

**BID NO. #03K-65**



**HARRIS CORPORATION**

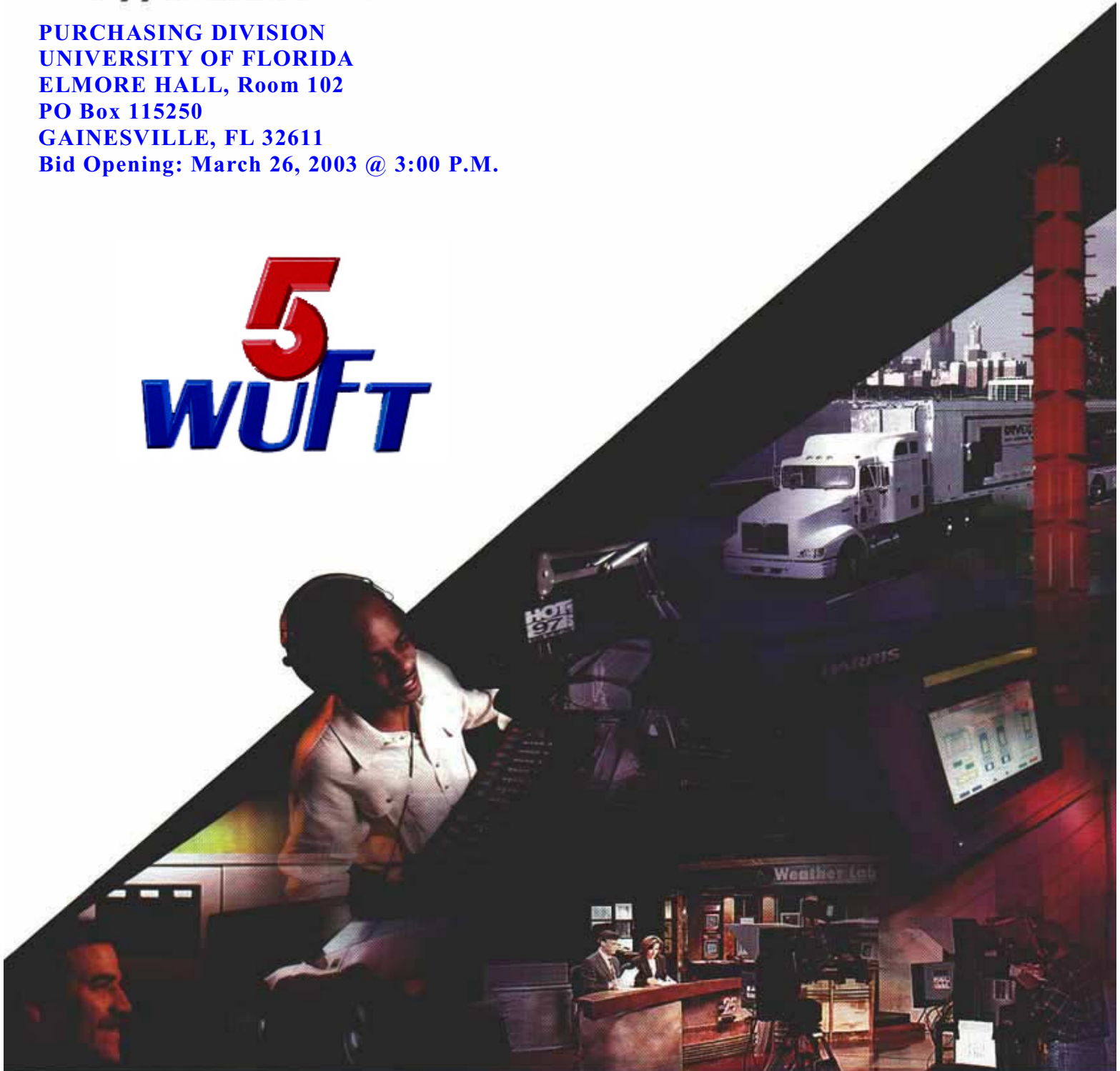
Broadcast Communications

***Products  
Capabilities  
Applications***

Transmission & Service  
Studio Products & Systems  
Automation

**PURCHASING DIVISION  
UNIVERSITY OF FLORIDA  
ELMORE HALL, Room 102  
PO Box 115250  
GAINESVILLE, FL 32611  
Bid Opening: March 26, 2003 @ 3:00 P.M.**

**5  
WUFT**



***next level solutions***



HARRIS CORPORATION

Broadcast Communications Division  
P.O. 4393 Digital Way  
4240 Irwin-Simpson Road  
Mason, OH, USA 45040  
phone 1-513-459-3400

20-Mar-03

PURCHASING DIVISION  
UNIVERSITY OF FLORIDA  
ELMORE HALL, Room 102  
PO Box 115250  
GAINESVILLE, FL 32611

[www.harris.com](http://www.harris.com)

Donna S. Doty:

On behalf of Mr. L. Merle Thomas and the entire Harris Broadcast Communications Division, we are pleased to submit the following proposal.

