent and water. Ammonia and ammonia-based chemicals are extremely incompatible with brass and brass is one of the main components in transmission line and antenna systems. Ammonia makes the brass more susceptible to stress-corrosion cracking.

8. Correct any leaks that are found.
9. Repeat steps 2 thru 5.

D. Purging System

The transmission line and the antenna system should be purged prior to applying power.

1. Purge by pressurizing the antenna array to about 10 psi (70 kPa) with compressed dehydrated air or cylinder nitrogen
2. Loosen the connection between the transmission line and input section to power divider just enough to allow an air leak.
3. Purge using table below.

Note: Usually allow three volume changes of dry gas/air for a system. See table below for approximate volumes inside various coax sizes.

VOLUME OF COAX PER
1000 FEET OF LENGTH

Diameter	Volume
1-5/8"	13 cu. ft.
3-1/8"	50 cu. ft.
4-1/16"	90 cu. ft.
6-1/8"	200 cu. ft.

One full nitrogen cylinder, size K, contains about 240 cubic feet of gas.

For systems pressurized via dehydrator compressor the time required will depend on pressure maintained and dehydrator compressor capacity.

4. Tighten the connection and check for leaks when purging has been completed.

E. Pressurized System

After system purge, reduce the supply pressure to about approximately 5 psig (35 KPa). After the pressure has stabilized, regularly note the cylinder pressure or dehydrator compressor running time as an indicator of large leaks. Pressure observation is especially important immediately after installation or any subsequent opening and re-assembly.

F. Pre-Operation Inspection

Before powering the system perform the following inspection;

1. Antenna system has been installed per the installation drawing(s).
2. The system is gas tight and purged.
3. If an antenna checkout was ordered, a Dielectric Representative will give approval to apply power.

Operation

To start up apply transmitter signal. Do not exceed the rated power rating for the antenna.

For best performance and reliability from the Dielectric antenna follow the "Maintenance" section of this manual.

Maintenance

Inspection:

The transmission line and antenna system should be inspected once a year, as a matter of routine maintenance. The inspection can be made in conjunction with maintenance on the tower and servicing of obstruction lighting. This requires the service of a qualified TV tower maintenance crew.

Check transmission lines for breaks, loose or missing hardware, chafing and so forth. The transmission line itself should be visually checked for signs of changed alignment, undue stressing and loose coupling clamps and hardware.

Inspect the antenna mounting hardware for tightness.

Observe the dry nitrogen gas/dehydrated-compressor air usage as an indication for system leaks.

Note: Whenever the system has been open for repair purge with dry nitrogen gas or dehydrated-compressor air as described in section E of the Installation instructions. Never operate the system under power until all moisture has been purged. Otherwise permanent damage may occur to the entire system, including the transmitter and transmission line.

ILLUSTRATIONS

Installation Drawing (See Information Folder)

Universal Mount Drawing (See Information Folder)

Optional Ice shield drawing (See Information Folder)

Torque Specification

REVISIONS

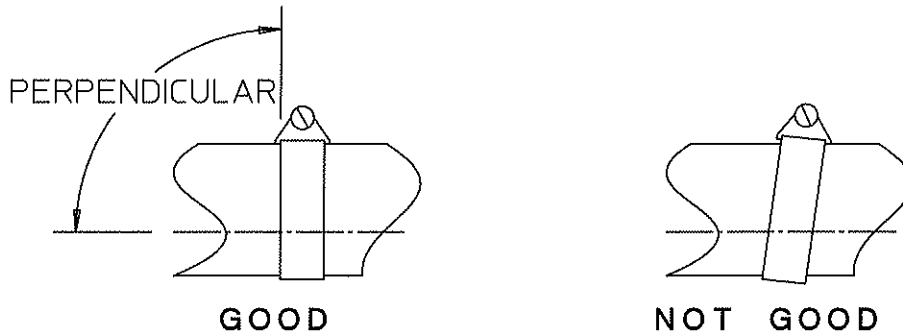
SYM	DESCRIPTION	DATE	APPROVED
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HARDWARE TORQUE SPECIFICATIONS


HARDWARE DESCRIPTION	RECOMMENDED TORQUE	
	MATERIAL 18-8 SST.	MATERIAL CS. GRADE 5
1/4-20	70 IN/LB	96 IN/LB
5/16-18	130 IN/LB	204 IN/LB
3/8-16	210 IN/LB	360 IN/LB = 30 FT/LB
1/2-13	480 IN/LB = 40FT/LB	900 IN/LB = 75 FT/LB
5/8-11	1080 IN/LB = 90 FT/LB	1800 IN/LB = 150 FT/LB
3/4-10	1440 IN/LB = 120 FT/LB	260 FT/LB
1-8	285 FT/LB	640 FT/LB
1 1/8-7	413 FT/LB	800 FT/LB
1 1/4-7	523 FT/LB	1120 FT/LB
1 3/8-6	688 FT/LB	1460 FT/LB
1 1/2-6	888 FT/LB	1940 FT/LB
HOSE CLAMPS	40 - 50 IN/LB	-

NOTE:

HOSE CLAMPS MUST BE ORIENTED PERPENDICULAR TO THE AXIS OF THE OBJECT ON WHICH THEY ARE TO BE MOUNTED.
(HOSE CLAMP BAND, FLAT ON THE OBJECT SURFACE)



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DATE STAMP 6-Oct-1999 11:18:53 A88212	FINISH:	DIELECTRIC TORQUE SPECIFICATIONS	
DATE: 9-30-99 DR. BY: M. DAVISON CHKD BY: LDW ENG/MFG APPVL: CNP	CODE IDENT. NO. 08441	A	88212
			REV: -



COMMUNICATION TECHNOLOGY

PROJECT REFERENCES**Madison, WI Community Tower Project**

Stage 1 – NTSC Antennas/Lines

Stage 2 – DTV Conversion -

Greg Hyer

Associate Director, University of Wisconsin Research Park

608-262-3677

Sinclair Broadcasting Group

DTV Conversion Project

Harvey Arnold, Director of Engineering

WMSN/WISC Stack redesign in process for WMSN, Madison, WI

410-568-1526

Mount Sutro DTV Conversion Project

San Francisco, California

10 Stations – Antenna/Line/Combining

Eric Dausman, Site Manager

415-681-8850

NBC Television

DTV Conversion Project,

Recent stack WCAU/WYBE Philadelphia, PA

Doug Lung , Principal Engineer, NBC Technology

818-334-4034

CBS Television

DTV Conversion Project

John Byrne

Recent Denver Multi-Station Master Antenna System

Director, CBS Stations Engineering Liaison

212-975-7015

WOFL-TV (Fox) Orlando, FLFlexible Switching/Filtering System for Aux Transmitters

Robert Fusco, Director of Engineering

407-741-5140

ABC Television

DTV Conversion Project

10 Stations

David Converse,

Vice President Engineering

818-460-6342



COMMUNICATION TECHNOLOGY

Fox Television

DTV Conversion Project
Earl Arbuckle, Vice President Engineering
201-330-2220

The E.W.Scripps Co. - Scripps Howard Broadcasting

DTV Conversion Project
Mike Doback, VP Engineering
248-827-9490

Hearst-Argyle Television

DTV Conversion Project
Marty Faubell
Vice President Engineering
212-887-6826

Tribune Local TV Broadcasting

DTV Conversion Project
Bill VanDuynhoven, Manager, RF Projects Engineering
770-995-1176

Mount Wilson DTV Conversion Project

Los Angeles, CA
5 Stations – Antennas/Lines
ABC, CBS, NBC, Tribune, Young

Sears Building – Chicago, IL

Triple Stack Antenna Design (3 Stations)
ABC, NBC, Newsweb
Kal Hassan – WLS/ABC 312-750-7747

John Hancock Building – NTSC/DTV Conversion

Chicago, IL
UHF DTV Antenna / Channels 2 & 3 (CBS) Antennas



COMMUNICATION TECHNOLOGY

DTV Antenna
USERS LIST

<u>Call Letters</u>	<u>Location</u>	<u>Type</u>	<u>Date</u>
WCPB	Salisbury, MD	TUP-04-16-1	Oct-94
KUPX	Ogden, UT	TUP-SP2-12-1	Jan-97
WNDU	South Bend, IN	TUP-04-8-1	Jun-97
KYVE	Yakima, WA	TUP-04-8-1	Jul-97
KOMO	Seattle, WA	TFU-32DSC	Sep-97
WSB	Atlanta, GA	TFU-30DSC-R	Sep-97
WGTE	Toledo, OH	TFU-28GTH-R	Oct-97
WKOW	Madison, WI	TFU-30GTH-R	Nov-97
KXAS	Forth Worth, TX	TFU-30GTH-R	Dec-97
WCBS	New York, NY	TAD-16UDASP	Dec-97
KXTX	Dallas, TX	TFU-30GBH-R	Jan-98
WFAA	Dallas, TX	TW-7B9-R	Feb-98
KHOU	Houston, TX	TFU-28GBH-R	Mar-98
WBTV	Charlotte, NC	TFU-24GTH-R	Mar-98
WTHR	Indianapolis, IN	TFU-18DSC-R	Apr-98
KING	Seattle, WA	TFU-30DSC-R	May-98
WXIA	Atlanta, GA	TW-7B10-R	May-98
KABC	Los Angeles, CA	TFU-22DSC-R	Jun-98
KXLT	Rochester, MN	TUP-C2-6-1	Jun-98
WHSB	Marlborough, MA	TFU-10DSC-R	Jun-98
WBNS	Columbus, OH	TFU-18DSC-R	Jul-98
WHDH	Boston, MA	TFU-28GBH-R	Jul-98
WCVB	Boston, MA	TLP-16M (C)	Aug-98
KIRO	Seattle, WA	TFU-32DSC	Sep-98
KYW	Philadelphia, PA	TFU-30GBH-R	Sep-98
WKYC	Cleveland, OH	TF-2CL	Sep-98
WPVI	Philadelphia, PA	TFU-30GTH-R	Sep-98
KBHK	San Francisco, CA	TUP-C3-8-1	Oct-98
KBWB	San Francisco, CA	TUP-C3-8-1	Oct-98
KCBS	Los Angeles, CA	TFU-18DSC-R	Oct-98
KCNS	San Francisco, CA	TUP-C3-8-1	Oct-98
KCOP	Los Angeles, CA	TFU-36DSC-R	Oct-98
KGO	San Francisco, CA	TUP-C3-8-1	Oct-98
KMTP	San Francisco, CA	TUP-C3-8-1	Oct-98
KNBC	Los Angeles, CA	TFU-18GTH/VP-R	Oct-98
KPIX	San Francisco, CA	TUP-C3-8-1	Oct-98
KPST	San Francisco, CA	TUP-C3-8-1	Oct-98

KQED	San Francisco, CA	TUP-C3-8-1	Oct-98
KRON	San Francisco, CA	TUP-C3-8-1	Oct-98
KTLA	Los Angeles, CA	TFU-12DSC/CP-R	Oct-98
KTVU	San Francisco, CA	TUP-C3-8-1	Oct-98
WATL	Atlanta, GA	TFU-18GBH-R	Oct-98
WCAU	Philadelphia, PA	TLP-16A	Oct-98
WETA	Washington, DC	TFU-8JSC-R	Oct-98
WGNX	Atlanta, GA	TFU-18GTH-R	Oct-98
WJLA	Washington, DC	TUP-04-12-2	Oct-98
WMUR	Manchester, NH	TFU-24JTH-R	Oct-98
WRC	Washington, DC	TFU-26GTH-R	Oct-98
WTNH	New Haven, CT	THP-O-2-1-R	Oct-98
WUSA	Washington, DC	TUP-04-12-2	Oct-98
KCAL	Los Angeles, CA	TAD-16UDA	Nov-98
KFMB	San Diego, CA	TFU-30DSC	Nov-98
KWPX	Bellevue, WA	TFU-31ETT-R	Nov-98
WDIV	Detroit, MI	TFU-18DSC-R	Dec-98
WISH	Indianapolis, IN	TW-7B9-R	Dec-98
WTAE	Pittsburgh, PA	TLP-16I (C)	Dec-98
WXYZ	Detroit, MI	TFU-30DSC-R	Dec-98
KCTS	Seattle, WA	TFU-24GTH-R	Jan-99
WPLG	Miami, FL	THP-O-2-1-R	Jan-99
WVEC	Hampton, VA	TFU-30GBH-R	Feb-99
KFOR	Oklahoma City, OK	TFU-30GTH-R	Mar-99
KGW	Portland, OR	TFU-24GBH-R	Mar-99
KMOV	St. Louis, MO	TFU-24GBH-R	Mar-99
WTVS	Detroit, MI	TFU-18GTH-R	Mar-99
WWJ	Detroit, MI	TFU-18GBH-R	Mar-99
KCRA	Sacramento, CA	TUP-03-1-1	Apr-99
KPRC	Houston, TX	TFU-26GTH-R	Apr-99
KHWB	Houston, TX	TFU-18DSC-R	May-99
KPTV	Portland, OR	TFU-28GBH-R	May-99
KSBI	Oklahoma City, OK	TFU-30GBH-R	May-99
WCBB	Augusta, ME	TUP-C3-2-1	May-99
WCPO	Cincinnati, OH	TBF-3CH	May-99
WRTV	Indianapolis, IN	TFU-30GTH-R	May-99
KGTV	San Diego, CA	TFU-30DSC-R	Jun-99
KPDX	Vancouver, WA	TFU-32GTH/VP-R	Jun-99
WCNC	Charlotte, NC	TFU-22DSC-R	Jun-99
WMVS	Milwaukee, WI	THV-6A8-R	Jun-99
WUND	Columbia, NC	TFU-30GTH-R	Jun-99
KICU	San Jose, CA	TFU-18DSC-R	Jul-99
KOPB	Portland, OR	TFU-24GBH-R	Jul-99
KPHO	Phoenix, AR	TFU-26DSC	Jul-99

WPXI	Pittsburgh, PA	TFU-30GBH-R	Jul-99
KARE	Minneapolis, MN	TAD-32UDA	Aug-99
KDKA	Pittsburgh, PA	TFU-26GTH-R	Aug-99
KMSP	Minneapolis, MN	TAD-32UDA	Aug-99
KMWB	Minneapolis, MN	TAD-32UDA	Aug-99
KSTP	Minneapolis, MN	TAD-32UDA	Aug-99
KTCA	Minneapolis, MN	TAD-32UDA	Aug-99
KTCI	Minneapolis, MN	TAD-32UDA	Aug-99
KTRK	Houston, TX	TFU-30DSC-R	Aug-99
WCCB	Charlotte, NC	TFU-10DSC-R	Aug-99
WCCO	Minneapolis, MN	TAD-32UDA	Aug-99
WEWS	Cleveland, OH	TFU-28GBH-R	Aug-99
WLIW	Plainview, NY	TFU-26GTH-R	Aug-99
WNCN	Raleigh, NC	TFU-28GTH/VP-R	Aug-99
WSOC	Charlotte, NC	TUP-04-12-1	Aug-99
KNSD	San Diego, CA	TFU-10DSC	Sep-99
KSDK	St. Louis, MO	TWSC-22	Sep-99
WBAL	Baltimore, MD	TFU-20GTH-R	Sep-99
WJZ	Baltimore, MD	TFU-20GTH-R	Sep-99
WMAR	Baltimore, MD	TFU-20GTH-R	Sep-99
WOIO	Cleveland, OH	TAC-4HB	Sep-99
WTVD	Durham, NC	TFU-36GTH-R	Sep-99
WXIN	Indianapolis, IN	TFU-30DSC-R	Sep-99
KMSP	Minneapolis, MN	TUP-SP4-12-1	Oct-99
KNXV	Phoenix, AZ	TFU-18DSC	Oct-99
KOAC	Corvallis, OR	TFU-24GBH-R	Oct-99
KSTP	Minneapolis, MN	TLP-16B (C)	Oct-99
KTXL	Sacramento, CA	TFU-30DSC-R	Oct-99
KXTV	Sacramento, CA	TFU-30GBH-R	Oct-99
WFLA	Tampa, FL	TCL-6A7 (S)	Oct-99
WFTS	Tampa, FL	TFU-16GTH	Oct-99
WNBC	New York, NY	TUP-SP4-8-1	Oct-99
WOFL	Lake Mary, FL	TFU-28DSC-R	Oct-99
KDIN	Des Moines, IA	TFU-30GBH-R	Nov-99
KPNX	Mesa, AZ	TFU-26GBH	Nov-99
KUTP	Phoenix, AZ	TFU-20DSC	Nov-99
WHO	Des Moines, IA	TFU-30GTH-R	Nov-99
WMPT	Annapolis, MD	TFU-30GBH-R	Nov-99
WQOW	Eau Claire, WI	TUP-SP4-8-1	Nov-99
KDAF	Dallas, TX	TFU-26GTH-R	Dec-99
KHTV	Houston, TX	TFU-18DSC-R	Dec-99
KOVR	Sacramento, CA	TFU-22GBH-R	Dec-99
KTXA	Dallas, TX	TFU-24GTH-R	Dec-99
WAVY	Portsmouth, VA	TFU-30GBH-R	Dec-99

WCAU	Philadelphia, PA	TFU-30GBH/VP-R	Dec-99
WDSE	Duluth, MN	TFU-24GBH-R	Dec-99
WKBD	Detroit, MI	TFU-24DSC-R	Dec-99
WSPA	Spartansburg, SC	TFU-26GBH-R	Dec-99
KCET	Los Angeles, CA	TFU-10DSC-R	Jan-00
KLFY	Lafayette, LA	TAD-24UDE	Jan-00
KPXD	Arlington, TX	TFU-22DSC-R	Jan-00
KWHY	Los Angeles, CA	TFU-10DSC-R	Jan-00
WBFF	Baltimore, MD	TUP-C3-4-1	Jan-00
WCYB	Bristol, VA	TLP-16M (C)	Jan-00
WXIX	Newport, KY	TFU-14GBH-R	Jan-00
KHSX	Dallas, TX	TFU-30DSC-R	Feb-00
KWHY	Los Angeles, CA	TFU-26GTH-R S180	Feb-00
WFSB	Hartford, CT	TLP-16A	Feb-00
WITF	Harrisburg, PA	TWS-24LP/O	Feb-00
WPXD	Ann Arbor, MI	TUP-O5-16-1	Feb-00
WRDW	North Augusta, GA	TWSCF-28/SM	Feb-00
WVPX	Akron, OH	TFU-28DSC-R	Feb-00
KCPQ	Seattle, WA	TFU-18DSC-R	Mar-00
KDNL	St. Louis, MO	TFU-30GBH-R	Mar-00
KLAS	Las Vegas, NV	TAB-12H-M	Mar-00
KMWB	Minneapolis, MN	TFU-36DSC-R	Mar-00
KPXE	Kansas City, MO	TFU-24GTH-R	Mar-00
WAOW	Wausau, WI	TFU-20GTH-R	Mar-00
WCTI	New Bern, NC	TLP-16M (C)	Mar-00
WMPN	Jackson, MS	TFU-20GTH-R	Mar-00
WPGH	Pittsburgh, PA	TFU-20DSC-R	Mar-00
WTLV	Jacksonville, FL	TF-2CH (S)	Mar-00
WBZ	Boston, MA	TAD-24UDA	Apr-00
WGBH	Boston, MA	TAD-24UDA	Apr-00
WHYY	Wilmington, DE	TLP-16J SP (C)	Apr-00
WLPB	Baton Rouge, LA	TFU-10DSC-R	Apr-00
WLS	Chicago, IL	TFU-12GBH-R	Apr-00
WLVT	Allentown, PA	TLP-8H	Apr-00
WMAQ	Chicago, IL	TFU-12GBH-R	Apr-00
WPBT	Miami, FL	TFU-24GTH	Apr-00
WPWR	Gary, IN	TFU-16DTC-R DC	Apr-00
WPXW	Manassas, VA	TUP-O5-16-1	Apr-00
WRLK	Columbia, S.C	888-24	Apr-00
WUTF	Boston, MA	TAD-24UDA	Apr-00
KMOS	Sedalia, MO	TFU-30GTH-R	May-00
WBOC	Salisbury, MD	TUP-P4SP-8S-1	May-00
WFLX	Palm Beach, FL	TFU-31ETT	May-00
WFTV	Orlando, FL	TFU-30GTH	May-00

WHIO	Dayton, OH	TFU-12DSC-R	May-00
WHRM	Wausau, WI	TFU-18GTH	May-00
WKMG	Orlando, FL	TFU-30GTH	May-00
WMVT	Milwaukee, WI	TFU-18GTH-R	May-00
WNJX	Puerto Rico	TFU-30JSC-R	May-00
WNWO	Toledo, OH	TLP-32M(C)	May-00
WRDQ	Orlando, FL	TFU-12GBH	May-00
WWBT	Richmond, VA	TFU-24DSC-R O4	May-00
KAID	Boise, ID	TAD-28UDC	Jun-00
KBCI	Boise, ID	TAD-28UDC	Jun-00
KIVI	Boise, ID	TAD-28UDC	Jun-00
KNVA	Austin, TX	TFU-30GTH-R	Jun-00
KTTC	Rochester, MN	TFU-28DSC-R	Jun-00
KTXH	Houston, TX	TFU-24GTH-R	Jun-00
KXAN	Austin, TX	TFU-24GTH-R	Jun-00
WCSC	Charleston, SC	TUP-C3-10-1	Jun-00
WEDU	Tampa, FL	TUP-O5-12-1	Jun-00
WENH	Durham, NH	TUP-O4-6-1	Jun-00
WGCU	Ft. Meyers, FL	TLP-16B	Jun-00
WHAS	Louisville, KY	TFU-26DSC-R	Jun-00
WTOG	Tampa, FL	TUP-O5-12-1	Jun-00
WUPA	Atlanta, GA	TFU-32GTH-R	Jun-00
WVIA	Scranton, PA	TLP-24A	Jun-00
WESH	Daytona Beach, FL	THV-11A11	Jul-00
WFOR	Miami, FL	TFU-22GBH	Jul-00
WPXA	Rome, GA	TFU-16GTH-R	Jul-00
KPXF	Porterville, CA	TFU-10DSC-R	Aug-00
WBUI	Decatur, IL	TFU-31ETT-R	Aug-00
WISC	Madison, WI	TFU-24GBH-R	Aug-00
WKOW	Madison, WI	TFU-14DSC-R	Aug-00
WPHA	Atlantic City, NJ	TUP-SP4-16S	Aug-00
WPXV	Norfolk, VA	TFU-26DSC-R	Aug-00
WRBW	Orlando, FL	TFU-30GTH	Aug-00
WWL	New Orleans, LA	TFU-24GTH	Aug-00
KAET	Tempe, AZ	TFU-30GBH	Sep-00
KPBS	San Diego, CA	TFU-18GTH-R	Sep-00
KSAT	San Antonio, TX	TFU-30DSC	Sep-00
KSMO	Kansas City, MO	TFU-30GTH-R	Sep-00
KTBS	Shreveport, LA	TFU-30GTH	Sep-00
KUWB	Ogden, UT	TUA-T3-12	Sep-00
KYTV	Springfield, MO	TFU-24GTH-R	Sep-00
WBBJ	Jackson, TN	TFU-30DSC-R	Sep-00
WHA	Madison, WI	TFU-28GBH-R	Sep-00
WHRO	Hampton, VA	TFU-24GBH-R	Sep-00

WJXT	Jacksonville, FL	TFU-30GTH	Sep-00
WMSN	Madison, WI	TF-2CH	Sep-00
WOLO	Columbia, SC	THV-11A8	Sep-00
WRSP	Springfield, IL	TFU-28DSC-R	Sep-00
WSBT	South Bend, IN	TUA-O4-8/32H	Sep-00
WTVZ	Norfolk, VA	TFU-20DSC-R	Sep-00
KWCV	Wichita, KS	TFU-30GTH-R	Oct-00
WAOM	Moorehead, KY	TFU-18DSC-R	Oct-00
WBZL	Miami, FL	TFU-12DSC-R	Oct-00
WCCU	Urbana, IL	TFU-16DSB-M	Oct-00
WGN	Chicago, IL	TFU-24DSC-R	Oct-00
WTKR	Norfolk, VA	TFU-28GTH-R	Oct-00
KFSN	Fresno, CA	THA-C2-2/4	Nov-00
KPXB	Conroe, TX	TF-2CM	Nov-00
WBNG	Johnson City, NY	THA-O6-SP	Nov-00
WCCB	Charlotte, NC	TFU-24DSC	Nov-00
WLNS	Lansing, MI	TUD-O5-12/60	Nov-00
WPXR	Roanoke, VA	TUP-SP4-8S	Nov-00
WVTA	Windsor, VT	TUA-O4-10/40	Nov-00
KHIN	Red Oak, IA	TFU-28GTH-R	Dec-00
KOPX	Oklahoma City, OK	TFU-18GTH-R	Dec-00
KWWL	Waterloo, IA	TLP-24A	Dec-00
WDPX	Vineyard Haven, MA	TUP-C4-6-1	Dec-00
WFTX	Cape Coral, FL	TFU-22DSC-R	Dec-00
WGAL	Lancaster, PA	TFU-30DSC-R	Dec-00
WHPX	New London, CT	TFU-18DSC-R	Dec-00
WIVB	Buffalo, NY	TFU-30GTH	Dec-00
WKCF	Clermont, FL	TFU-24GTH	Dec-00
WMEC	Quincy, IL	TUA-O4-8/32	Dec-00
WNJT	Trenton, NJ	TUA-O4-12/48H-1-R	Dec-00
WOWK	Huntington, WV	TUP-O5-12/60H-B	Dec-00
WQEC	Quincy, IL	TUA-O4-8/32	Dec-00
WREG	Memphis, TN	TFU-26GTH-R	Dec-00
WSEC	Springfield, IL	TUA-O4-8/32	Dec-00
WKFT	Fayetteville, NC	TFU-24DSC	Jan-01
KASA	Albuquerque, NM	TUD-O5	Feb-01
KASY	Albuquerque, NM	TUD-O5	Feb-01
KDSM	Des Moines, IA	TFU-30GTH-R	Feb-01
KNAT	Albuquerque, NM	TUD-O5	Feb-01
KNME	Albuquerque, NM	TUD-O5	Feb-01
KWBQ	Albuquerque, NM	TUD-O5	Feb-01
WHSL	E. St. Louis, IL	TFU-22DSC-R	Feb-01
WPBF	Tequesta, FL	TFU-22DSC-R	Feb-01
WUPN	Greensboro, NC	TFU-20DSC-R	Feb-01

WXLV	Winston-Salem, NC	TFU-26DSC-R	Feb-01
KBME	Bismark, ND	TFU-18DSC-R	Mar-01
KNOE	Monroe, LA	THA-O6-3H/18HD	Mar-01
KRCA	Riverside, CA	TFU-24DSC-R	Mar-01
KTXS	Abilene, TX	TLP-16I	Mar-01
KWTX	Waco, TX	TFU-30DSC-R	Mar-01
WAIQ	Montgomery, AL	888-32	Mar-01
WDSU	New Orleans, LA	TFU-30GTH	Mar-01
WEAU	Eau Claire, WI	TFU-34DSC-R	Mar-01
WKRN	Nashville, TN	TUA-O4-15/60H-1-T	Mar-01
WNPT	Nashville, TN	TUA-O4-15/60H-1-T	Mar-01
WUAB	Lorain, OH	TUA-C4-16/64U-T-R	Mar-01
WABI	Bangor, ME	TFU-36GTH-R	Apr-01
WCWB	Pittsburgh, PA	TFU-18JTT-R	Apr-01
WMEB	Orono, ME	THV-6A9-R	Apr-01
WQLN	Erie, PA	888-20	Apr-01
WSMV	Nashville, TN	TW-9B10-R (S)	Apr-01
WTVG	Toledo, OH	TFU-24DSC-R	Apr-01
WWTV	Cadillac, MI	TLP-24B	Apr-01
KJRH	Tulsa, OK	TFU-28DSC-R	May-01
KOTV	Tulsa, OK	TFU-28DSC-R	May-01
WJRT	Flint, MI	TFU-26DSC-R	May-01
WPTD	Dayton, OH	TFU-24DSB	May-01
WPXB	Merrimack, NH	TLP-16J	May-01
WTOV	Steubenville, OH	TFU-16DSB-J (C)	May-01
WXII	Winston-Salem, NC	TFU-30DSC-R	May-01
KALB	Alexandria, LA	TLP-24H	Jun-01
KBSD	Ensign, KS	THB-03	Jun-01
KBSL	Goodland, KS	TLP-8I	Jun-01
KCPT	Kansas City, MO	TFU-26GTH-R	Jun-01
KCRG	Cedar Rapids, IA	TUD-O5-12/60H-B	Jun-01
KENS	San Antonio, TX	TFU-28GBH-R	Jun-01
KFVS	Cape Girardeau, MO	TFU-24DSB-A	Jun-01
KLTS	Shreveport, LA	TLP-8D	Jun-01
KONG	Seattle, WA	TFU-24DSB-I	Jun-01
KRIN	Waterloo, IA	TUD-O5-12/60H-B	Jun-01
KTVB	Boise, ID	TFU-24DSB-I	Jun-01
KTWB	Seattle, WA	TFU-20GTH-R	Jun-01
KVAL	Eugene, OR	TLP-16M (C)	Jun-01
WASV	Asheville, NC	TFU-24DSB	Jun-01
WBAY	Green Bay, WI	TUD-O5-14/70	Jun-01
WBDT	Dayton, OH	TFU-18DSC-R	Jun-01
WCBI	Columbus, MS	TLP-32I	Jun-01
WEDN	Norwich, CT	TFU-16DSB	Jun-01

WFXG	Augusta, GA	TLP-16M (C)	Jun-01
WMEA	Biddeford, ME	TLP-24M	Jun-01
WPNE	Green Bay, WI	TUD-O5-14/70	Jun-01
WXTX	Columbus, GA	TLP-16M (C)	Jun-01
KMOL	San Antonio, TX	TFU-28GTH-R	Jun-01
KBSH	Hays, KS	TLP-8A	Jul-01
KEPR	Pasco, WA	TLP-16M (C)	Jul-01
KEYC	Mankato, MN	TFU-30DSC-R	Jul-01
KIMA	Yakima, WA	TLP-16M (C)	Jul-01
KIMT	Mason City, IA	TLP-24E (C)	Jul-01
KLEW	Lewiston, ID	TLP-16M	Jul-01
KOTA	Rapid City, SD	THP-S2-1-1-R	Jul-01
KSLA	Shreveport, LA	TFU-16DSB-A	Jul-01
KVBM	St. Paul, MN	TAD-32UDC-5/80	Jul-01
KWCH	Hutchinson, KS	TFU-24DSB	Jul-01
WAFF	Huntsville, AL	TLP-32A	Jul-01
WBBM	Chicago, IL	TDM-2A2	Jul-01
WBTW	Florence, SC	TFU-16DSB	Jul-01
WDBJ	Roanoke, VA	TFU-18GTH-R	Jul-01
WEHT	Evansville, IN	TFU-16DSB	Jul-01
WHP	Harrisburgh, PA	THB-O3-1M/3H-1-R	Jul-01
WUNG	Concord, NC	TFU-30GTH-R	Jul-01
WWPX	Martinsburg, WV	TW-7B12-R	Jul-01
WHNT	Huntsville, AL	TFU-30JBH	Jul-01
KCBY	Coos Bay, OR	TLP-16M	Aug-01
KCNC	Denver, CO	TLP-8G	Aug-01
KCNC	Denver, CO	TUV-24GTH/4MT-R	Aug-01
KIDK	Idaho Falls, ID	TLP-8I	Aug-01
KPIC	Roseburg, OR	TLP-16M	Aug-01
WDEF	Chattanooga, TN	TLP-16E	Aug-01
WFPX	Fayetteville, NC	TFU-18DSC-R	Aug-01
WHLT	Hattiesburg, MS	TLP-8A	Aug-01
WISN	Milwaukee, WI	TFU-26GTH-R	Aug-01
WJBF	Augusta, GA	TLP-8M	Aug-01
WJHL	Johnson City, TN	TLP-16H	Aug-01
WKEF	Dayton, OH	TFU-30GTH-R	Aug-01
WMEM	Mars Hill, ME	881-16	Aug-01
WNEG	Toccoa, GA	TLP-8E	Aug-01
WNTV	Greenville, SC	THA-C3	Aug-01
WQAD	Moline, IL	TFU-30GTH-R	Aug-01
WRGT	Dayton, OH	TFU-26GTH-R	Aug-01
WUNL	Winston-Salem, NC	TLP-16M (C)	Aug-01
WUXP	Nashville, TN	TFU-24DSC-R	Aug-01
WVIZ	Cleveland, OH	TFU-26GBH-R	Aug-01

WXPX	Bradenton, FL	TFU-24GTH	Aug-01
WZTV	Nashville, TN	TFU-18DSC-R	Aug-01
KABY	Aberdeen, SD	TLP-24M (C)	Sep-01
KKPX	San Jose, CA	TFU-20DSC-R	Sep-01
KPLR	St. Louis, MO	TFU-30DSC-R	Sep-01
KPRY	Pierre, SD	TLP-24M (C)	Sep-01
WADL	Mt. Clemens, MI	TFU-30DSC-R	Sep-01
WBRA	Roanoke, VA	THA-C4SP-2L/8H	Sep-01
WBXX	Crossville, TN	TFU-24DSC-R	Sep-01
WEYI	Saginaw, MI	TFU-16DSB-A	Sep-01
WFWA	Ft. Wayne, IN	TFU-28GTH-R DC	Sep-01
WFYI	Indianapolis, IN	TLP-16I	Sep-01
WGME	Portland, ME	TFU-30DSC-R	Sep-01
WJAC	Johnstown, PA	TFU-24DSC-R	Sep-01
WJWB	Jacksonville, FL	TLP-24M	Sep-01
WKLE	Lexington, KY	TLP-24B	Sep-01
WLFL	Raleigh, NC	TFU-30GTH-R	Sep-01
WLYH	Lancaster, PA	TFU-24DSB-W	Sep-01
WMSY	Marion, VA	TLP-16A	Sep-01
WMTW	Poland Spring, ME	TFU-24DSB-C170	Sep-01
WMTW	Poland Spring, ME	TUA-C3-2/6U	Sep-01
WPBN	Traverse City, MI	TLP-24M (C)	Sep-01
WQTO	Ponce, PR	TFU-22DSC	Sep-01
WRDC	Raleigh, NC	TFU-30GBH-R	Sep-01
WSBN	Norton, VA	TLP-16A	Sep-01
WUNE	Linville, NC	TFU-24DSC-R	Sep-01
WUNK	Greenville, NC	TLP-16	Sep-01
WUNU	Lunberton, NC	TFU-30GTH-R	Sep-01
KAME	Reno, NV	TLP-8C	Oct-01
KOAT	Albuquerque, NM	TFU-18GTH-R	Oct-01
KOLD	Tucson, AZ	TUA-C3-12/36H	Oct-01
KVOA	Tucson, AZ	TUA-C3-12/36H-1-R	Oct-01
WATL	Atlanta, GA	TUD-O5-14/70U	Oct-01
WIWB	Suring, WI	TFU-16DSB-E	Oct-01
WKGB	Bowling Green, KY	TLP-16B	Oct-01
WKMJ	Louisville, KY	TLP-16B	Oct-01
WKMR	Clearfield, KY	TLP-16B	Oct-01
WKON	Owentown, KY	TLP-16B	Oct-01
WKSO	Somerset, KY	TLP-24B	Oct-01
WTBS	Atlanta, GA	TUD-O5-14/70U	Oct-01
WTVK	Naples, FL	TFU-30DSC-R	Oct-01
WUNC	Chapel Hill, NC	TFU-30DSC-R	Oct-01
WUNF	Asheville, NC	TFU-16DSB-M	Oct-01
WWMB	Florence, SC	TFU-30DSC-R DC	Oct-01

KHNE	Hastings, NE	TFU-30GTH-H DC	Oct-01
WKHA	Hazard, KY	TLP-16B	Oct-01
KCWE	Kansas City, MO	TFU-30GTH-R	Nov-01
KMBC	Kansas City, MO	THV-11A7-R	Nov-01
KPXM	St. Cloud, MN	TFU-18DSC-R	Nov-01
KPXR	Cedar Rapids, IA	TFU-18DSC-R	Nov-01
KTPX	Okmulgee, OK	TFU-24DSC-R	Nov-01
WCVN	Covington, KY	TLP-16B	Nov-01
WFRV	Green Bay, WI	TUD-C5SP-14/70H	Nov-01
WJTV	Jackson, MS	TLP-24J	Nov-01
WKAS	Ashland, KY	TLP-16B	Nov-01
WKMA	Nortonville, KY	TLP-24B	Nov-01
WKMU	Murray, KY	TLP-16B	Nov-01
WKOH	Owensboro, KY	TLP-16B	Nov-01
WKPI	Pikeville, KY	TLP-16C	Nov-01
WKRK	Mobile, AL	TFU-24DSB-C	Nov-01
WKZT	Elizabethtown, KY	TLP-16B	Nov-01
WLED	Littleton, NH	TFU-28GTH-R DC	Nov-01
WLOS	Asheville, NC	TFU-16DSB-M (C)	Nov-01
WLPX	Charleston, WV	TFU-24DSC-R	Nov-01
WMFE	Orlando, FL	TFU-30DSC	Nov-01
WMOR	Lakeland, FL	TFU-30GBH	Nov-01
WOPX	Melbourne, FL	TFU-30DSC-R	Nov-01
WPBA	Atlanta, GA	TFU-24JTH-R	Nov-01
WPNE	Green Bay, WI	TUD-C5SP-14/70H	Nov-01
WPXH	Gadsden, AL	TFU-18DSC-R	Nov-01
WPXK	Jellico, TN	TLP-8 C170	Nov-01
WPXX	Memphis, TN	TFU-28DSC-R	Nov-01
WRPX	Rocky Mount, NC	TFU-18DSC-R	Nov-01
WTVQ	Lexington, KY	TLP-16D	Nov-01
WUNP	Roanoke Rapids, NC	TLP-16B	Nov-01
WVUT	Vincennes, IN	TLP-8E	Nov-01
WZPX	Battle Creek, MI	TFU-18DSC-R	Nov-01
WMPT	Annapolis, MD	TFU-24GTH-R	Nov-01
WUNM	Jacksonville, NC	TFU-30DSC	Nov-01
KASW	Phoenix, AZ	TFU-24DSB-H	Dec-01
KPPX	Tolleson, AZ	TFU-28GTH	Dec-01
KRQE	Albuquerque, NM	TFU-18DSB	Dec-01
KTVK	Phoenix, AZ	TFU-24DSB-H	Dec-01
KXII	Sherman, TX	TFU-30DSC-R	Dec-01
WBPX	Boston, MA	TLP-24C	Dec-01
WCSH	Portland, ME	TFU-28DSC-R	Dec-01
WCYB	Bristol, VA	TFU-24GTH-R	Dec-01
WDAM	Laurel, MS	TLP-24M(C)	Dec-01