We can offer you next level solutions, now as well as in the future.

Should you require additional information or have questions, please don't hesitate to call L. Merle 704-540-5828 (Cell 704-576-2001), or myself.

Thank you for your consideration in this matter. We look forward to hearing from you soon.

Sincerely,

Chris Baker  
Senior Proposal Engineer  
513-459-3531

*next level solutions*



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**(Tab 1) Proposal**



**Harris Corporation**  
**Broadcast Communications Division**

4393 Digital Way  
Mason, OH 45040 USA  
(513) 459-3400 Phone  
(513) 701-5315 Fax

To: WUFT-TV  
1200 Weimer Hall  
Gainesville, FL 32611- USA  
Rob Carr, Engineering Manager

**Quotation - Proforma Invoice**

Quote Name: 1-FJOH0 Rev #: 1  
Effective Date: 25-Mar-2003

Thank you for your inquiry. We are pleased to submit our quotation as follows:

**PRICE SUMMARY**

**Options**

**Total Price**

**A: DTV Transmitter**

**Total Equipment/Services Price**

**Estimated Freight**

**Insurance**

**Total Equipment/Services Price**



Proprietary data. This document contains proprietary data of Harris Corporation. No disclosure, reproduction, or use of any part thereof may be made except with Harris' prior written approval.

Estimated Shipment from Factory:

90-120 Days

Payment terms: Net 30 Days

Freight terms: FOB Destination

The price and delivery quoted are firm through: 30-May-2003

Merle Thomas, Television DSM

5401 McAlpine Farm Road

Charlotte, NC 28226 USA

Phone: (704) 540-5828

Fax: (704) 540-5829

E-Mail: merle.thomas@harris.com

Approval: \_\_\_\_\_

***All prices are in U.S. Dollars***

Proprietary data. This document contains proprietary data of Harris Corporation. No disclosure, reproduction, or use of any part thereof may be made except with Harris' prior written approval.

1-FJOGV

Print Date: 25-Mar-2003



**(Tab 2) Forms**

**SUBMIT BID TO:**  
**PURCHASING DIVISION**  
**UNIVERSITY OF FLORIDA**  
**ELMORE HALL, Room 102**  
**PO Box 115250**  
**GAINESVILLE, FL 32611-5250**  
**Phone: (352) 392-1331 - FAX: (352) 392-8837**



**UNIVERSITY OF  
 FLORIDA**

**INVITATION TO BID**  
**Acknowledgment Form**

Page 1 of 22		BID WILL BE OPENED <b>March 26, 2003 @ 3:00 P.M.</b> And may not be withdrawn within 45 days after such date and time.		BID NO. #03K-65	
UNIVERSITY MAILING DATE: <b>March 7, 2003</b>		PURCHASING AGENT DD/dmm <i>DDdy</i>		BID TITLE: <b>WUFT-DT Channel 36 Transmitter</b>	
FEDERAL EMPLOYER IDENTIFICATION NUMBER OR S.S. NUMBER [REDACTED]		Delivery will be <u>120</u> days ARO		CASH DISCOUNT TERMS <b>NONE</b>	
VENDOR NAME/Email address: <b>Harris Corporation, Broadcast Communication Division</b>		REASON FOR NOT SUBMITTING BID			
VENDOR MAILING ADDRESS <b>4240 Irwin-Simpson Road,</b>		CERTIFIED OR CASHIERS CHECK IS ATTACHED, WHEN REQUIRED, IN THE AMOUNT OF \$			
CITY - STATE - ZIP CODE <b>Mason Oh, 45040</b>		<b>POSTING OF BID TABULATIONS</b>			
AREA CODE <b>513</b>		TELEPHONE NO. <b>459-3400</b>		Bid tabulations with intended award(s) will be posted for review by interested parties at the location where the bids were opened and will remain posted for a period of 72 hours. Failure to file a protest within the time prescribed in Section 120.57(3), Florida Statutes, shall constitute a waiver of proceedings under Chapter 120, Florida Statutes.	
		TOLL FREE NO.			
<b>513</b>		FAX NO. <b>459-3890</b>			