WDTN	Dayton, OH	TFU-30GTH-R	Dec-01
WFMJ	Youngstown, OH	TFU-26DSC	Dec-01
WFMY	Greensboro, NC	TFU-30GTH-R	Dec-01
WHEC	Rochester, NY	TFU-16DSB-H	Dec-01
WJPX	San Juan, PR	TFU-22DSC-R	Dec-01
WLTX	Columbia, SC	TFU-26DSC-R	Dec-01
WNAC	Providence, RI	TFU-24DSC-R	Dec-01
WPXU	Jacksonville, NC	TFU-30DSC-R	Dec-01
WUPW	Toledo, OH	TFU-24DSC-R	Dec-01
WGGB	Springfield, MA	TFU-20GTH	Dec-01
WKPD	Paducah, KY	TLP-16B	Dec-01
WLBZ	Bangor, ME	TFU-32DSB-B	Dec-01
WNEP	Scranton, PA	TFU-24GTH-R	Dec-01
KHBC	Hilo, HI	TUA-S1-1/1U-1	Jan-02
WATE	Knoxville, TN	TUD-O5-16/80H	Jan-02
WEIQ	Mobile, AL	TFU-30GTH	Jan-02
WKOP	Knoxville, TN	TUD-O5-16/80H	Jan-02
WPDE	Florence, SC	TFU-30GTH-R	Jan-02
WPSX	University Park, PA	TFU-34GTH-R	Jan-02
WTNZ	Knoxville, TN	TUD-O5-16/80H	Jan-02
WVBT	Virginia Beach, VA	TFU-26DSC-R	Jan-02
WVLT	Knoxville, TN	TUD-O5-16/80H	Jan-02
KCTV	Kansas City, MO	TFU-16DSB-A	Feb-02
KGIN	Grand Island, NE	TFU-30DSC-R	Feb-02
KHBS	Ft. Smith, AR	TFU-18DSC-R	Feb-02
KOLN	Lincoln, NE	TFU-30DSC-R	Feb-02
KSTW	Tacoma, WA	TLP-8B	Feb-02
KTVO	Kirkville, MO	TFU-24DSB-M	Feb-02
WABM	Birmingham, AL	TFU-26DSC-R	Feb-02
WAND	Decatur, IL	TFU-18DSC-R	Feb-02
WAPA	San Juan, PR	TFU-30DSC-R	Feb-02
WAPT	Jackson, MS	TFU-24DSC	Feb-02
WBNS	Columbus, OH	TFU-26GTH-R	Feb-02
WCMH	Columbus, OH	TFU-26GBH-R	Feb-02
WIAT	Birmingham, AL	TFU-30GTH-R	Feb-02
WLFI	Lafayette, IN	TW-7B11-R	Feb-02
WMBB	Panama City, FL	TLP-24M	Feb-02
WNPX	Nashville, TN	TLP-16M (C)	Feb-02
WOTV	Battle Creek, MI	TFU-24GTH-R	Feb-02
WRBL	Columbus, GA	TLP-16M	Feb-02
WSAV	Savannah, GA	TLP-16B	Feb-02
WTHR	Indianapolis, IN	TFU-30DSC-R	Feb-02
WTTO	Birmingham, AL	TFU-24GTH-R	Feb-02
WVTM	Birmingham, AL	TFU-30DSC-R	Feb-02

WYFF	Greenville, SC	TFU-30DSC	Feb-02
KBMT	Beaumont, TX	TLP-16A	Mar-02
KCCI	Des Moines, IA	TFU-34DSC-R	Mar-02
KFOX	El Paso, TX	TFU-24GTH-R	Mar-02
KNAZ	Flagstaff, AZ	TFU-24DSB-B	Mar-02
KTHV	Little Rock, AR	TF-8HT-HDC	Mar-02
KUSI	San Diego, CA	TLP-16C	Mar-02
KXAM	Austin, TX	TFU-30DSC-R	Mar-02
WAWS	Jacksonville, FL	TUC-P5-12/60	Mar-02
WBIQ	Birmingham, AL	TLP-24A	Mar-02
WETA	Washington, DC	TFU-28GTH-R	Mar-02
WFSG	Panama City, FL	TLP-24A (C)	Mar-02
WGRZ	Buffalo, NY	TFU-18GBH-R	Mar-02
WLRN	Pembroke Park, FL	888-32-BP/20	Mar-02
WNLO	Buffalo, NY	TFU-30DSC-R	Mar-02
WRCB	Chattanooga, TN	THA-C2-1H/2H-1-R	Mar-02
WREX	Rockford, IL	TFU-8DSB-I	Mar-02
WSFX	Wilmington, NC	DL-8	Mar-02
WTOC	Savannah, GA	TFU-24DSB	Mar-02
WVVA	Bluefield, WV	TFU-8DSB-B	Mar-02
WXMI	Grand Rapids, MI	TFU-24DSB-C190	Mar-02
WZZM	Grand Rapids, MI	TFU-32GBH	Mar-02
WGEM	Quincy, IL	TFU-8DSB-B	Apr-02
WJYS	Hammond, IN	TUA-C2-2/4H-1-S	Apr-02
WLVI	Boston, MA	TFU-24DSB-B	Apr-02
WMAZ	Macon, GA	THB-O3-3M/9H-1-R	Apr-02
WMEA	Biddeford, ME	881-24-TM	Apr-02
WPTV	West Palm Beach, FL	TFU-28GTH-R	Apr-02
WRJM	Troy, AL	DL-8	Apr-02
WSEC	Springfield, IL	TFU-24GTH-R	Apr-02
WYBE	Philadelphia, PA	TFU-30DSC-R O4	Apr-02
WYOW	Eagle River, WI	TFU-8DSB-G	Apr-02
WHBF	Rock Island, IL	DL-8	May-02
WMHT	Schenectady, NY	TUD-O5-12/60H	May-02
WOI	Ames, IA	DL-8	May-02
WRGB	Schenectady, NY	TUD-O5-12/60H	May-02
WTEN	Albany, NY	TUD-O5-12/60H	May-02
KCAU	Sioux City, IA	DL-8	May-02
KFME	Fargo, ND	TFU-18DSC-R	May-02
KFSM	Fort Smith, AR	TFU-18GTH-R	May-02
KLKN	Lincoln, NE	DL-8	May-02
WBFS	Miami, FL	TFU-30DSC-R	May-02
WBNA	Louisville, KY	THV-6A8-R S170	May-02
WEDW	Bridgeport, CT	TFU-8DSB-J	May-02

WGNT	Portsmouth, VA	TFU-30DSC-R	May-02
WKYT	Lexington, KY	THV-5A13-R	May-02
WLWT	Cincinnati, OH	TFU-30GBH-R	May-02
WOGX	Ocala, FL	TFU-24DSB-M	May-02
WOOD	Grand Rapids, MI	TW-7B7-R	May-02
WPRV	Fajardo, PR	TFU-8DSB-M	May-02
WSJV	Elkhart, IN	TFU-8DSB-I	May-02
WXOW	LaCrosse, WI	TFU-8DSB-B	May-02
KETC	St. Louis, MO	TFU-24DSB-A (C)	Jun-02
KMTV	Omaha, NE	TFU-30DSC-R	Jun-02
KTWU	Topeka, KS	TFU-26DSC-R	Jun-02
WCDC	Adams, MA	TLP-24B (C)	Jun-02
WNAB	Nashville, TN	TWSC-23C/SM	Jun-02
WNDY	Marion, IN	TFU-30DSC-R	Jun-02
WNEM	Saginaw, MI	TFU-30DSC-R	Jun-02
WOUC	Cambridge, OH	888-16 CI	Jun-02
WPSG	Philadelphia, PA	TFU-26GTH-R	Jun-02
WTIU	Bloomington, ID	TUA-SP4-8/32H	Jun-02
WTVO	Rockford, IL	TFU-26GTH-R O4	Jun-02
WWPB	Hagerstown, MD	TFU-12DSC-R P230	Jun-02
WYMT	Hazard, KY	TW-9B12-R	Jun-02
KISU	Pocatello, ID	TFU-32DSB-B	Jun-02
KTIV	Sioux City, IA	TFU-8DSB-B	Jun-02
WEWB	Albany, NY	TFU-32DSB-R	Jun-02
WOUB	Athens, OH	TUF-O4-10/40H-T-R	Jun-02
WPHL	Philadelphia, PA	TFU-24GTH-R	Jun-02
KUAT	Tucson, AZ	TUA-O4-6/24H	Jul-02
WACH	Columbia, SC	TFU-24DSB-M (C)	Jul-02
WCET	Cincinnati, OH	TFU-26DSC-R	Jul-02
WFIQ	Florence, AL	888-32	Jul-02
WGIQ	Louisville, AL	TFU-36DSC-R	Jul-02
WIPR	San Juan, PR	TFU-30DSC-R	Jul-02
WLEF	Park Falls, WI	TFU-24DSB-A	Jul-02
WLII	San Juan, PR	TFU-16DSB-J	Jul-02
WLWC	New Bedford, MA	TFU-24DSC-R S180	Jul-02
WNED	Buffalo, NY	TUC-O5-16/80H	Jul-02
WORA	Mayaguez, PR	TFU-24DSB-A	Jul-02
WSUR	Ponce, PR	TFU-16DSB-M	Jul-02
KRCR	Redding, CA	TFU-8DSB-C	Jul-02
WTVM	Columbus, GA	TFU-16DSB-M (C)	Jul-02
WDBB	Tuscaloosa, AL	TFU-26ETT-R	Aug-02
WHNS	Asheville, NC	TFU-30DSC CT180SP	Aug-02
WJCT	Jacksonville, FL	TFU-26GBH-06SP	Aug-02
WKAR	E. Lansing, MI	888-32 08	Aug-02

WNPX	Nashville, TN	TFU-18DSC-R	Aug-02
WSAZ	Huntington, WV	TFU-20DSC-R 04	Aug-02
WTVX	Ft. Pierce, FL	TFU-18DSC	Aug-02
WWLP	Springfield, MA	THA-O6SP	Aug-02
KREM	Spokane, WA	TFU-24DSB-H (C)	Aug-02
KRXI	Reno, NV	TFU-24DSB-J	Aug-02
WCBD	Charleston, SC	TLP-8H	Aug-02
WCTX	New Haven, CT	TFU-16DSB-B(C)	Aug-02
WEAR	Pensacola, FL	TFU-28GTH 06SP	Aug-02
KELO	Sioux Falls, SD	TUC-O5-16/80H-1-B	Sep-02
KRRT	San Antonio, TX	TFU-24GTH-R	Sep-02
KVVU	Henderson, NV	TW-9B9-R	Sep-02
WCGV	Milwaukee, WI	TFU-28DSC-R	Sep-02
WLJC	Beattyville, KY	TW-9B7-R	Sep-02
WMAB	Ackerman, MS	TW-7B10-R	Sep-02
WMAH	McHenry, MS	881-32	Sep-02
WMAV	Oxford, MS	881-32	Sep-02
WMED	Calais, ME	TW-7B10-R	Sep-02
WTEV	Jacksonville, FL	TUC-P5-12/60	Sep-02
WVTV	Milwaukee, WI	TFU-24DSB-H(C)	Sep-02
KBIM	Roswell, NM	DL-8	Sep-02
KBJR	Duluth, MN	TFU-20GTH-R	Sep-02
KBSI	Cape Girardeau, MO	DL-8	Sep-02
KFBT	Las Vegas, NV	DL-8	Sep-02
KHON	Honolulu, HI	DL-8	Sep-02
KOCB	Oklahoma City, OK	DL-8	Sep-02
KOKH	Oklahoma City, OK	DL-8	Sep-02
KPTS	Hutchinson, KS	TLP-32A	Sep-02
KSNC	Great Bend, KS	DL-8	Sep-02
KSNG	Garden City, KS	DL-8	Sep-02
KSNT	Topeka, KS	DL-8	Sep-02
KSNW	Wichita, KS	DL-8	Sep-02
KVWB	Las Vegas, NV	DL-8	Sep-02
KVWB	Las Vegas, NV	TUA-C4-12/48	Sep-02
WCHS	Charleston, WV	DL-8	Sep-02
WICD	Champaign, IL	DL-8	Sep-02
WLUC	Marquette, MI	TLP-24M (C)	Sep-02
WMAU	Bude, MS	TFU-28GTH 04	Sep-02
WMMP	Charleston, SC	DL-8	Sep-02
WRAY	Wilson, NC	881-32	Sep-02
WSYT	Syracuse, NY	DL-8	Sep-02
WSYX	Columbus, OH	THB-1/1	Sep-02
WSYX	Columbus, OH	TW-12B13-R	Sep-02
WTAT	Charleston, SC	DL-8	Sep-02

WTHI	Terre Haute, IN	DL-8	Sep-02
WTTE	Columbus, OH	DL-8	Sep-02
WTTE	Columbus, OH	TFU-30GBH-R 08	Sep-02
WUPL	New Orleans, LA	DL-8	Sep-02
WVAH	Charleston, WV	DL-8	Sep-02
WVUE	New Orleans, LA	DL-8	Sep-02
WWHO	Chillicothe, OH	TFU-30DSC-R	Sep-02
KATV	Little Rock, AR	TLP-32E	Oct-02
KETV	Omaha, NE	DL-8	Oct-02
KUAS	Tucson, AZ	TFU-16GBH-R	Oct-02
WAGT	Augusta, GA	TFU-28GTH	Oct-02
WPXE	Kenosha, WI	TFU-18DSC-R	Oct-02
WSKG	Binghamton, NY	888-24	Oct-02
WTTA	St. Petersburg, FL	TFU-20DSB-M (C)	Oct-02
WUHF	Rochester, NY	TFU-24GTH-R	Oct-02
KABB	San Antonio, TX	TFU-30DSC-R	Nov-02
WCHS	Charleston, WV	TFU-24DSB-I (C)	Nov-02
WCML	Alpena, MI	TUF-P4-12/48H-1-T	Nov-02
WCMU	Mount Pleasant, MI	TUF-P4-12/48H-1-T	Nov-02
WCMV	Traverse City, MI	TUF-P4-12/48H-1-T	Nov-02
WCMW	Traverse City, MI	TUF-P4-12/48H-1-T	Nov-02
WGKI	Traverse City, MI	TUF-P4-12/48H-1-T	Nov-02
WGTU	Traverse City, MI	TUF-P4-12/48H-1-T	Nov-02
WVAH	Charleston, WV	TFU-24DSB-I (C)	Nov-02
WCIQ	Mt. Cheaha, AL	TLP-24A	Nov-02
WTTV	Indianapolis, IN	DL-8	Nov-02
KWHB	Tulsa, OK	DL-8	Nov-02
KWHD	Elizabeth, CO	DL-8	Nov-02
WSJK	Knoxville, TN	DL-8	Nov-02
WUNJ	Wilmington, NC	TFU-30GTH-R 04	Nov-02
KLPB	Lafayette, LA	TFU-10DSC C170	Nov-02
WBSC	Anderson, SC	TFU-16DSC-R	Nov-02
WPXP	Lake Worth, FL	TFU-26DSC P230	Nov-02
KUSA	Denver, CO	TLP-8G	Nov-02
KSEE	Fresno, CA	TFU-10DSC-R C170	Nov-02
WJWN	San Sebastian, PR	TLP-24 C250	Nov-02
KVUE	Austin, TX	TFU-29JTH-R 04	Nov-02
KOCO	Oklahoma City, OK	THV-6A7-R C170SP	Dec-02
WBDC	Washington, DC	TFU-30ETT 06	Dec-02
WCEU	Daytona Beach, FL	888-32	Dec-02
WSIU	Carbondale, IL	TUV-32GTH/13HV	Dec-02
KLRU	Austin, TX	TFU-24GTH-R 04	Dec-02
WBFF	Baltimore, MD	TFU-14GTH/VP-R 06 DC	Dec-02
WPSX	Clearfield, PA	TLP-16J	Dec-02

KWHH	Honolulu, HI	DL-8	Dec-02
KMCI	Lawrence, KS	TFU-20DSC-R 2C230	Dec-02
KOKH	Oklahoma City, OK	TFU-30GTH-R 6T170 DC	Dec-02
KSHB	Kansas City, MO	TFU-30DSC-R 4C130 DC	Dec-02
WFSU	Tallahassee, FL	TFU-30GTH 04	Dec-02
WDCP	University Center, MI	TFU-20GTH-R 04	Dec-02
KOCB	Oklahoma City, OK	TFU-30GBH-R 08 DC	Dec-02
KMOH	Kingman, AZ	TFU-24DSB-H	Dec-02
WITN	Washington, NC	TFU-30GTH-R 04	Dec-02
KTUL	Tulsa, OK	THV-5A10-R C170 SM	Dec-02
KBAK	Bakersfield, CA	TFU-18GTH-R 1CT185	Dec-02
KLRN	San Antonio, TX	THV-6A8-C140	Dec-02
KAMU	College Station, TX	THB-O3-1H/3H-1	Jan-03
WCTV	Tallahassee, FL	TFU-30DSC-R 04	Jan-03
WIPB	Muncie, IN	TUA-O4-12/48-1-T	Jan-03
KHRR	Tuscon, AZ	TLP-8M	Jan-03
WPGA	Perry, GA	TLP-16J (C)	Jan-03
KEYE	Austin, TX	TFU-31EBT/VP-R 08	Jan-03
WJFB	Lebanon, TN	TFU-29JTH-R 04	Jan-03
KOED	Tulsa, OK	TFU-33JSC-R 04	Jan-03
KOET	Eufaula, OK	TFU-31JSC-R 04	Jan-03
KZJL	Houston, TX	TFU-30DSC-R C170	Jan-03
WWDP	Norell, MA	TFU-30GTH-R 04	Jan-03
KIFI	Idaho Falls, ID	TF-12HT	Feb-03
KTNW	Richland, WA	TLP-8F	Feb-03
KAMC	Lubbock, TX	DL-8	Feb-03
KARD	West Monroe, LA	DL-8	Feb-03
KDEB	Springfield, MO	DL-8	Feb-03
KHMT	Billings, MT	DL-8	Feb-03
KLBK	Lubbock, TX	DL-8	Feb-03
KOLR	Springfield, MO	DL-8	Feb-03
KSVI	Billings, MT	DL-8	Feb-03
WFFT	Fort Wayne, IN	DL-8	Feb-03
WHAG	Hagerstown, MD	DL-8	Feb-03
WTVW	Evansville, IN	DL-8	Feb-03
KWGN	Denver, CO	TFU-12DSC-R C170	Feb-03
KTXT	Lubbock, TX	TFU-22DSC-R C170	Feb-03
KXRM	Colorado Springs, CO	TFU-12DSB-J	Feb-03
WIPX	Bloomington, IL	TFU-18DSC-R 03	Feb-03
WPXM	Miami, FL	TFU-18DSC P230	Feb-03
KIPT	Twin Falls, ID	TLP-24B (C)	Feb-03
WPPX	Philadelphia, PA	TFU-20DSC-R P230	Feb-03
KMAX	Sacramento, CA	TUG-O5-16/80H-2-B	Mar-03
KCRA	Sacramento, CA	TUG-O5-16/80H-2-B	Mar-03