*I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a bid for the same materials, supplies, or equipment and is in all respects fair and without collusion or fraud. I agree to abide by all conditions of this bid and certify that I am authorized to sign this bid for the bidder. Bidder certifies that he is/is not in compliance with the wage and price standards established by the Executive Office of the President's Council on wage and price stability.*

AUTHORIZED SIGNATURE (MANUAL)



AUTHORIZED SIGNATURE (TYPED), TITLE

**GENERAL CONDITIONS**

**SEALED BIDS:** All bid sheets and this form must be executed and submitted in a sealed envelope. (DO NOT INCLUDE MORE THAN ONE BID PER ENVELOPE.) The face of the envelope shall contain, in addition to the above address, the date, and time of the bid opening and the bid number. All bids are subject to the conditions specified herein. Those which do not comply with these conditions are subject to rejection.

- EXECUTION OF BID:** Bid must contain a manual signature of authorized representative in the space provided above. Bid must be typed or printed in ink. Use of erasable ink is not permitted. All corrections to prices made by bidder must be initialed.
- NO BID SUBMITTED:** If not submitting a bid, respond by returning only this bidder acknowledgment form, marking it "NO BID", and explain the reason in the space provided above. Failure to respond 3 times in succession without justification may be cause for removal of the supplier's name from the bid mailing list. NOTE: To qualify as a respondent, bidder must submit a "NO BID", and it must be received no later than the stated bid opening date and hour.
- BID OPENING:** Shall be public, on the date, location and the time specified on the bid form. It is the bidder's responsibility to assure that the bid is delivered at the proper time and place of the bid opening. Bids which for any reason are not so delivered, will not be considered. NOTE: Bid tabulations will be furnished upon written request accompanied by a self-addressed, stamped envelope and payment of predetermined fee after the notice of decision or intended decision or ten days after the bid opening, whichever is earlier. Bid tabulations will not be provided by telephone.
- PRICES, TERMS AND PAYMENT:** Firm prices shall be bid and will include all packing, handling, shipping charges, and delivery to the destination shown herein.
  - TAXES:** The University of Florida does not pay Federal Excise and Sales taxes on direct purchases of tangible personal property. The Florida Tax Exempt Number is 11-06-024056-57C. This exemption does not apply to purchases of tangible personal property made by contractors who use the tangible personal property in the performance of contracts for the improvement of state-owned real property.
  - DISCOUNTS:** Bidders are encouraged to reflect trade discounts in the unit prices quoted; however, bidders may offer a discount for prompt payment.

- Prompt payment discounts will not be considered in the bid award. However, every effort will be made to take the discount within the time offered.
- MISTAKES:** Bidders are expected to examine the specifications, delivery schedule, bid prices, extensions, and all instructions pertaining to supplies and services. Failure to do so will be at bidder's risk. Unit prices bid will govern in award.
  - INVOICING AND PAYMENT:** Payment will be made by the University of Florida after the items awarded to a vendor have been received, inspected, and found to comply with award specifications, free of damage or defect and properly invoiced. All invoices shall bear the purchase order number. Payment for partial shipments shall not be made unless specified. An original invoice shall be submitted. Failure to follow these instructions may result in delay in processing invoices for payment. Interest Penalties: Payment shall be made in accordance with Section 215.422, Florida Statutes, which states the contractors' rights and the University's responsibilities concerning interest penalties and time limits for payment of invoices.
  - ANNUAL APPROPRIATIONS:** The State of Florida's performance and obligation to pay under this contract is contingent upon an annual appropriation by the Legislature.
  - CONDITION AND PACKAGING:** It is understood and agreed that any item offered or shipped as a result of this bid shall be a new, current standard production model available at the time of this bid. All containers shall be suitable for storage or shipment, and all prices shall include standard commercial packaging.
  - SAFETY STANDARDS:** Unless otherwise stipulated in the bid, all manufactured items and fabricated assemblies shall comply with applicable requirements of Occupational Safety and Health Act and any standards thereunder.
  - CONFLICT OF INTEREST:** The award hereunder is subject to the provisions of Chapter 112, Florida Statutes. All bidders must disclose with their bid the name of any officer, director, or agent who is also an employee of the University of Florida, or any of its agencies. Further, all bidders must disclose the name of any State employee who owns, directly or indirectly, an interest of five percent (5%) or more in the bidder's firm or any of its branches.
  - AWARDS:** As the best interest of the University of Florida may require, the right is reserved to make award(s) by individual item, group of items, all or none, or a combination thereof; to reject any and all bids or waive any minor irregularity