KVTN	Pine Bluff, AR	TLP-16J	Mar-03
KAPP	Yakima, WA	TFU-24DSB-M	Mar-03
KVEV	Kennewick, WA	TFU-24DSB-H	Mar-03
WTVJ	Miami, FL	TFU-20GTH 04	Mar-03
KCLO	Rapid City, SD	TFU-20GTH-R CT160	Mar-03
WECT	Wilmington, NC	TFU-24DSB-M (C)	Mar-03
KEDT	Corpus Christi, TX	TFU-30DSC-R C170	Mar-03
WBKI	Campbellsville, KY	DL-8	Mar-03
WHTJ	Charlottesville, VA	TFU-16DSB-B (C)	Mar-03
WKPV	Puerto Rico	TLP-32M	Mar-03
WNNE	Hartford, VT	TFU-10DSC-R P230	Mar-03
WNYO	Buffalo, NY	TFU-24DSB-M (C)	Mar-03
WPTO	Oxford, OH	TFU-24DSB-H (C)	Mar-03
WSAW	Wausau, WI	TFU-10GTH-R 4C150	Mar-03
WPTA	Ft. Wayne, IN	TUA-O4-10/40H-1	Apr-03
WNCF	Montgomery, AL	DL-8	Apr-03
WICD	Champaign, IL	TFU-24DSB-I (C)	Apr-03
WICS	Springfield, IL	TFU-24DSB-I (C)	Apr-03
WNPB	Morgantown, WV	881-24	Apr-03
WNJX	Puerto Rico	TLP-8M	May-03
WKBW	Buffalo, NY	TUV-32GTH/10HV-R	May-03
KCGE	Crookston, MN	TFU-16GTH-R C170	May-03
KSRE	Minot, ND	881-24	May-03
WPGX	Panama City, FL	TLS-V	May-03
WTLW	Lima, OH	TLP-24A	May-03
KDUH	Scottsbluff, NE	TW-9B7-R	May-03
WTOM	Cheboygan, MI	TLP-24M	May-03
WJAR	Providence, RI	TFU-24DSB-R	Jun-03
WIPM	Mayaguez, PR	TFU-22GBH	Jun-03
WPXN	New York, NY	TFU-24DSC-R	Jun-03
WDAZ	Devils Lake, ND	DL-8	Jun-03
KFYR	Bismarck, ND	TFU-24DSB-M	Jun-03
WTTK	Kokomo, IN	DL-8	Jun-03
KDSE	Dickinson, NC	881-24	Jun-03
KWSE	Dickinson, NC	881-24	Jun-03
WLJT	Beech Bluff, TN	TLP-12B	Jun-03
WNEO	Alliance, OH	TFU-24DSC-R	Jun-03
WXXI	Rochester, NY	TFU-16DSB-M	Jun-03
KCKA	Tacoma, WA	TLP-12A	Jun-03
KLTL	Kinder, LA	TFU-10DSC C170	Jun-03
KUFM	Missoula, MT	TLP-8I	Jun-03
WNVC	Fairfax, VA	DL-8	Jun-03
WPXN	New York, NY	TVU--20DSB-R S260DC	Jun-03

WSET	Lynchburg, VA	TFU-30DSC-R 04	Jun-03
WTJX	Virgin Islands	TLP-8S180	Jun-03
WPRI	Providence, RI	TF-12HT DC	Jul-03
WLAJ	Lansing, MI	TUF-C4-10/40H-1-T	Jul-03
KSKN	Spokane, WA	TFU-24DSB-E	Aug-03
KSMN	Worthington, MN	TFU-24DSC-R S180	Aug-03
WGVK	Kalamazoo, MI	TF-4MT-H	Aug-03
WVIT	West Hartford, CT	TFU-22GTH/VP-R	Aug-03
WOSU	Columbus, OH	TFU-20GTH-R 04	Aug-03
WNVT	Goldvein, VA	TFU-26GTH-R 04	Aug-03
WPBO	Portsmouth, OH	TFU-26GTH-H 04 DC	Aug-03
KBSI	Cape Girardeau, MO	TFU-26GTH-R 3S220 DC	Sep-03
KTMD	Houston, TX	TFU-24DSB-D	Sep-03
KTSC	Denver, CO	TFU-16DSB-J	Sep-03
KXLF	Butte, MT	TF-6MT DC	Sep-03
WBGU	Bowling Green, OH	TUF-O4-14/56H-1-T-R	Sep-03
WEMT	Greenville, TN	TFU-25ETT-R 3BP250	Sep-03
WGVU	Grand Rapids, MI	TF-8HS-H P200	Sep-03
WMHT	Schenectady, NY	TFU-16DSB-M	Sep-03
WNJN	Montclair, NJ	TFU-16DSB-B	Sep-03
WNPI	Norwood, NY	TFU-16DSB-B R	Sep-03
WPBS	Watertown, NY	TFU-16DSB-B R	Sep-03
WKNO	Memphis, TN	TUV-32GTH/13HV-R 06/03	Sep-03
WTVH	Syracuse, NY	TFU-30GTH-R 04	Sep-03
KLPA	Alexandria, LA	TFU-25ETT-H S200 DC	Sep-03
WDWB	Detroit, MI	TFU-23ETT-R CT3 DC	Sep-03
WCFE	Plattsburgh, NY	TFU-8DSB-M	Oct-03
WANE	Fort Wayne, IN	TLP-8B	Oct-03
KRMJ	Denver, CO	TFU-8DSB-M	Oct-03
WNJS	Southwick, MA	TFU-16DSB-B (C)	Oct-03
WMAE	Booneville, MS	TLP-24A	Nov-03
WNJX	Puerto Rico	TFU-14GTH C170 DC	Nov-03
WRJA	Columbia, SC	TFU-35ETT-H O4 DC	Nov-03
WUFT	Gainesville, FL	TUV-30GTH/4M-R O8/O4	Nov-03
WUTV	Buffalo, NY	TLP-8A-R (S)	Nov-03
WCFT	Hoover, AL	THA-S4-2/8-1-R	Dec-03
WILL	Champaign, IL	TF-12HT-H DC (s)	Dec-03
WPSD	Paducha, KY	TUV-36GTH/4M-R O4/O4	Dec-03
WQED	Pittsburg, PA	888-32	Dec-03
WSAV	Savannah, GA	TUV-28GTH/3L-R	Dec-03
WSBE	Providence, RI	TLP-24D/CP	Dec-03
WYPX	Amsterdam, NY	TFU-18DSC-R S180	Dec-03
WXEL	West Palm Beach, FL	TUA-SP4-12/48H-1-S-R	Dec-03

KSWO	Southlake, TX	TLS-V4-S170	Jan-04
KWES	Odessa, TX	TLS-V4-S170	Jan-04
WFPT	Frederick, MD	TUF-C4SP-6/16-1-T	Jan-04
KSNW	Wichita, KS	TFU-30GTH-R O4	Feb-04
WFSB	Hartford, CT	TFU-26GTH-R 6T130	Mar-04
KPXG	Portland, OR	THP-04-2/8-1-R	Mar-04
WHMC	Conway, SC	THB-O3-3H/9HD-1-R	Mar-04
KTIN	Fort Dodge, IA	TLP-12M	Mar-04
KIIN	Iowa City, IA	TLP-12M	Apr-04
KQIN	Davenport, IA	TLP-12M	Apr-04
KWCM	Appleton, MN	TFU-28DSC-R C170	Apr-04
KYIN	Mason City, IA	TLP-12M	Apr-04
WHTM	Harrisburg, PA	THV-6A10-R S190	Apr-04
WMMP	Charleston, SC	TUD-P5SP-16/48-1-B	Apr-04
WQPX	Scranton, PA	TFU-16DSC-R	Apr-04
KSWB	San Diego, CA	TFU-30GTH/VP-R S180	Apr-04
KUSM	Bozeman, MT	THA-P2-2H/4H	Apr-04
WHIO	Dayton, OH	TFU-28DSC-R CT3	Apr-04
WCBD	Charleston, SC	TUD-P5SP-16/48-1-B	Apr-04
WTTD	Hampton, VA	TLP-4 S254	Apr-04
KSPX	Sacramento, CA	TFU-24DSC-R CT150	Apr-04
WTAT	Charleston, SC	TUD-P5SP-16/48-1-B	Apr-04
KLSB	Ponta, TX	TAD-32UDA-3/48P	May-04
WDKY	Danville, KY	TUA-32DSB/VP-R	May-04
KTOO	Juneau, AL	TF-2HT-H	May-04
WEAO	Akron, OH	TFU-28GTH-R O4 DC	Jun-04
WVIR	Charlottesville, VA	TFU-26GTH-R 04SP	Jun-04
WNAC	Providence, RI	TFU-24DSB-M (S)	Jun-04
WGBA/WACY	Green Bay, WI	TUA-CA-8/32H-1T	Jun-04
WTAE	Pittsburg, PA	TFU-30DSC-R CT150	Jun-04
KRIS	Corpus Christi, TX	TLS-V8	Jun-04
WJHG	Panama City, FL	THB-C3SP-3H/9H-1	Jun-04
WNJU	Teterboro, NJ	DL-12	Jun-04
WMAK	Knoxville, TN	THV-11A7-R C160 SM	Jun-04
KNMD	Santa Fe, NM	TLS-V2-R	Jul-04
WRCB	Chattanooga, TN	THA-SP4-4H/12H-1-RN	Jul-04
WVIZ	Cleveland, OH	DL-12	Jul-04
WRLK	Columbia, SC	TUF-O4-12/48H-1-T	Jul-04
KHNL	Honolulu, HI	TUA-C1-1/1H-1-S	Aug-04
KWAB	Big Spring, TX	TFU-24DSB-I	Aug-04
WBUW	Madison, WI	TUA-O4-10/40H-1-S-R	Aug-04
KHAW	Hilo, HI	DL-8	Aug-04
WNPI	Norwood, NY	TUF-O4-10/40H-1-T	Aug-04

KAVU	Victoria, TX	TUA-04SP-14/55H-1-T-R	Sep-04
KMPX	Decatur, TX	TFU-30DSC-R 4S200 DC	Sep-04
KSTW	Tacoma, WA	TUV-24/8GTH-R SP210/190	Sep-04
WAKA	Selma, AL	TFU-30DSC-R	Sep-04
WBTV	Charlotte, NC	THA-C3SP-2L/6H-1-R	Sep-04
WHDF	Florence, AL	TFU-30DSC-R	Sep-04
WJWN	San Sebastian, PR	TFU-24DSB-M (C) DC	Sep-04
WKPV	Ponce, PR	TFU-24DSB-J (C) DC	Sep-04
WTIN	Ponce, PR	TLP-24C (C) DC	Sep-04
WJPM	Florence, SC	TUF-O4-14/56H-1-T	Sep-04
KXJB	Valley City, ND	TFU-32DSB-M (C)	Sep-04
KVLY	Fargo, ND	TFU-32DSB-J (C)	Sep-04
KETV	Omaha, NE	TFU-28GBH-R O8	Oct-04
KETV	Omaha, NE	TUV-30GTH/14HV-R O6/O3	Oct-04
WDKY	Danville, KY	THB-C3-5M/15H-1-R	Oct-04
WLMB	Toledo, OH	THA-S4SP-2M/8H-1-R	Oct-04
WIRS	Yauco, PR	TFU-24DSB-A DC	Oct-04
WHDF	Florence, AL	DL-8	Nov-04
WNEH	Greenwood, SC	TUF-O4-14/56H-1-T	Nov-04
WTSP	Tampa-St. Petersburg, FL	THV-11A10 C150	Nov-04
WGPT	Oakland, MD	TLP-16M (C)	Dec-04
KPXN	San Bernadino, CA	TFU-26DSC-R C170	Dec-04
WPXQ	Block Island, RI	TFU-15JTH-R C170	Dec-04
WRET	Spartanburn, SC	TUF-O4-14/56H-1-T	Dec-04
KWHB	Tulsa, OK	TFU-24DSC-R C170 DC	Dec-04
WHMB	Indianapolis, IN	TFU-10DSC-R S180	Dec-04
WLAE	Chalmette, LA	TLP-16M (C)	Dec-04
KDBC	El Paso, TX	TFU-12DSC-R C170	Jan-05
KGMD	Hilo, HI	THA-C2-2H/4H-1	Jan-05
WJSU	Anniston, AL	THV-6A9-R S190 SM	Jan-05
KWCH	Hutchison, KS	TFU-30DSC-R O4	Feb-05
WAIQ	Montgomery, AL	TFU-36GTH-R O4	Feb-05
WOUC	Cambridge, OH	TUF-C4SP-7/28HSP-1-T	Feb-05
KBIN	Council Bluffs, IA	TFU-26GTH-R O4	Mar-05
KECY	El Centro, CA	TLP-24N	Mar-05
KESQ	Palm Springs, CA	TFU-16DSB-M	Mar-05
KRDO	Colorado Springs, CO	TFU-16DSB-J	Mar-05
WEBA	Allendale, SC	TUF-C4SP-12/48H-1-T	Mar-05
KCTV	Kansas City, MO	TFU-30DSC-R 4C140	Mar-05
WDEF	Chattanooga, TN	TFU-30DSC-R O4	Mar-05
WDFX	Ozark, AL	TFU-28ETT-R 4C190 DC	Mar-05
WFLI	Cleveland, TN	TFU-30DSC-R C140	Mar-05
WLCB	Leesburg, FL	TFU-27ETT-R 4C220 DC	Mar-05

WSTE	Ponce, PR	THB-C2-3H/6HD-1 DC	Mar-05
WSFJ	Columbus, OH	TFU-21JTT-R 4C140	Apr-05
KAKE	Wichita, KS	TUV-28GTH/10HV-R O6/O3	Apr-05
WSJV	Elkhart, IN	TFU-24DSB-A (SP)	Apr-05
WSLS	Roanoke, VA	TFU-30DSC-R C170	Apr-05
WVER	Rutland, VT	THV-6A9/VP-R C160 SM	Apr-05
WXVT	Greenville, MS	TFU-29JTH 04	Apr-05
KTBC	Austin, TX	TFU-26DSC-R 04	May-05
WCFE	Plattsburgh, NY	TUF-C4SP-5/16H-1-T	May-05
WHBF	Rock Island, IL	TFU-32DSB-R-03	May-05
WOI-DT	Ames, IA	TFU-32DSB-R-03	May-05
KMDE	Devil's Lake, ND	TFU-30GTH-R O4	May-05
WFBD	Destin, FL	TFU-28DSC S200	May-05
WKRG	Mobile, AL	TFU-22GTH-R 4C160	May-05
WSBT	South Bend, IN	TUA-04-16/64H-1-T-R	May-05
KFCT	Denver, CO	TLP-16A C DC	Jun-05
KFXA	Cedar Rapids, IA	TFU-30GTH-R 4P210	Jun-05
KNBC	Mount Wilson, CA	TFU-16DSB-M (C)	Jun-05
KWHD	Elizabeth, CO	TFU-10DSC-R C170	Jun-05
WACX	Orlando, FL	TUD-C5SP-16/64H-2-B	Jun-05
WCJB	Gainesville, FL	TFU-24DSB-O	Jun-05
WFTE	Salem, IN	TUE-05/C5SP-13/65U-3-T	Jun-05
WJHL	Johnson City, TN	TFU-30DSC-R 04	Jun-05
WKPT	Kingsport, TN	TLP-16E	Jun-05
WLEX	Lexington, KY	TFU-30DSC-R 3S/80 DC	Jun-05
WLOS	Asheville, NC	TFU-24DSB-M-R	Jun-05
WSYT	Syracuse, NY	TFU-16DSB-R S180SP	Jun-05
WTVQ	Lexington, KY	TFU-30DSC-R 3S/80 DC	Jun-05
WVUE	New Orleans, LA	TFU-24DSB-M	Jun-05
WVUE	New Orleans, LA	TLP-8B	Jun-05
KDLT	Sioux Falls, SD	TFU-36GTH-R 04	Jun-05
KTLA	Los Angeles, CA	TFU-28DSC/VP-R CT170SP	Jun-05
WBRC	Birmingham, AL	TFU-30DSC-R 04	Jun-05
WDJT	Milwaukee, WI	TFU-23ETT-R CT3	Jun-05
WDRB	Louisville, KY	TFU-32DSB-R 04	Jun-05
WJTV	Jackson, MS	TFU-30DSC-R 04	Jun-05
KGUN	Tucson, AZ	TFU-16DSB-B SP	Jul-05
KPVI	Pocatello, ID	TFU-24JTH-R S260	Jul-05
KPXJ	Shreveport, LA	TFU-26DSC-R S200	Jul-05
WDAF	Kansas City, MO	TFU-28GTH-R 04	Jul-05
WETP	Sneedville, TN	TFU-30GTH-R 06	Jul-05
KHET	Honolulu, HI	TLP-8E	Jul-05
KACB	New Iberia, LA	TFU-31JTH 6T180	Aug-05

KNTV	San Jose, CA	THA-MC2-3H/6H-1	Aug-05
KNTV	San Jose, CA	THV-6A12/VP-R	Aug-05
WITI	Milwaukee, WI	TFU-24JSC/VP-R 4C160	Aug-05
WKBT	LaCrosse, WI	TUV-32GTH/13HV-R 06/03	Aug-05
WINK	Fort Myers, FL	TW-6B9 (S)/TF-8HS	Aug-05
WPBS	Watertown, NY	TFU-04-10/40T-R	Aug-05
KARK	Little Rock, AR	TFU-32DSB-R 03	Sep-05
KNWA	Rogers, AR	TFU-34EST-R 04 DC	Sep-05
KOAA	Pueblo, CO	TFU-16DSB-R C270 SP	Sep-05
WHBQ	Memphis, TN	TFU-34JSC-R 03	Sep-05
WHME	South Bend, IN	TFU-10DSC-R T160	Sep-05
WILX	Lansing, MI	TFU-31JSC-R 04	Sep-05
WMFP	Boston, MA	TFU-30DSC-R C170	Sep-05
WSKC	Atlanta, GA	TLP-12 C380	Sep-05
WTHI	Terre Haute, IN	TLP-24DB	Sep-05
KSNT	Topeka, KS	TFU-26GTH-H 04 DC	Oct-05
WEUX	Chippewa Falls, WI	DL-8	Oct-05
WGHP	High Point, NC	TFU-34DSC-R 04	Oct-05
WNSC	Rock Hill, SC	TUF-C4SP-12/48H-1-T	Oct-05
WNYS	Syracuse, NY	TFU-16DSB-R C170	Oct-05
WSMH	Flint, MI	TFU-8DSB-A-R	Oct-05
WJWJ	Beaufort, SC	TFU-8DSB-A-R	Oct-05
KAUT	Oklahoma City, OK	TFU-30DSC-R 03	Nov-05
KRTV	Great Falls, MT	TLS-V8-R	Nov-05
WFXR	Roanoke, VA	TFU-22JSC-R C180	Nov-05
WGHP	High Point, NC	TFU-2ST-R S190	Nov-05
WKBN	Youngstown, OH	TFU-23JTH-R 04	Nov-05
WOAC	Canton, OH	TFU-28DSC-R C170	Nov-05
WVEN	Leesburg, FL	TFU-24DSB-A	Nov-05
KINC	Las Vegas, NV	TFU-22DSC-R 4S250	Dec-05
KINT	El Paso, TX	TFU-32DSC-R CT310SP	Dec-05
KPAX	Missoula, MT	TF-10HT-H DC	Dec-05
KTVQ	Billings, MT	TF-6HT-H DC	Dec-05
KTXH	Houston, TX	TFU-24WB-R WC	Dec-05
KULR	Billings, MT	TF-6HT-H DC	Dec-05
TV Vanguarda	Sao Jose Campos, Brazil	TUA-O4SP-2/8U-1-T	Dec-05
WFXL	Albany, GA	THV-12A12-R C170	Dec-05
WJWB	Jacksonville, FL	TFU-28GTH-R 6T170	Dec-05
WPXC	Brunswick, GA	TFU-26DSC-R C170	Dec-05
WVEA	Venice, FL	TFU-26DSC-R BP220	Dec-05
WVTB	St. Johnsbury, VT	TUA-04-12/48-1-R-T	Dec-05
WUPV	Ashland, VA	TFU-28JSC-R S200	Jan-06
WXTX	Columbus, GA	TFU-20DSC-R P230	Jan-06

WASV	Asheville, NC	TFU-26GTH-R 04	Feb-06
WJBF	Augusta, GA	TFU-24GTH-R 04	Feb-06
KALB	Alexandria, LA	TFU-30GTH-R 04	Mar-06
KBMT	Beaumont, TX	TLP-24H (C)	Mar-06
KFQX	Grand Junction, CO	TUA-C2-3/6L-1-N	Mar-06
KIII	Corpus Christi, TX	THV-11A8 C135	Mar-06
KREG	Glenwood Springs, CO	TLP-12M	Mar-06
KREX	Grand Junction, CO	THA-04-1/4-1	Mar-06
KREY	Montrose, CO	THA-S4-2/8-1-N	Mar-06
KRSC	Claremore, OK	TFU-29ETT-R S200 DC	Mar-06
KTIV	Sioux City, IA	TFU-30JTH-R 04	Mar-06
KUSI	San Diego, CA	TFU-24GTH-R S180	Mar-06
WBXH	Baton Rouge, LA	TLP-12M	Mar-06
WLTZ	Columbus, GA	TLP-16A (C)	Mar-06
WPME	Lewiston, ME	TLP-16B (C)	Mar-06
WPXT	Portland, ME	TLP-16B-R (C)	Mar-06
WSWG	Valdosta, GA	TLP-16J (C)	Mar-06
WTOK	Meridian, MS	TFU-24DSB-A (C)	Mar-06
WTTV	Indianapolis, IN	TFU-24DSB-R C260	Mar-06
WVCY	Milwaukee, WI	TFU-31JSC-R C170	Mar-06
KAPP	Yakima, WA	TUF-04-12/48H-1-T	Apr-06
KDTP	Phoenix, AZ	TFU-16JSC C165SP	Apr-06
KNSO	Merced, CA	THA-C2-2M/4H	Apr-06
WBTW	Florence, SC	TFU-30DSC-R 4C140	Apr-06
WRBL	Columbus, GA	TFU-30GTH-R 04	Apr-06
WREX	Rockford, IL	TFU-16DSB-C-R	Apr-06
KIIN	Iowa City, IA	TUV-32GTH/14HV-R 06/03	May-06
KQDS	Duluth, MN	TFU-20GTH-R 04	May-06
KTEN	Ada, OK	TFU-32DSB-R 03	May-06
KVOS	Billingham, WA	TFU-31JTH-R 04SP	May-06
KVRR	Fargo, ND	TFU-24DSC-R P290	May-06
WALB	Albany, GA	TFU-24DSB-M (C)	May-06
WCAX	Burlington, VT	TUP-04-10/40H-2-R, TUP-04/8U-1-R	May-06
WGEM	Quincy, IL	TFU-24DSB-B (C)	May-06
WMBB	Panama City, FL	TFU-28DSC C170	May-06
WMBC	Newton, NJ	TFU-16GTH-R 2S350	May-06
WNJN	Montclair, NJ	TFU-30GBH-R 08 DC	May-06
WNYO	Buffalo, NY	TFU-16DSB-R-R	May-06
WPTZ	Plattsburgh, NY	TUP-04-10/40H-2-R, TUP-04/8U-1-R	May-06
WUTV	Buffalo, NY	TFU-16DSB-E-R	May-06
KBLR	Paradise, NV	TLP-16E SP (C)	Jun-06
KDEN	Longmont, CO	TFU-24ETT/VP-R CT220 SP	Jun-06
KFTA	Fort Smith, AR	TFU-24DSB-R CT150 (C)	Jun-06

KIEM	Eureka, CA	TLP-12I	Jun-06
KLUZ	Albuquerque, NM	TFU-19ETT-R P230	Jun-06
KSBY	San Luis Obispo, CA	TFU-22DSC-R BP285	Jun-06
KSMS	Monterey, CA	TFU-24DSB-R 3BP290SP	Jun-06
KSTU	Salt Lake City, UT	TFU-12JTH-R CT220	Jun-06
KTFD	Boulder, CO	TFU-22DSC-R 2C200 DC	Jun-06
WCIA	Champaign, IL	TFU-32DSB-R 03	Jun-06
WENY	Elmira, NY	TUA-C4SP-8/28M-1-T	Jun-06
WHYY	Wilmington, DE	TLP-16D SP	Jun-06
WSFJ	Columbus, OH	TFU-23ETT-R 4C140	Jun-06
WSKA	Corning, NY	TUA-C4SP-8/28M-1-T	Jun-06
WYDC	Corning, NY	TUA-C4SP-8/28M-1-T	Jun-06
KLKN	Lincoln, NE	TFU-32DSB-A (C)	Jul-06
KTIN	Fort Dodge, IA	TUA-C4-16/64H-1-R-T	Jul-06
KTRE	Lufkin, TX	TF-8HT DC	Jul-06
WETK	Burlington, VT	TUP-04-10/40H-1-R	Jul-06
WMBD	Peoria, IL	TFU-30GTH-R 6T170 DC	Jul-06
WVVA	Bluefield, WV	TFU-24JTH-R 04	Jul-06
KEPR	Pasco, WA	TLP-8A	Aug-06
KIDK	Idaho Falls, ID	TFU-22DSC-R C170	Aug-06
KTAL	Texarkana, TX	TFU-32DSB-R 03	Aug-06
WDCA	Washington, DC	TUA-04-2/8-1, TUC-05-16/80H-1-B (C)	Aug-06
WFMJ	Youngstown, OH	TFU-27ETT-R 4C150SP DC	Aug-06
WGSA	Baxley, GA	TFU-32DSB-G	Aug-06
WNJS	Camden, NJ	TFU-30GBH-R 06 DC	Aug-06
WTTG	Washington, DC	TUA-04-2/8-1, TUC-05-16/80H-1-B (C)	Aug-06
KAEF	Arcata, CA	TLP-12-R C170	Sep-06
KATV	Little Rock, AR	TFU-30GTH-R 04	Sep-06
KTBY	Anchorage, AK	TFU-14DSB-C (SP)	Sep-06
KYIN	Mason City, IA	TFU-22DSC-R 4P320	Sep-06
WCBS	New York, NY	TUD-C5SP-10/34U-2-B	Sep-06
WNBC	New York, NY	TUD-C5SP-10/34U-2-B	Sep-06
WNJB	New Brunswick, NJ	TUV-32GTH/6HV-R 06/S190	Sep-06
WNJU	Linden, NJ	TUD-C5SP-10/34U-2-B	Sep-06
WNYW	New York, NY	TUD-C5SP-10/34U-2-B	Sep-06
WOAY	Oak Hill, WV	TFU-32DSB-A	Sep-06
WQRF	Rockford, IL	TFU-25JSC-R P210SP	Sep-06
WTVW	Evansville, IN	TFU-29JSC-R T170	Sep-06
KATC	Lafayette, LA	TFU-30GTH-R 04 SP	Oct-06
WFXB	Myrtle Beach, SC	TFU-26GTH-R T180	Oct-06
WPCW	Jeannette, PA	TFU-24GTH/VP-R 06	Oct-06
WSAH	Bridgeport, CT	TUA-C4SP-10/32H-1-R-B, TFU-26JTH-R 04	Oct-06
KLTV	Tyler, TX	TF-12HT-H DC	Nov-06

WJAL	Hagerstown, MD	TLP-16M	Nov-06
KUSM	Bozeman, MT	TFU-16DSB-B	Dec-06
WHIZ	Zanesville, OH	TUF-04-10/40H-1-T	Dec-06
WTVM	Columbus, GA	TFU-32DSB-A-R	Dec-06
WXXV	Gulfport, MS	TFU-31JSC T180	Dec-06
KCAU	Sioux City, IA	TFU-32DSB-A-R (C) SP	Jan-07
KAIL	Honolulu, HI	THA-P2SP-4H/8H-1-B	Mar-07
KMAU	Honolulu, HI	THA-P2SP-4H/8H-1-B	Mar-07
KMEB	Honolulu, HI	THA-P2SP-4H/8H-1-B	Mar-07
KGMV	Wailuku, HI	TUA-P2SP-6/12H-1-S	Mar-07
KOGG	Wailuku, HI	TUA-P2SP-6/12H-1-S	Mar-07
WBNX	Akron, OH	TFU-30DSC-R P270BNT	Mar-07
WEDH	Hartford, CT	TFU-16DSC-R C170	Mar-07
WUTB	Baltimore, MD	TFU-16DSB-R C170	Mar-07
WVAN	Savannah, GA	TLS-V4	May-07
KIRO	Seattle, WA	TFU-32DSC C164	Jun-07
WBND	South Bend, IN	TLP-8M	Jun-07
WCWW	South Bend, IN	TLP-12A	Jun-07
WFBN	Rockford, IL	TLP-4M	Jun-07
WMYS	South Bend, IN	TLP-12F	Jun-07
WSEE	Erie, PA	TLP-16M	Jun-07
WWME	Chicago, IL	TLP-4M	Jun-07
WYTU	Milwaukee, WI	TLP-8M	Jun-07
KIMT	Mason City, IA	TFU-30GTH-R 04	Aug-07
WHCH	Chicago, IL	TLP-8F-R	Aug-07
WPXX	Memphis, TN	TUA-C2-3/6H-1-SP	Aug-07
	Sao Paulo, Brazil	TUA-04-8/32HSP-2-T	Aug-07
WDSU	New Orleans, LA	TUF-C4SP-10/40U-1-T	Sep-07
WGTV	Atlanta, GA	THA-S4-1H/4HD-1-R-B	Sep-07
WNOL	New Orleans, LA	TUF-C4SP-10/40U-1-T	Sep-07
KARD	West Monroe, LA	TFU-34JSC-R 03	Oct-07
KTFT	Twin Falls, ID	TLP-24A	Oct-07
KUQI	El Paso, TX	TFU-20JSC-R 3P260	Oct-07
WCLP	Chattanooga, TN	TFU-24DSB-B-R	Oct-07
WOFL	Orlando, FL	TUA-C4-10/32MSP-1-S	Oct-07
WOGX	Gainesville, FL	TUA-C4-10/32MSP-1-S	Oct-07
WRBW	Orlando, FL	TUA-C4-10/32MSP-1-S	Oct-07
KBCW	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KBWB	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KCNC	Denver, CO	TUA-C3-12/36U-1-S	Nov-07
KCNS	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KCSM	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KFSF	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07

KMGH	Denver, CO	TUA-C3-12/36U-1-S	Nov-07
KMTD	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KNXV	Phoenix, AZ	TFU-20GTH/VP 04	Nov-07
KPIX	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KQED	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KRON	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KTVD	Denver, CO	TUA-C3-12/36U-1-S	Nov-07
KTVU	San Francisco, CA	TUA-C4SP-12/40U-1-S	Nov-07
KUAT	Tucson, AZ	TUA-04-6/24H-1-R-B	Nov-07
WVIA	Wilkes Barre-Scranton, PA	TLP-8 C 160-R	Nov-07
WXGA	Jacksonville, FL	TF-14HT-DC	Nov-07
KGO	San Francisco, FL	THV-5A7-R C170	Dec-07
KQIN	Davenport, IA	TFU-16DSB-R	Dec-07
WPLG	Miami, FL	THV-8A10/VP P210, TLS-V4	Dec-07
	Sao Paulo, Brazil	TFU-16GTH 04	Dec-07
KCNC	Denver, CO	TUC-C4SP-12/48U-4-T	Jan-08
KFMB	San Diego, CA	THB-C2-4H/8HD-1-R	Jan-08
KTVD	Denver, CO	TUC-C4SP-12/48U-4-T	Jan-08
KUSA	Denver, CO	TUC-C4SP-12/48U-4-T	Jan-08
WFTV	Orlando, FL	TFU-24DSB-E	Jan-08
WYFF	Greenville, SC	TFU-24JSC-R 04	Jan-08
KSNW	Wichita, KS	DL-12	Feb-08
WABW	Albany, GA	THA-P4-1M/4H-1	Feb-08
WHIQ	Huntsville, AL	TFU-22JTH-R 04	Feb-08
WRDQ	Orlando, FL	TFU-24DSB/VP-H (C)	Feb-08
WVAN	Savannah, GA	THA-04-7H/28HD-1	Feb-08
KENS	San Antonio, TX	TFU-32DSB-H (C), TFU-30GBH-R 06	Mar-08
KMOV	St. Louis, MO	TFU-30GTH-R 04, TFU-30GTH-R 03	Mar-08
WACS	Albany, GA	THV-5A8-R C170	Mar-08
WANE	Ft. Wayne, IN	TFU-24DSB-R (C) C200	Mar-08
WCES	Augusta, GA	THB-03-3M/9H-1-R, THA-C1-3L/3H-1	Mar-08
WMBF	Montgomery, AL	TFU-22GTH-R 6T170	Mar-08
WMUM	Macon, GA	TLS-V8	Mar-08
WBPG	Gulf Shores, AL	TLP-24 S 180 SP	Apr-08
WJSP	Columbus, GA	TLP-24C-R (C)	Apr-08
WNAC	Providence, RI	THB-C3SP-1H/3HD-1-R	Apr-08
WTIC	Hartford, CT	TFU-18DSC/VP-R C170	Apr-08
WTXX	Waterbury, CT	TFU-10JTH/VP-R 04	Apr-08
	Porto Alegre, Brazil	THA-C4SP-4H/16H-1	Apr-08
KDLT	Sioux Falls, SD	TFU-36GTH-R 04	May-08
KDSE	Dickinson, ND	TW-9B9-R	May-08
KFDX	Wichita Falls, TX	TFU-34JSC-R 03	May-08
KFME	Fargo, ND	TW-9B13-R	May-08

KFWD	Fort Worth, TX	THV-6A9-R C180	May-08
KODE	Joplin, MO	TFU-34JSC-R 03	May-08
KTXS	Sweetwater, TX	TFU-24DSB-H-R (C)	May-08
WLRN	Miami, FL	TUF-BP4SP-12/48USP-1-T	May-08
WPTV	West Palm Beach, FL	THV-10A12/VP 04	May-08
KFVS	Cape Girardeau, MO	TW-12B12-R	Jun-08
KPRY	Pierre, SD	TFU-32DSB-A	Jun-08
WEDN	Norwich, CT	TLS-V4-R	Jun-08
WEWS	Cleveland, OH	TFU-30GTH/VP-R 06	Jun-08
WFXP	Erie, PA	TFU-24DSB-E	Jun-08
WXYZ	Detroit, MI	TFU-26GTH-R 6C140	Jun-08
KCOS	Phoenix, AZ	TF-12AH	Jul-08
KGCW	Burlington, IA	TFU-22JSC-R C150	Jul-08
KLBY	Colby, KS	TFU-30GTH-R 04	Jul-08
KMCI	Kansas City, MO	TFU-18DSC/VP-R2C230	Jul-08
KPXC	Denver, CO	TUD-C5-14/70H-2-B-R	Jul-08
KSHB	Kansas City, MO	TFU-30GTH/VP-R 06 DC, TFU-18DSC/VP-R2C2	Jul-08
KSVI	Billings, MT	TFU-34JSC-R 03	Jul-08
KWTV	Oklahoma City, OK	TF-6HT-H DC SM	Jul-08
KWTX	Waco, TX	THV-12A10-CP-R 04	Jul-08
WDIV	Detroit, MI	TFU-16DSB-M	Jul-08
WSPX	Syracuse, NY	TFU-18GTH-R C200	Jul-08
KAUZ	Wichita Falls, TX	TFU-32DSB-A (C)	Aug-08
KDLV	Sioux Falls, SD	TFU-26GTH-R 04	Aug-08
KHMT	Hardin, MT	TFU-34JSC-R 03	Aug-08
KOTV	Tulsa, OK	TFU-30GBH-R-08, TFU-28DSC-R 04	Aug-08
KPXG	Portland, OR	TUF-04-14/56H-1-T	Aug-08
KSNC	Great Bend, KS	TFU-30GTH-R 04	Aug-08
KTXL	Sacramento, CA	TFU-24ETT/VP-R 3BP250SP	Aug-08
KVEW	Kennewick, WA	TFU-30GTH-R 04	Aug-08
KVIE	Sacramento, CA	THV-5A9/VP-R 04	Aug-08
KXII	Sherman, TX	THV-12A12/CP-R 04, TLS-V4	Aug-08
WLAX	LaCrosse, WI	TFU-22JTH-R T180	Aug-08
WRGB	Schenectady, NY	THB-03-4M/12H-2-R	Aug-08
WSOC	Charlotte, NC	TUA-04-3/12U-1	Aug-08
WVUT	Vincennes, IN	TLP-12C	Aug-08
WWMT	Kalamazoo, MI	TLS-V8-R S170	Aug-08
WXEL	West Palm Beach, FL	TFU-10DSC P230	Aug-08
KEZI	Eugene, OR	THV-10A9/VP-R-C170	Sep-08
KJRH	Tulsa, OK	THV-9A8/CP-R 04	Sep-08
KPRC	Houston, TX	TFU-30DSC/VP-R 04	Sep-08
KRNE	Merriam, NE	TW-12B12-R	Sep-08
WAPT	Jackson, MS	TFU-24DSC-R T170	Sep-08

WCIU	Chicago, IL	TUA-C2-6/12U-1-R	Sep-08
WCPO	Cincinnati, OH	THV-9A10/CP-R3C120	Sep-08
WEUX	Chippewa Falls, WI	TFU-29ETT-R 4C160DC	Sep-08
WGGN	Sandusky, OH	TFU-14GTH/VP-R 4C240	Sep-08
WMDT	Salisbury, MD	TFU-20GTH-R C170 SP	Sep-08
WNEG	Toccoa, GA	TLP-24D-R (C)	Sep-08
WPXI	Pittsburgh, PA	TFU-30DSC-R 04	Sep-08
WTOL	Toledo, OH	THV-6A11-R C170	Sep-08
WVIA	Scranton, PA	TFU-28GTH/V-R 04	Sep-08
	Sao Paulo, Brazil	TUM30-05-8/40H-1-T/TUM30-05-4/20H-1-B	Sep-08
KBTX	Bryan, TX	TFU-30GTH-R 6T140	Oct-08
KCSG	Cedar City, UT	TLP-8M	Oct-08
KJTL	Wichita Falls, TX	TFU-29JSC-R 3T180	Oct-08
KMID	Midland, TX	TFU-31JTH-R04	Oct-08
WAKA	Montgomery, AL	TFU-30GTH-R 04	Oct-08
WCMW	Manistee, MI	TFU-18JSC-R C170	Oct-08
WFFT	Fort Wayne, IN	TFU-24JSC-R T120	Oct-08
WGPT	Oakland, MD	TLP-16M (C)	Oct-08
WHLT	Hattiesbury, MS	TFU-26GTH 04	Oct-08
WIPR	San Juan, PR	TFU-26JSC-R CT150SP	Oct-08
WKYC	Cleveland, OH	TFU-24DSC-R 4C150/TFU-20EBT-R4C150	Oct-08
WNVC	Fairfax, VA	TFU-26GTH-R 04	Oct-08
WVTM	Birmingham, AL	THV-9A13/VP-R 04	Oct-08
WWDP	Norwell, MA	THV-5A10-R 04	Oct-08
KSAN	San Angelo, TX	TFU-34JSC-R 03	Nov-08
WDEF	Chattanooga, TN	TLS-V4	Nov-08
WDHN	Dothan, AL	TFU-34JSC-R 03	Nov-08
WHIO	Dayton, OH	TFU-30GTH-R 4C130	Nov-08
WIWB	Suring, WI	TFU-16DSB-E-R	Nov-08
WJHL	Johnson City, TN	THV-9A11-R 4C130	Nov-08
WMAR	Baltimore, MD	TFU-26GTH/VP-R 6C130	Nov-08
WMBB	Panama City, FL	THV-10A13 C170	Nov-08
WPCW	Jeannette, PA	TLS-V8-R S170	Nov-08
WSAW	Wausau, WI	TFU-8DSB-M-CP-R	Nov-08
WVIZ	Cleveland, OH	TFU-10GTH-R C170	Nov-08
	Sorocaba, Brazil	TUM-25-04-1/4H-1-N	Nov-08
KBRR	Thief River Falls, MN	THV-6A10-R 04 SM	Dec-08
KICU	San Diego, CA	TFU-30DSC/VP-R C170	Dec-08
KLST	San Angelo, TX	TW-7B11-R	Dec-08
KUSM	Bozeman, MT	TLP-16A/VP-R	Dec-08
WFTS	Tampa, FL	TFU-26GTH/VP 6T140	Dec-08
WKMG	Orlando, FL	TFU-20ETT-R 4C220	Dec-08
WMTJ	Fajardo, PR	TFU-16DSC-R S300	Dec-08