The University as fiduciary shall, upon occurrence of an insured loss, deposit in a separate account proceeds so received, which the University shall distribute in accordance with such agreement as the parties in interest may reach, or in accordance with an award based on a resolution of a matter in dispute, in which case the procedure shall be as provided in the A.I.A. General Conditions. If after such loss no other special agreement is made, replacement of damaged property shall be covered by appropriate Change Order.

**PROTECTION OF PROPERTY** - The successful bidder shall at all times guard against damage or loss to the property of the University or of other vendors or contractors and shall be held responsible for replacing or repairing any such loss or damage. The University may withhold payment or make such deductions as deemed necessary to insure reimbursement or replacement for loss or damage to property through negligence of the successful bidder or his agents. The contractor shall provide all barricades and take all necessary precautions to protect buildings and personnel.

**OSHA REGULATIONS** - It is the responsibility of the contractor to insure that ALL OSHA regulations applying to this job are adhered to at all times.

**DELIVERY COSTS** - All costs for delivery, storage, freight, and packing are to be prepaid by the contractor, FOB, University of Florida or address as listed in the Invitation to Bid.

**MINORITY BUSINESS STATUS** - To comply with the provisions of 6C1-3.020 Florida Administrative Code (FAC) rule, proposer should check the appropriate designation of the company.

Minority-owned firm \_\_\_\_\_ Non-minority owned firm  X

If minority owned firm, indicate the minority status.

\_\_\_\_\_ M. American Woman \_\_\_\_\_ J. Asian American  
\_\_\_\_\_ H. African American \_\_\_\_\_ I. Hispanic American  
\_\_\_\_\_ K. Native (Indian) American

Indicate if the company is currently certified by the Florida Department of Management Services as a Minority Business Enterprise.

\_\_\_\_\_ Yes  X  No

**PRISON REHABILITATIVE INDUSTRIES** - It is expressly understood and agreed that any articles which are the subject of, or required to carry out this contract shall be purchased from Pride of Florida in the same manner and under the procedures set forth in Section 946.515 (2), (4), Florida Statutes; and for purposes of this contract the person, firm or other business entity carrying out the provisions of this contract shall be deemed to be substituted for this agency insofar as dealings with such corporation. Contact, Terrie Brooks, Bid Administrator, PRIDE of Florida, 2720 Blair Stone RD, Suite G, Tallahassee, FL 32301.







**(Tab 3) Original Bid Documents**

**SUBMIT BID TO:**  
**PURCHASING DIVISION**  
**UNIVERSITY OF FLORIDA**  
**ELMORE HALL, Room 102**  
**PO Box 115250**  
**GAINESVILLE, FL 32611-5250**  
**Phone: (352) 392-1331 - FAX: (352) 392-8837**



**INVITATION TO BID**  
**Acknowledgment Form**

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FEDERAL EMPLOYER IDENTIFICATION NUMBER OR S.S. NUMBER			Delivery will be _____ days ARO		CASH DISCOUNT TERMS
VENDOR NAME/Email address:			REASON FOR NOT SUBMITTING BID		
VENDOR MAILING ADDRESS			CERTIFIED OR CASHIERS CHECK IS ATTACHED, WHEN REQUIRED, IN THE AMOUNT OF \$		
CITY - STATE - ZIP CODE			POSTING OF BID TABULATIONS		
AREA CODE	TELEPHONE NO.	Bid tabulations with intended award(s) will be posted for review by interested parties at the location where the bids were opened and will remain posted for a period of 72 hours. Failure to file a protest within the time prescribed in Section 120.57(3), Florida Statutes, shall constitute a waiver of proceedings under Chapter 120, Florida Statutes.			
	TOLL FREE NO.				
	FAX NO.				