WPBF	West Palm Beach, FL	TFU-22GTH/VP-R P260BNT	Dec-08
KHET	Honolulu, HI	THA-BP3SP-1H/3HD-1	Jan-09
KSNF	Joplin, MO	TFU-31JTH-R 04	Jan-09
WDIV	Detroit, MI	TFU-27ETT/VP-R 4C130	Jan-09
WEDU	Tampa, FL	THV-11A13/CP-04 SP	Jan-09
WFXV	Utica, NY	TFU-26DSC-R P260SP	Jan-09
WHAG	Hagerstown, MD	TFU-26JTH-R 4C130	Jan-09
WJET	Erie, PA	TFU-29JTH-R C180 SP	Jan-09
WTWV	Memphis, TN	TFU-30GTH/VP-R 6T130	Jan-09
WWSB	Sarasota, FL	TFU-24JTH/VP 04	Jan-09
KBTW	Port Arthur, TX	TFU-31JTH-R 04	Feb-09
KCWX	Fredericksburg, TX	TF-6MT	Feb-09
KMID	Midland, TX	TFU-34JSC-R 03	Feb-09
KOCT	Carlsbad, NM	TLP-24A	Feb-09
KWBF	Little Rock, AR	TFU-34JSC-R 03	Feb-09
KWCH	Hutchinson, KS	TW-12B12-R	Feb-09
WABW	Pelham, GA	TF-4MT-H	Feb-09
WOAI	San Antonio, TX	TFU-30GTH-R 04, TFU-DSB-H (C)	Feb-09
WPEC	West Palm Beach, FL	THV-6A13/VP-R BP240	Feb-09
WTLV	Jacksonville, FL	THB-C3SP-3H/6HD1H-1-T	Feb-09
WYTV	Youngstown, OH	TFU-21JTH-R 4C300	Feb-09
KJRH	Tulsa, OK	TLS-V4	Mar-09
WCIQ	Mt. Cheaha, AL	TW-7B7-R	Mar-09
WDIQ	Dozier, AL	TW-9B10-R	Mar-09
WFXT	Boston, MA	TFU-19ETT/VP-R 4C190	Mar-09
WSB	Atlanta, GA	TFU-30GTH-R 04	Mar-09
WYFF	Greenville, SC	TFU-26GTH-R 04	Mar-09
KLCS	Los Angeles, CA	TUF-C4SP-10/40U-1-T	Apr-09
KPXC	Denver, CO	TUA-C4SP-8/26U-1-R-S	Apr-09
KXLH	Helena, MT	TLS-V4	Apr-09
WITI	Milwaukee, WI	TFU-23ETT/VP-R 4C160	Apr-09
WJAR	Providence, RI	TFU-24ETT/VP-R 4C160	Apr-09
WJZ	Baltimore, MD	THV-9A13/VP-R C150SP	Apr-09
WMUR	Manchester, NH	TW-6B9-R/TLS-V4-R	Apr-09
WPTD	Dayton, OH	TFU-14GTH/VP-R 04	Apr-09
KBCW	San Francisco, CA	TFU-19JSC/VP-R CT 150	May-09
KGO	San Francisco, CA	TCL-6A7 (S)	May-09
WDRB	Louisville, KY	TFU-32GTH-R 06 TC	May-09
WSVN	Miami, FL	THV-10A7/VP P210/TLS-V4-R	May-09
KBJR	Duluth, MN	TUA-04-10/40H-1-R-T	Jun-09
KBWB	San Francisco, CA	TFU-30DSC/VP-R 4C190	Jun-09
KPIX	San Francisco, CA	TUM-C5SP-14/60H-2-T-R	Jun-09
KRON	San Francisco, CA	TUM-C5SP-14/60H-2-T-R	Jun-09

KTVU	San Francisco, CA	TUM-C5SP-14/60H-2-T-R	Jun-09
KUTP	Phoenix, AZ	TFU-28DSC-R CT150	Jun-09
WBRC	Birmingham, AL	TFU-28GTH/VP-R 06	Jun-09
WCAU	Philadelphia, PA	TFU-24ETT/VP-R 06	Jun-09
WRJM	Troy, AL	TLP-24C	Jun-09
WSCV	Fort Lauderdale, FL	TFU-24ETT/VP-R 4C160SP	Jun-09
WSMH	Flint, MI	TFU-17JTH/VP-R S180	Jun-09
WTVC	Chattanooga, TN	THV-5A9/VP-R C140/TLS-V4-R	Jun-09
WUVP	Vineland, NJ	TFU-22ETT/VP-R P210	Jun-09
WYBE	Philadelphia, PA	TFU-24EBT/VP-R 8T 160SP	Jun-09
KCNS	San Francisco, CA	TUM-C5SP-14/60H-2-T-R	Jul-09
KCSM	San Francisco, CA	TUM-C5SP-14/60H-2-T-R	Jul-09
KMPT	San Francisco, CA	TUM-C5SP-14/60H-2-T-R	Jul-09
KQED	San Francisco, CA	TUM-C5SP-14/60H-2-T-R	Jul-09
KRMA	Denver, CO	TFU-332DSC/VP-R C190	Jul-09
WENH	Durham, NH	THV-10A11/VP-R 4C130	Jul-09
WNJU	New York, NY	TFU-15JSC/VP-R CT 160	Jul-09
WYDO	Greenville, NC	TFU-16DSB-M/VP	Jul-09
KFSF	San Francisco, CA	TFU-26DSC/VP-R P190	Aug-09
KVVK	Kennewick, WA	TLP-8A	Aug-09
KWGN	Denver, CO	TFU-30GTH/VP-R 06	Aug-09
WSPA	Spartansburg, SC	THV-10A7/VP-R 04 / TLS-V4-R	Aug-09
WSTR	Cincinnati, OH	TFU-24GTH/CP-R 06	Aug-09
WUNM	Jacksonville, NC	TFU-14DSC/VP-R P230	Aug-09
WXIN	Indianapolis, IN	TUM-20-04-12/48H-1-R-T	Aug-09
WXOW	LaCrosse, WI	TLP-8B	Aug-09
KSNF	Joplin, MO	TFU-31JTH-R 04	Oct-09
KVEA	Corona, CA	TFU-20ETT/VP-R 4C160	Oct-09
KCDO	Sterling, CO	TFU-29JTH-R 04	Oct-09
KNXV	Phoenix, AZ	TFU-13JSC 03	Oct-09
WLBT	Jackson, MS	TFU-33JTH-R 04	Nov-09
WOI	Ames, IA	DL-8	Nov-09
WSWP	Grandview, WV	THV-6A10-R 3C140	Nov-09
WVPN	Aurora, IL	TLP-8A	Nov-09
WHBF	Rock Island, IL	DL-8	Nov-09
MTVA	New York, NY	TUM50-C1-4/4H-1-S	Nov-09
WCIU-DT	Chicago IL	TFU-10DSC/VP-R CT170 + mnts	Dec-09
WKBD-DT	Southfield ,MI	TLP-24H - Bottom Section Only	Dec-09
KWSE-DT	Fargo, ND	TW-12B11-R	Feb-10
W29DJ	Chicago IL	TLP-24M + std mnts	Mar-10
52 Mogi	Rio de Janeiro Brazil	TLP-8B/VP (no mnts)	Mar-10
KVEA-DT	Mount Wilson , CA	TFU-20ETT/VP-R 4C160 + wed cake	Mar-10
KOCO-DT	Oklahoma City, OK	THV-12A7/VP-RO4 + wed cake + bury	Mar-10

WOTV-DT	Grand Rapids, MI	TFU-12DSB-A-R + std mnts	Mar-10
28 Resende	RESENDE, Brazil	TLP-8A/VP-R (no mnts)	Mar-10
29 Redonda	Redonda , Brazil	TLP-8A/VP-R (no mnts)	Apr-10
K63EN	Yuma , AZ	THA-C1-5/5-1-S (no mnts)	Apr-10
WFGX-DT	Pensacola, FL	TFU-29ETT/VP-R 4C170	May-10
WFNA-DT	Spanish Fort, AL	TFU-30DSC/VP-R CT170 + mnts	May-10
WSYX-DT	Columbus OH	TFU-12DSB-H-R + std mnts	May-10
WTTE-DT	Columbus, OH	TFU-12DSB-H-R + std mnts	Jun-10
KDFW-DT	Dallas, TX	TFU10DSC/VP-R-4C150 DC + mnts	Jun-10
KCTV-DT	Kansas City, MO	TFU-33JTH/VP-R O6 + bury	May-10
CTV	Montreal, CA	TF-10HT-DC-2-H SP	Jun-10
WSYX-DT	Columbus, OH	TFU-30GTH/VP-R O6 + wed cake	Jun-10
WVTV-DT	Milwaukee WI	TFU-17JSC/VP-R SP 4C170 + mnts	Jun-10
WMAH-DT	Perkinston, MS	TFU-20JTH-R S220	Jun-10
KHON-DT	Honolulu, HI	TLS-V8/VP-R S170 + mnts	Jun-10
WLPB-DT	Baton Rouge, LA	TFU-24JTH-R C190	Jun-10
WJAN	Hialeah Gardens, FL	DL-12 + cstm mnts	Jul-10
WTTA-DT	Riverview FL	TFU-34JTH/VP-R O4SP	Jul-10
OMVC	Parker, FL	TLP-8M + cstm mnts	Jul-10
K50LL	San Diego, CA	TLP-8J/VP	Jul-10
WOFL-DT	Christmas FL	TFU-26JTH/VP-R O6	Aug-10
KXTX-DT/KXAS-DT	Cedar Hill, TX	TUA-C3-6/18H-1-R-DC SM	Aug-10
TV Azteca	Mexico City, MX	TFU-12DSB-B + std mnts	Aug-10
WISN-DT	Milwaukee, WI	TFU-31ETT/VP-R 4C160	Sep-10
WABI-DT	Bangor, ME	THV-9A13/CP-RO4 +BURY	Sep-10
WMSN-DT	Madison, WI	TFU-30GBH/VP-R O8	Sep-10
KARE-DT	Edina, MN	TLS-V8/VP-R +Custom mnts	Sep-10
KSTP-DT/WCCO-DT	Edina, MN	TUM20-C4SP-14/50-1-R-S+ MNTS	Sep-10
WKAR-DT (Aux)	East Lansing, MI	TLP-16B+std mnts	Sep-10
WLOS-DT	Asheville, NC	THV-6A13/CP-R C150	Sep-10
WCPO-DT	Cincinnati, OH	TFU-36GTH/VP-RO6	Oct-10
WCAU-DT	Philadelphia, PA	TFU-24JTH/VP-RO6	Oct-10
WHNS	Greenville, SC	DLP-8D	Oct-10
WWTO-DT	Ottawa, IL	THB-C2SP-3/9HD-R-1	Oct-10
WKAQ-DT	San Juan, PR	TFU-24ETT/VP-R	Nov-10
WPTV-DT (Aux)	Lake Worth, FL	TLS-V8/VP-R	Nov-10
KCKA	Chehalis, WA	TLP-24H-R	Nov-10
KBTV	Roseville, CA	DLP-8MR	Nov-10
KCBS/KNBC	Glendale, CA	TUA-C2-8/16M-1	Nov-10
KTVT/KTXA	Cedar Hill, TX	TUM30-04-14/56H-2-R-T	Nov-10
WTVD-DT (main)	Durham, NC	THV-9A11/CP-R O4	Dec-10
WTVD-DT (aux)	Durham, NC	TLS-V8/VP-R	Dec-10
44 Fredericton	Fredricton, CN	TLP-16M/VP	Dec-10
42 Saskatoon	Saskatoon, CN	TLP-16B/VP	Dec-10

WTJX
WRDQ/WFTV

St.. Thomas, VI
Orlando, FL

TLP-8M
TUM20-O4SP-14/56H-2-R-T

Dec-10
Dec-10



PERRY JOHNSON REGISTRARS, INC.

Certificate of Registration

Perry Johnson Registrars, Inc., has assessed the Quality Management System of

Dielectric Communications, a Division of SPX Corporation
22 Tower Road, Raymond, ME 04071 United States

*(Hereinafter called the Organization) and hereby declares that
Organization is in conformance with:*

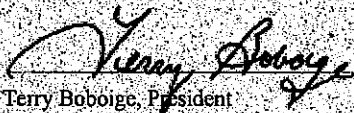
ISO 9001:2008

This Registration is in respect to the following scope of supply:

***Design and Manufacture of RF Broadcast and RF Custom Products
for Military and Scientific Applications and Related Test Equipment***

*Such products shall be manufactured by the Organization at, or such processes or services shall be offered at or
from, only the address given above. This Registration is granted subject to the system rules governing the
Registration referred to above, and the Organization hereby covenants with the Assessment body duty to observe
and comply with the said rules.*

For PJR


Terry Boboige, President

Perry Johnson Registrars, Inc. (PJR)
26555 Evergreen, Suite 1340
Southfield, Michigan 48076
(248) 358-3388



PERRY JOHNSON
REGISTRARS, INC.

The validity of this certificate is mandated through ongoing surveillance.

Effective Date:

March 10, 2009

Revision Date:

August 12, 2009

Expiration Date:

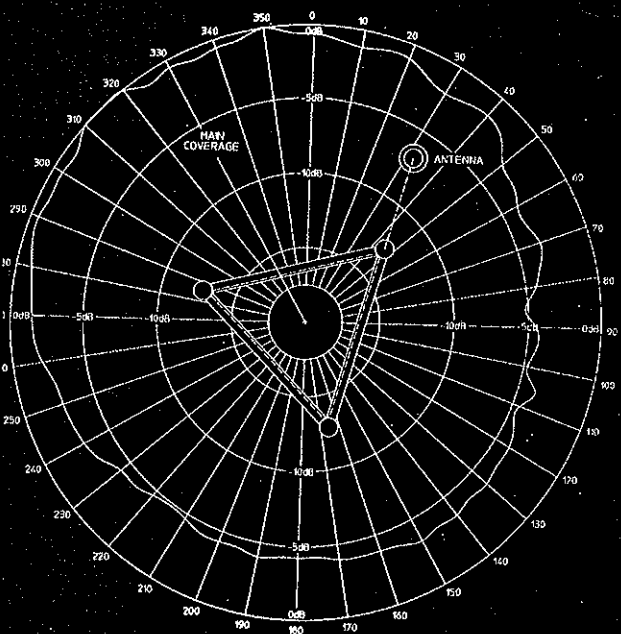
March 9, 2012

Certificate No.:

C2009-00683-R1

Low & Medium Power UHF Antennas for NTSC and DTV

Circular or Horizontal Polarization




Dielectric

Dielectric Advantages

-
- Mounting brackets *included* on standard installations. Customized brackets available for optimized patterns.
- Ideally suited for Low Power DTV applications
- Circular or elliptical polarization options available
- Low VSWR
- Customized patterns available
- 2 year warranty
- Slot Covers standard, deicers not required
- Optional ice shield

Specifications

MAXIMUM INPUT POWER RATING

DTV (Average) / NTSC (Peak)*

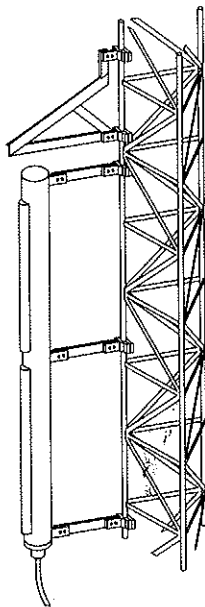
Antenna	Standard (S)		Custom (C)		Special (SP)	
	Ch.14	Ch. 69	Ch.14	Ch. 69	Ch.14	Ch. 69
TLP-8	5.0/8.6	5.0/6.4	—	—	—	—
TLP-16	4.0/6.1	3.0/4.5	8.0/13.0	7.0/9.7	8.0/24.0	8.0/24.0
TLP-24	4.9/7.0	3.7/5.3	8.8/15.0	7.9/11.3	11.6/35.0	11.6/24.0
TLP-32	7.0/10.0	5.2/7.5	12.5/21.4	11.2/16.1	11.6/35.0	11.6/24.0

Input: 1-5/8" EIA on Standard, 3-1/8" EIA on Custom and Special

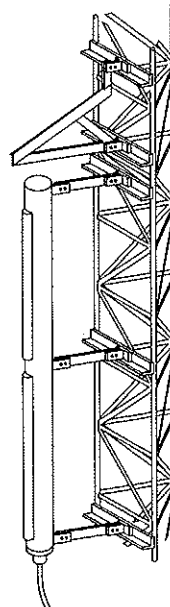
VSWR: 1.1:1 Maximum over channel

*NTSC: Peak Sync + 10% aural

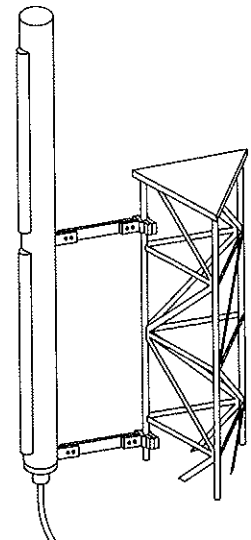
Mounting Options



Leg Mount

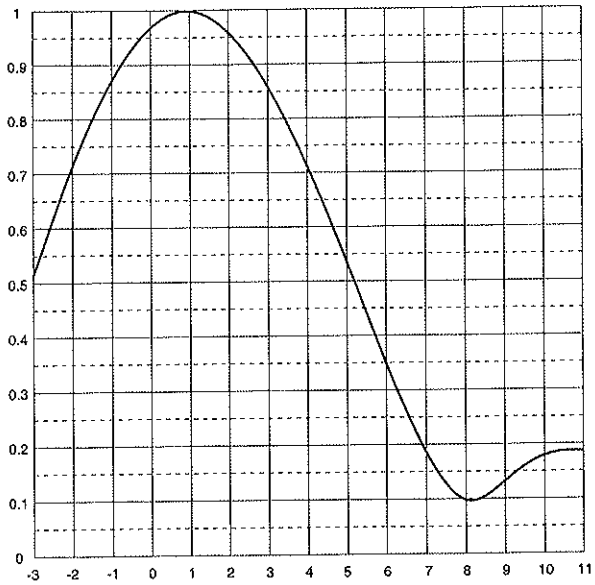


Face Mount

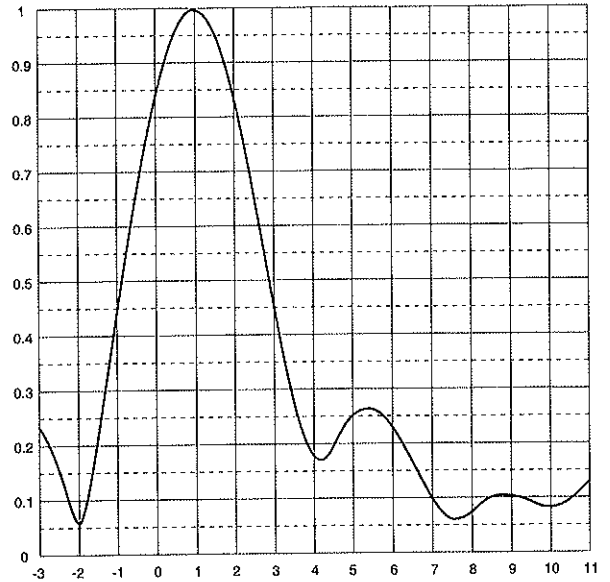


Top Mount

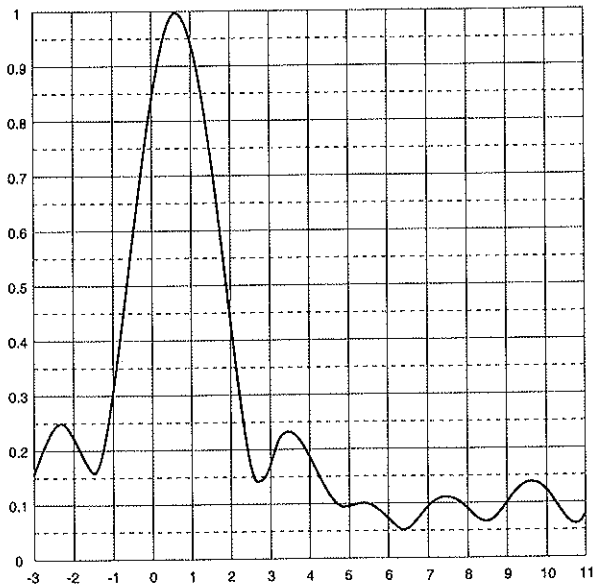
Elevation Patterns



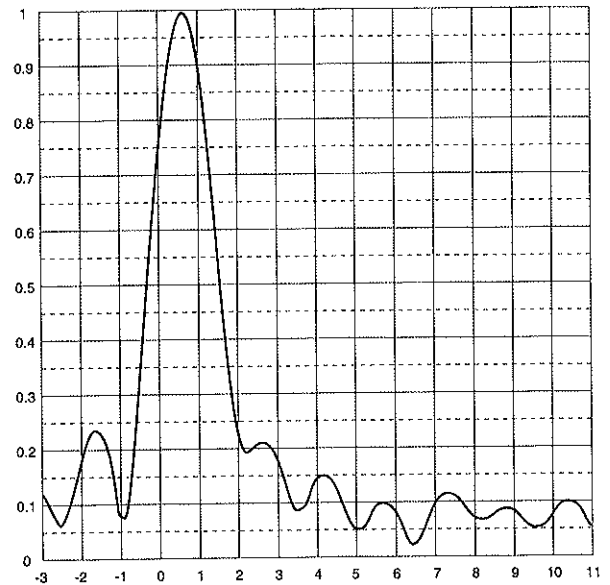
TLP-8



TLP-16



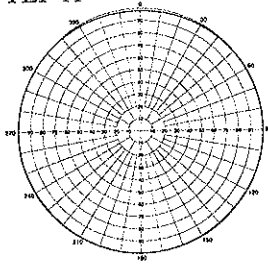
TLP-24



TLP-32

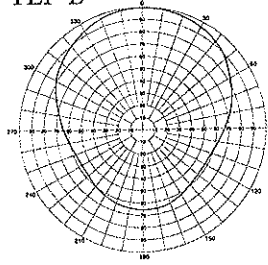
Azimuth Patterns

TLP-A



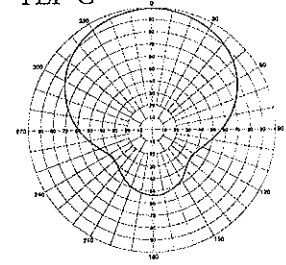
Azimuth Gain = 1.0

TLP-B



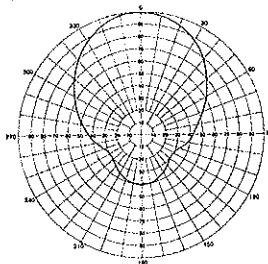
Azimuth Gain = 1.7

TLP-C



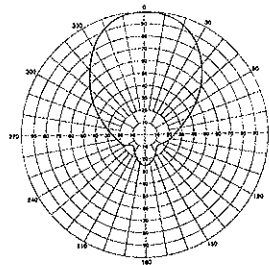
Azimuth Gain = 2.1

TLP-D



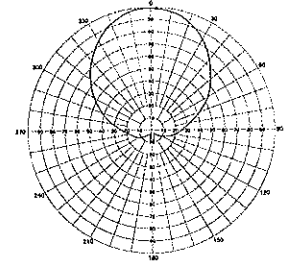
Azimuth Gain = 2.9

TLP-E



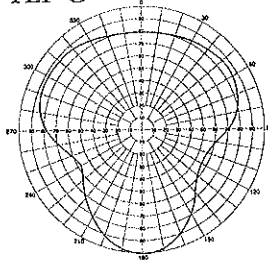
Azimuth Gain = 3.9

TLP-F



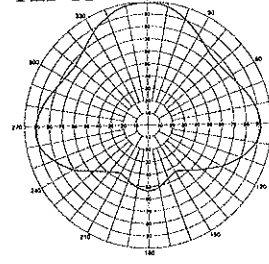
Azimuth Gain = 3.6

TLP-G



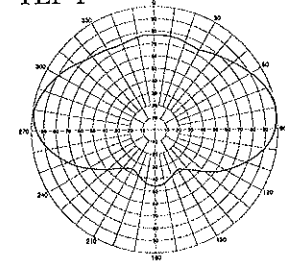
Azimuth Gain = 1.6

TLP-H



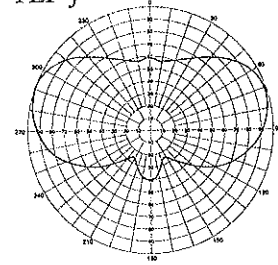
Azimuth Gain = 1.7

TLP-I



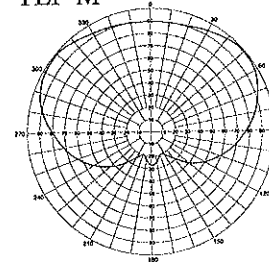
Azimuth Gain = 1.8

TLP-J



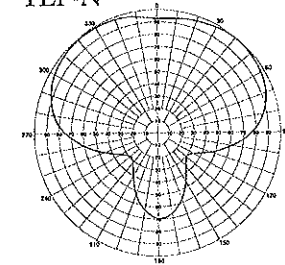
Azimuth Gain = 2.0

TLP-M



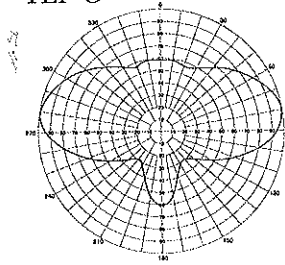
Azimuth Gain = 1.9

TLP-N



Azimuth Gain = 1.7

TLP-O



Azimuth Gain = 2.2

In addition to these standard patterns, we can customize a pattern to meet your specific needs. *Please contact us for more information.*

Dielectric

Antenna Specifications

These tables reflect minimum values for channel 69 and maximum for channel 14. Height, weight, or windload may be interpolated to find the approximate values for a particular channel as follows:

$$\frac{(14\text{-channel}) (\text{Max.} - \text{Min.})}{55} + \text{Max.}$$

Center of Radiation is one half the height: (C/R = 0.5 Height).

Peak power gain ratio relative to half wave dipole.

Antenna Type	Azimuth Pattern	Peak Power Gain Ratio ¹	Gain dB	Height (ft)	Weight (lb)	Windload ² (lb)
TLP-8A	TLP-A	8.0	9.0		65 to 105	190 to 320
TLP-8B	TLP-B	13.6	11.3		45 to 70	180 to 300
TLP-8C	TLP-C	16.8	12.3		50 to 85	310 to 760
TLP-8D	TLP-D	23.2	13.7		50 to 85	300 to 710
TLP-8E	TLP-E	31.2	14.9		65 to 135	370 to 910
TLP-8F	TLP-F	28.8	14.6	10.5	60 to 110	260 to 530
TLP-8G	TLP-G	12.8	11.1	to	55 to 100	180 to 310
TLP-8H	TLP-H	13.6	11.3	17.8	50 to 85	260 to 530
TLP-8I	TLP-I	14.4	11.6		50 to 85	260 to 530
TLP-8J	TLP-J	16.0	12.0		50 to 95	380 to 980
TLP-8M	TLP-M	15.2	11.8		50 to 85	260 to 610
TLP-8N	TLP-N	13.6	11.3		50 to 85	210 to 580
TLP-8O	TLP-O	17.6	12.4		55 to 100	370 to 630
<hr/>						
TLP-16A	TLP-A	16.0	12.0		150 to 230	435 to 700
TLP-16B	TLP-B	27.2	14.3		110 to 160	410 to 650
TLP-16C	TLP-C	33.6	15.3		120 to 190	680 to 1580
TLP-16D	TLP-D	46.4	16.7		120 to 190	660 to 1480
TLP-16E	TLP-E	62.4	18.0		150 to 290	800 to 1880
TLP-16F	TLP-F	57.6	17.6	22.2	140 to 240	580 to 1120
TLP-16G	TLP-G	25.6	14.1	to	130 to 220	420 to 680
TLP-16H	TLP-H	27.2	14.3	37.5	120 to 190	580 to 1120
TLP-16I	TLP-I	28.8	14.6		120 to 190	580 to 1120
TLP-16J	TLP-J	32.0	15.1		120 to 210	820 to 2020
TLP-16M	TLP-M	30.4	14.8		120 to 190	580 to 1280
TLP-16N	TLP-N	27.2	14.3		120 to 190	480 to 1220
TLP-16O	TLP-O	35.2	15.5		130 to 220	800 to 1320
<hr/>						
TLP-24A	TLP-A	23.0	13.6		225 to 345	675 to 1070
TLP-24B	TLP-B	39.1	15.9		170 to 245	635 to 1000
TLP-24C	TLP-C	48.3	16.8		185 to 290	1040 to 2390
TLP-24D	TLP-D	66.7	18.2		185 to 290	1010 to 2240
TLP-24E	TLP-E	89.7	19.5		230 to 440	1220 to 2840
TLP-24F	TLP-F	82.8	19.2	33.8	215 to 365	890 to 1700
TLP-24G	TLP-G	36.8	15.7	to	200 to 335	650 to 1040
TLP-24H	TLP-H	39.1	15.9	57.3	185 to 290	890 to 1700
TLP-24I	TLP-I	41.4	16.2		185 to 290	890 to 1700
TLP-24J	TLP-J	46.0	16.6		185 to 320	1250 to 3050
TLP-24M	TLP-M	43.7	16.4		185 to 290	890 to 1940
TLP-24N	TLP-N	39.1	15.9		185 to 290	740 to 1850
TLP-24O	TLP-O	50.6	17.0		200 to 335	1220 to 2000
<hr/>						
TLP-32A	TLP-A	31.0	14.9		300 to 460	930 to 1450
TLP-32B	TLP-B	52.7	17.2		220 to 480	760 to 1200
TLP-32C	TLP-C	65.1	18.1		240 to 380	1360 to 3160
TLP-32D	TLP-D	89.9	19.5		240 to 380	1320 to 2960
TLP-32E	TLP-E	120.9	20.8		300 to 580	1600 to 3760
TLP-32F	TLP-F	111.6	20.5	45.4	280 to 480	1160 to 2240
TLP-32G	TLP-G	49.6	17.0	to	260 to 440	840 to 1360
TLP-32H	TLP-H	52.7	17.2	77.1	240 to 380	1160 to 2240
TLP-32I	TLP-I	55.8	17.5		240 to 380	1160 to 2240
TLP-32J	TLP-J	62.0	17.9		240 to 420	1640 to 4040
TLP-32M	TLP-M	58.9	17.7		240 to 380	1160 to 2560
TLP-32N	TLP-N	52.7	17.2		240 to 380	690 to 2440
TLP-32O	TLP-O	68.2	18.3		260 to 440	1600 to 2640

¹ Contract factory for gains of elliptically or circularly polarized versions
² Windload at 50/33 lb/ft² per EIA RS-222-C

Innovations for a Wireless World™

((Performance • Quality • Relationships))

Dielectric®
AN SPX DIVISION






Why Dielectric

Performance, Quality, Relationships

Since 1942, Dielectric Communications has been on the leading edge of broadcast system design, development and installation. We consider ourselves to be world class designers and manufacturers of complete broadcast systems from the transmitter output to the tower top antennas and everything in between. We are now putting our considerable RF expertise into development, design and manufacture of high-performance products for MobileMedia, Broadband Wireless and Cell-Based Mobile communication applications.

We build quality and reliability into every product and service that carries the Dielectric logo. We pride ourselves in understanding your needs and we are tirelessly pursuing the development of products that will deliver your content to a larger audience with the strongest signal. Dielectric is confident in our ability to deliver your message to the world.

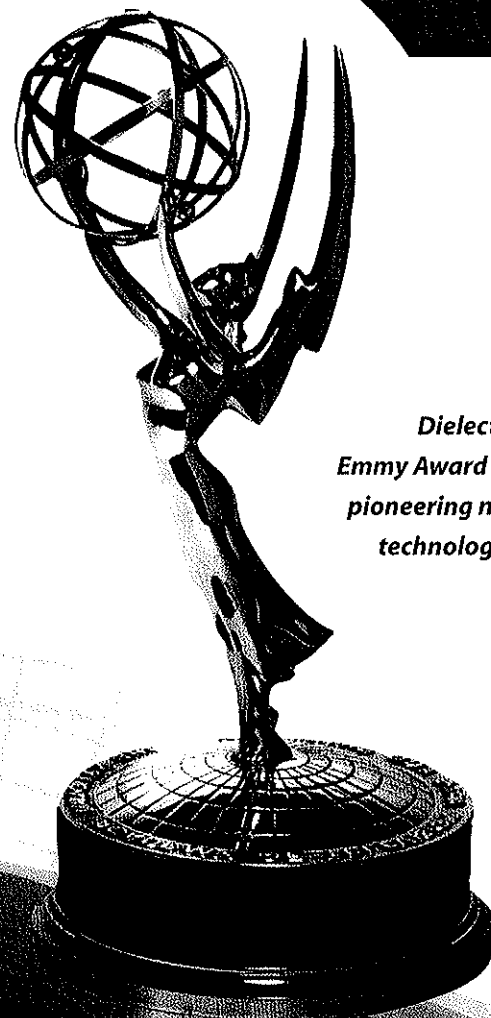


*10 station analog
and digital FMVee
master antenna,
St. Louis, Missouri*



A Culture of Innovation

- 87 RF Patents
- 600 years of combined RF Engineering Experience on Staff
- More than 6000 TV and FM Antennas installed
- 2 Emmys for technical innovation
- 4 NAB Pick hits
- 2 SBE Awards
- 5 SPX Inventor Awards



*Dielectric
Emmy Award for
pioneering new
technologies*

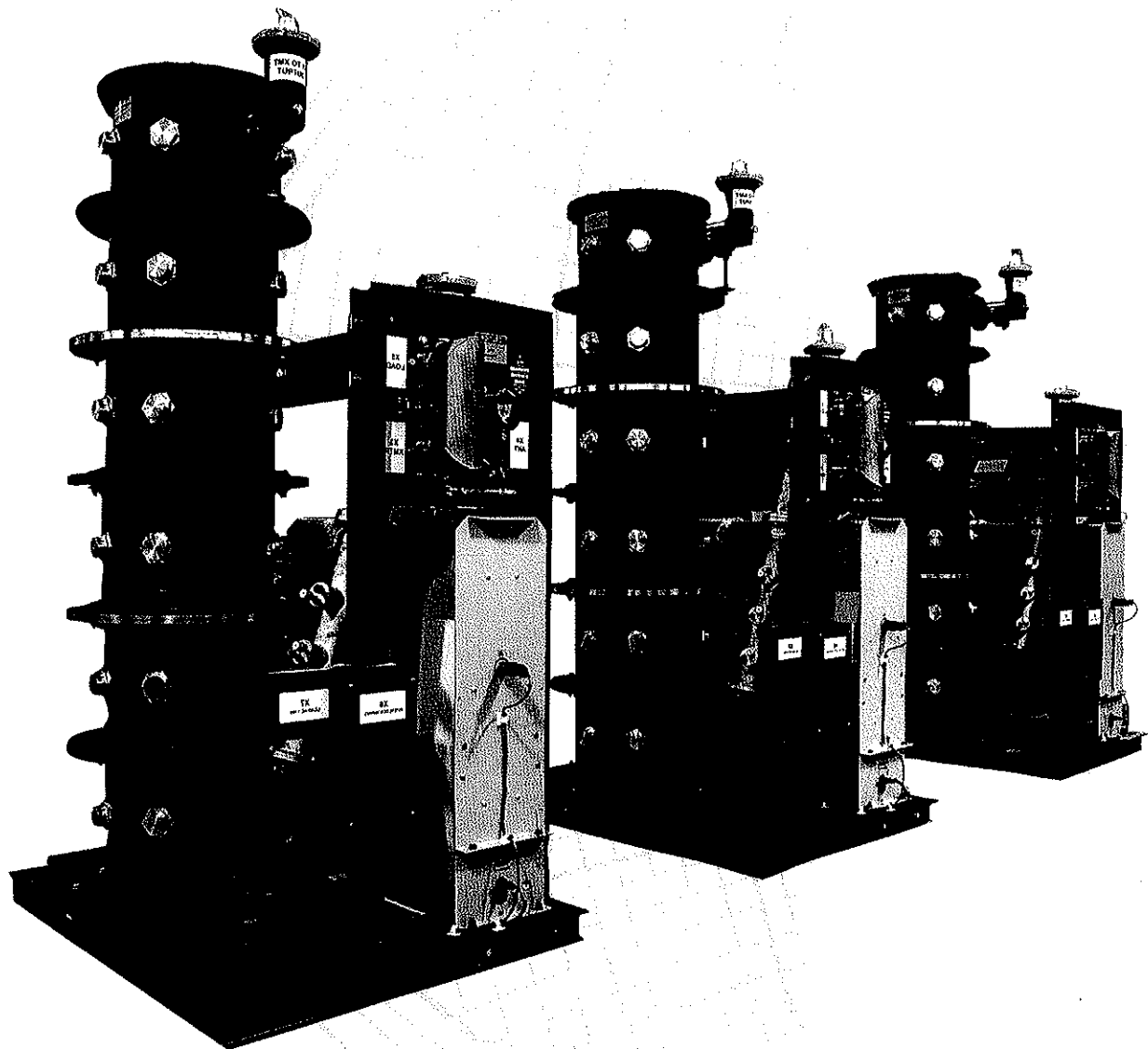
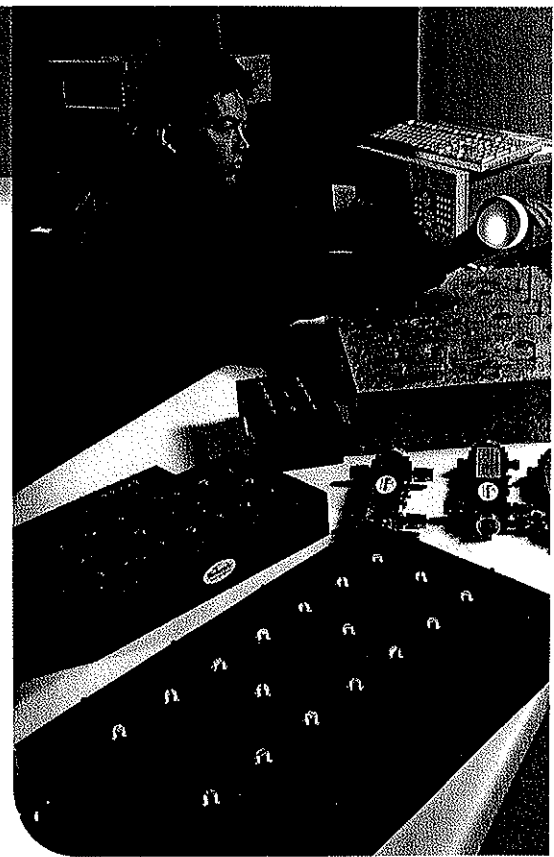
A Tradition of Innovation