*I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm or person submitting a bid for the same materials, supplies, or equipment and is in all respects fair and without collusion or fraud. I agree to abide by all conditions of this bid and certify that I am authorized to sign this bid for the bidder. Bidder certifies that he is/is not in compliance with the wage and price standards established by the Executive Office of the President's Council on wage and price stability.*

\_\_\_\_\_  
 AUTHORIZED SIGNATURE (MANUAL)

\_\_\_\_\_  
 AUTHORIZED SIGNATURE (TYPED), TITLE

**GENERAL CONDITIONS**

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- NO BID SUBMITTED:** If not submitting a bid, respond by returning only this bidder acknowledgment form, marking it "NO BID", and explain the reason in the space provided above. Failure to respond 3 times in succession without justification may be cause for removal of the supplier's name from the bid mailing list. NOTE: To qualify as a respondent, bidder must submit a "NO BID", and it must be received no later than the stated bid opening date and hour.
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  - TAXES:** The University of Florida does not pay Federal Excise and Sales taxes on direct purchases of tangible personal property. The Florida Tax Exempt Number is 11-06-024056-57C. This exemption does not apply to purchases of tangible personal property made by contractors who use the tangible personal property in the performance of contracts for the improvement of state-owned real property.
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- MISTAKES:** Bidders are expected to examine the specifications, delivery schedule, bid prices, extensions, and all instructions pertaining to supplies and services. Failure to do so will be at bidder's risk. Unit prices bid will govern in award.
  - INVOICING AND PAYMENT:** Payment will be made by the University of Florida after the items awarded to a vendor have been received, inspected, and found to comply with award specifications, free of damage or defect and properly invoiced. All invoices shall bear the purchase order number. Payment for partial shipments shall not be made unless specified. An original invoice shall be submitted. Failure to follow these instructions may result in delay in processing invoices for payment. Interest Penalties: Payment shall be made in accordance with Section 215.422, Florida Statutes, which states the contractors' rights and the University's responsibilities concerning interest penalties and time limits for payment of invoices.
  - ANNUAL APPROPRIATIONS:** The State of Florida's performance and obligation to pay under this contract is contingent upon an annual appropriation by the Legislature.
  - CONDITION AND PACKAGING:** It is understood and agreed that any item offered or shipped as a result of this bid shall be a new, current standard production model available at the time of this bid. All containers shall be suitable for storage or shipment, and all prices shall include standard commercial packaging.
  - SAFETY STANDARDS:** Unless otherwise stipulated in the bid, all manufactured items and fabricated assemblies shall comply with applicable requirements of Occupational Safety and Health Act and any standards thereunder.
  - CONFLICT OF INTEREST:** The award hereunder is subject to the provisions of Chapter 112, Florida Statutes. All bidders must disclose with their bid the name of any officer, director, or agent who is also an employee of the University of Florida, or any of its agencies. Further, all bidders must disclose the name of any State employee who owns, directly or indirectly, an interest of five percent (5%) or more in the bidder's firm or any of its branches.
  - AWARDS:** As the best interest of the University of Florida may require, the right is reserved to make award(s) by individual item, group of items, all or none, or a combination thereof; to reject any and all bids or waive any minor irregularity



**(Tab 4) Point by Point Response**

	GENERAL CONDITIONS		
	SEALED BIDS: All bid sheets and this form must be executed and submitted in a sealed envelope. (DO NOT INCLUDE MORE THAN ONE BID PER ENVELOPE.) The face of the envelope shall contain, in addition to the above address, the date, and time of the bid opening and the bid number. All bids are subject to the conditions specified herein. Those which do not comply with these conditions are subject to rejection.	Understood	
1.	EXECUTION OF BID: Bid must contain a manual signature of authorized representative in the space provided above. Bid must be typed or printed in ink. Use of erasable ink is not permitted. All corrections to prices made by bidder must be initialed.	Understood	
2.	NO BID SUBMITTED: If not submitting a bid respond by returning only this bidder acknowledgment form, marking it "NO BID" ,and explain the reason in the space provided above. Failure to respond 3 times in succession without Justification may be cause for removal of the supplier's name from the bid mailing list NOTE: To qualify as a respondent, bidder must submit a "NO BID", and it must be received no later than the stated bid opening date and hour.	Understood	
3.	BID OPENING: Shall be public on the date, location and the time specified on the bid form. It is the bidder's responsibility to assure that the bid is delivered at the proper time and place of the bid opening. Bids which for any reason are not so delivered, will not be considered. NOTE: Bid tabulations will be furnished upon written request accompanied by a self-addressed, stamped envelope and payment of predetermined fee after the notice of decision or intended decision or ten days after the bid opening, whichever is earlier. Bid tabulations will not be provided by telephone.	Understood	
4.	PRICES, TERMS AND PAYMENT: Firm prices shall be bid and will include all packing, handling, shipping charges, and delivery to the destination shown herein.	Understood	