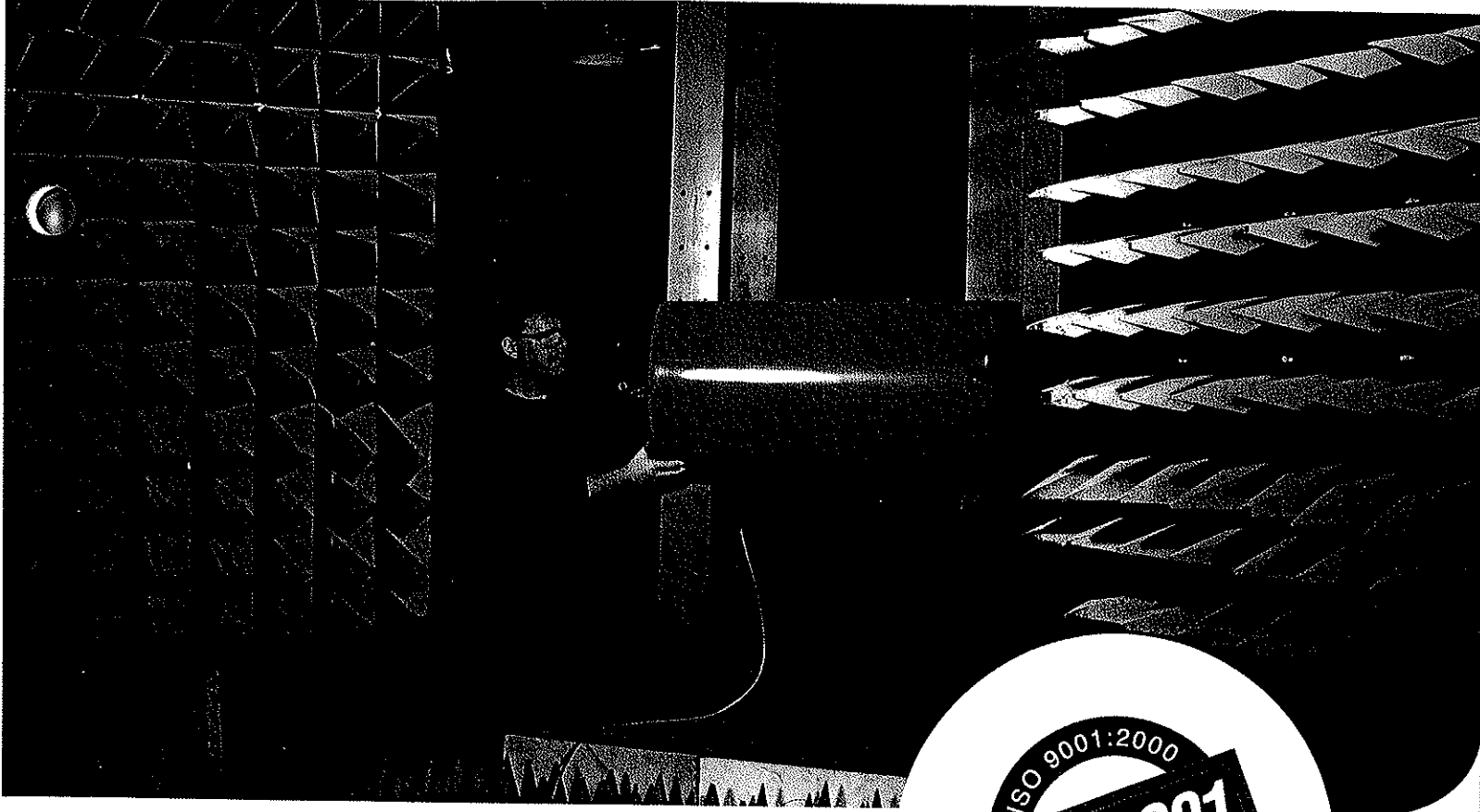
65 Years of Leading Innovation in Passive
RF Technologies around the world

Performance

Redefining Performance and Reliability

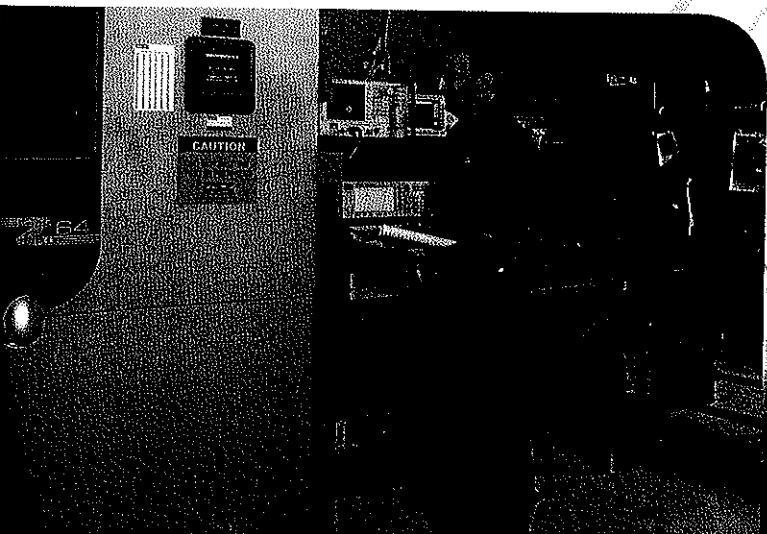
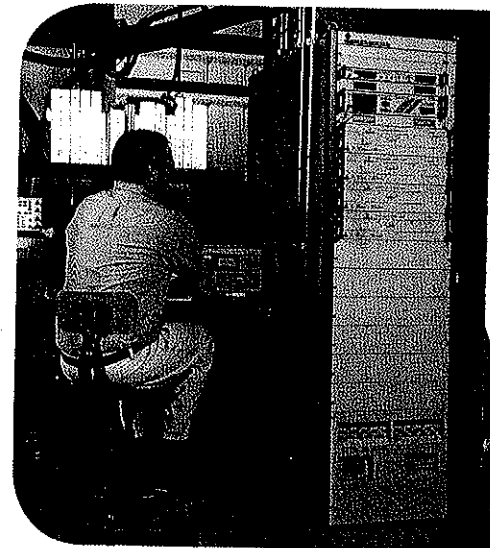
- High performance filter for WiMax deployment in Asia that delivers improved data speeds and coverage
- Dielectric's TUV array with CAT (Common Aperture Technology). CAT allows for the transmission of both VHF and UHF signals from the same aperture
- Rack mountable, stringent mask filters for Mobile TV broadcast that deliver unprecedented performance in Q value and insertion loss
- Dielectric's RF Scout XLT Monitoring system introduced

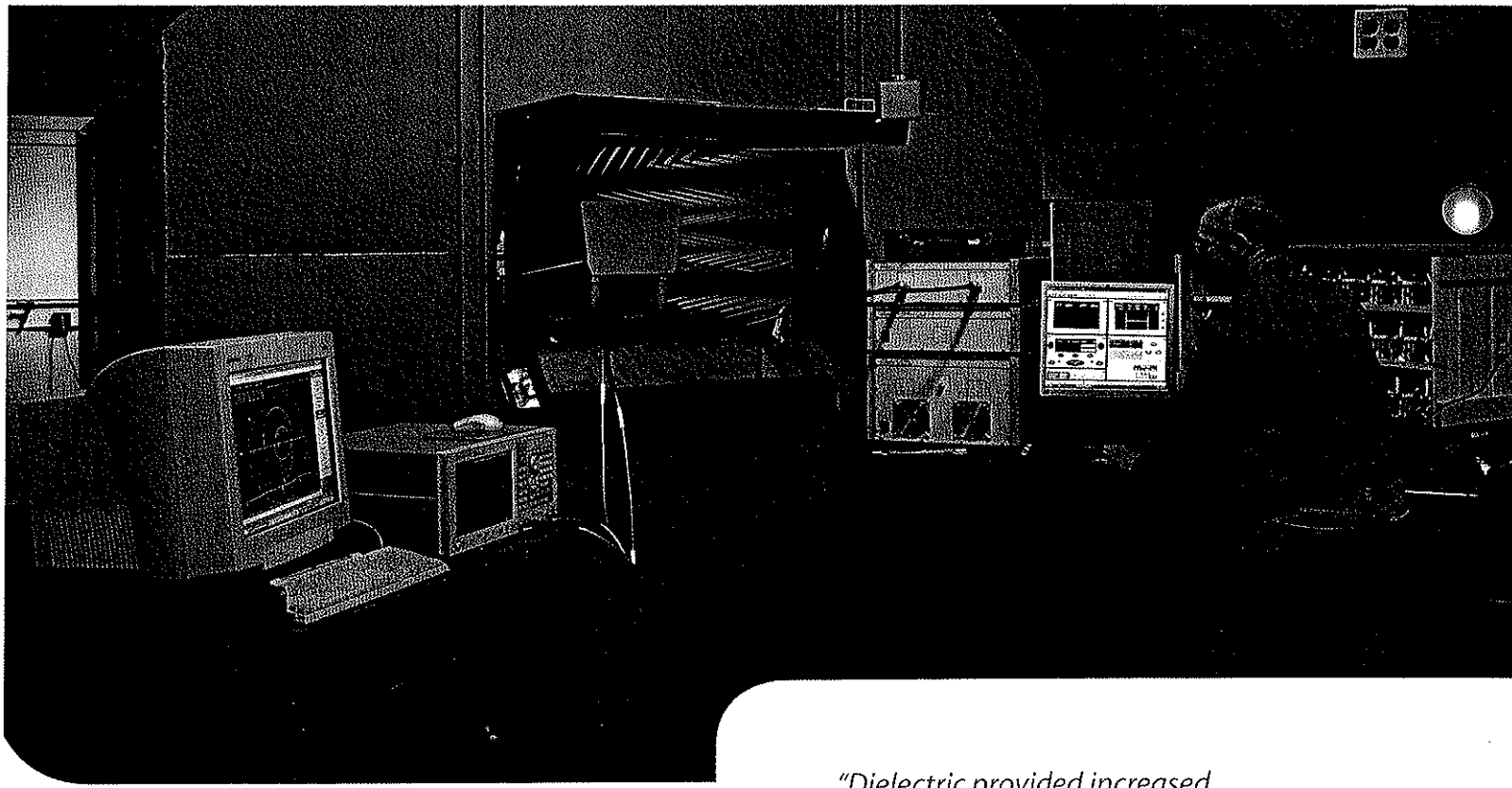




Quality

Our employees take great pride in their work. From concept through installation, the quality will be as clear to you as the signal that we help you transmit. It is simply the result of 65 years of experience in designing and producing robust designs that are second to none. And the stamp of approval comes with our ISO 9001 certification.





Relationships

Commitment & Caring

It's easy to shine when everything is running smoothly... at Dielectric we take pride in shining during difficult circumstances. In the recent past, there have been a number of tragedies affecting broadcasters from coast to coast. Dielectric has stepped in and worked around the clock to get the broadcasters back on the air. We understand that every minute of off-time air is lost revenue.

"Great Conference—the topics covered were timely and dealt in depth (with) the pending changes to HD Radio."

"Dielectric provided increased insight into the various trade-offs between the different options available when going from -20 to -10 IBOC."

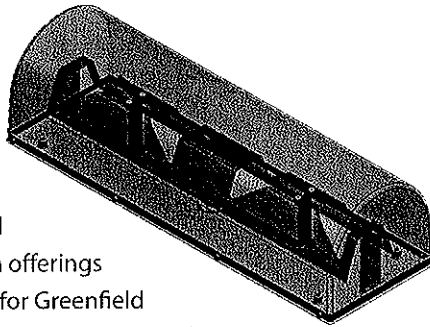
Leadership in FM Radio

Dielectric is the proud sponsor of the annual FM Executive Conference held here in Maine as a forum to communicate product improvements and exchange ideas with some of the most influential engineers in the FM radio segment of the industry. It is just another way of staying in touch with the needs of customers and offering cutting edge solutions.

Markets Served Around the World

Mobile Wireless

Dielectric's entrance into the Mobile Wireless space is offering network operators unprecedented advantages in CAPEX and OPEX savings. Our system offerings are especially well suited for Greenfield network deployments and offer operators the economics to reach rural populations that to this point have been unattainable.



Cost Effective Solutions for MobileMedia™

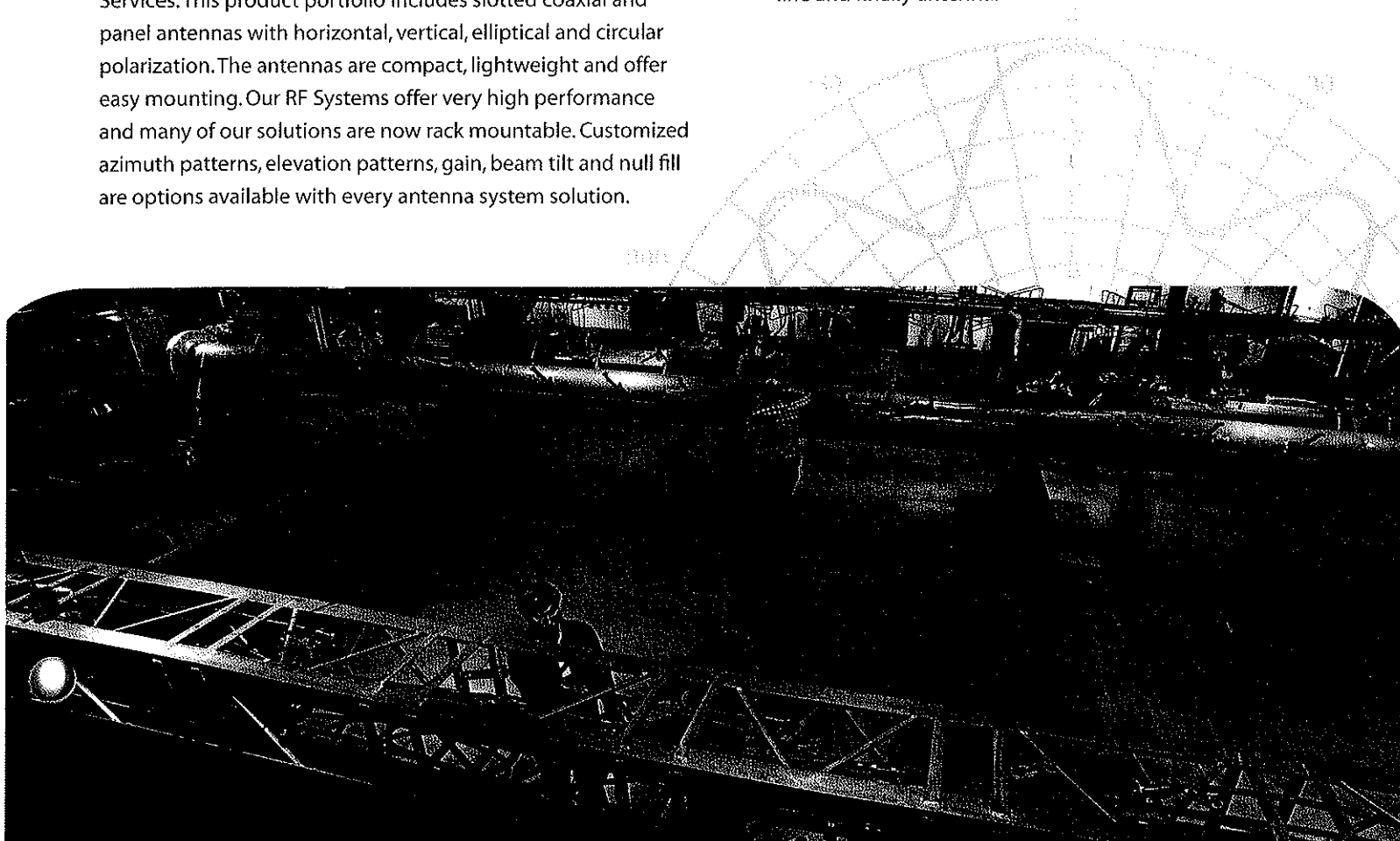
Dielectric is a pioneer in product development and actual implementation of Broadcast Systems for mobile devices. Our innovative designs are specifically tailored to the spectrum that is becoming available around the world for Mobile TV and are compatible with MediaFlo™, DVB-H and the forthcoming MPH Services. This product portfolio includes slotted coaxial and panel antennas with horizontal, vertical, elliptical and circular polarization. The antennas are compact, lightweight and offer easy mounting. Our RF Systems offer very high performance and many of our solutions are now rack mountable. Customized azimuth patterns, elevation patterns, gain, beam tilt and null fill are options available with every antenna system solution.

FM Radio Products

Whether in a small or large market, serious broadcasters invest a lot of time, money and effort to obtain the largest audience and command the best price for advertising space. At the end of the day your product is broadcast through one point - your antenna. Dielectric is recognized around the world as the premier manufacturer for Broadcasters who refuse to compromise on their signal. Dielectric filters, switches, power monitoring systems, transmission line, pattern testing facilities and antennas are recognized as the standard of performance and reliability. Get the most out of your signal with Dielectric.

Television Broadcast

Dielectric is a single source for all RF equipment, offering the most complete line of television antenna products of any manufacturer in the world. This single layer of responsibility greatly reduces possible errors in the interface between the transmitter, RF system, transmission line and finally antenna.



Dielectric's Global Presence



*Dielectric—chosen for
waveguide run at the
EISCAT Transmitting System,
Svalbard, Norway*

Dielectric Communications is one of the oldest and most respected passive RF companies in the world. We have installations in 96 countries around the world. Our customers are the largest, most successful broadcasters around the globe. Dielectric has provided components and/or complete systems for EISCAT, Master FM antennas in Mexico City, UHF TV antennas in São Paulo, and built a U.S. wide network to deliver mobile TV. Dielectric Communications is the right choice for your most stringent broadcast needs. We offer reliable solutions using both standard or customized equipment that delivers superior performance. Our products connect people around the globe—let us be your link to new opportunities.

Contact Us

Call us today about your broadcast equipment needs at **207.655.8100** or email us at dcsales@spx.com

Dielectric®
AN SPX DIVISION

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Raymond, Maine 04071 USA
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[F] 207-655-8177
Email: dcsales@spx.com
www.dielectric.com