(a)	TAXES: The University of Florida does not pay Federal Excise and Sales taxes on direct purchases of tangible personal property. The Florida Tax Exempt Number is 11-06-024056-57C."this exemption does not apply to purchases of tangible personal property made by contractors who use the tangible personal property in the performance of contracts for the improvement of state-owned real	Understood	
(b)	DISCOUNTS: Bidders are encouraged to reflect trade discounts in the unit prices quoted, however, bidders may offer a discount for prompt payment. Prompt payment discounts will not be considered in the bid award. However, every effort will be made to take the discount within the time offered.	Understood	
(c)	MISTAKES: Bidders are expected to examine the specifications, delivery schedule, bid prices, extensions, and all instructions pertaining to supplies and services. Failure to do so will be at bidder's risk. Unit prices bid will govern in award.	Understood	
(d)	INVOICING AND PAYMENT: Payment will be made by the University of Florida after the items awarded to a vendor have been received inspected, and found to comply with award specifications, free of damage or defect and properly invoiced. All invoices shall bear the purchase order number. Payment for partial shipments shall not be made unless specified. An original invoice shall be submitted. Failure to follow these instructions may result to delay in processing invoices for payment. Interest Penalties: Payment shall be made in accordance with Section 215.422 Florida Statutes, which states the contractors' rights and the University's responsibilities concerning interest penalties and time limits for payment of invoices.	Understood	
(e)	ANNUAL APPROPRIATIONS: The State of Florida's performance and obligation to pay under this contract is contingent upon an annual appropriation by the Legislature.	Understood	
(f)	CONDITION AND PACKAGING: It is understood and agreed that any item offered or shipped as a result of this bid shall be a new, current standard production model available at the time of this bid. All containers shall be suitable for storage or shipment, and all prices shall include standard commercial	Understood	



(g)	SAFETY STANDARDS: Unless otherwise stipulated in the bid, all manufactured items and fabricated assemblies shall comply with applicable requirements of Occupational Safety and Health Act and any standards there under.	Understood	
5.	CONFLICT OF INTEREST: The award hereunder is subject to the provisions of Chapter 112, Florida Statutes. All bidders must disclose with their id the name of any officer, director, or agent who is also an employee of the University of Florida, or any of its agencies. Further, all bidders must disclose the name of an State employee who owns, directly or Indirectly, an interest of five percent (5%) or more to the bidders fun or any of Its branches.	Understood	
6.	AWARDS: As the best Interest of the University of Florida may require, the right is reserved to make award(s) by Individual Item, group of items, all or none, or a combination thereof to reject, any and all bids or waive any minor irregularity or technicality in bids received. When it is determined there is no competition to the lowest responsive bidder, evaluation of other bids are not required. Bidders are cautioned to make no assumptions unless their bid has been evaluated as being responsive.	Understood	

7.	<p><b>INTERPRETATIONS/DISPUTES:</b> Any questions concerning conditions or specifications shall be directed in writing to the Purchasing Division. Inquiries must reference the date of bid opening and the bid number. No interpretations shall be considered binding unless provided in writing by the University of Florida in response to requests in full compliance with this provision. Any person who is affected adversely by the University's decision or intended decision shall file with the University a notice of protest in writing within 72 hours after the posting of the bid tabulation or after receipt of the notice of the University's decision or intended decision and shall file a formal written protest within 10 days after the date the notice of protest was filed. With respect to a protest of the specifications contained in an invitation to bid the notice of protest shall be filed in writing within 72 hours after the receipt of the project plans and specifications or intended project plans and specifications and the formal written protest shall be filed within 10 days after the date the notice of protest is filed. Failure to file a notice of protest or failure to file a formal written protest within the time prescribed in section 120.573), Florida Statutes, shall constitute a waiver of proceedings under Chapter 120, Florida Statutes. At the time of filing the formal written protest, the bidder shall post with the University a bond, payable to the University of Florida, in an amount equal to 10% of the University's estimate of the total volume of the contract, or \$ 10,000, whichever is less. The bond shall be conditioned upon the payment of all costs which may be adjudged against the bidder,</p>	Understood	
8.	<p><b>GOVERNMENTAL RESTRICTIONS:</b> In the event any governmental restrictions may be imposed which would necessitate alteration of the material, quality, workmanship or performance of the items offered in this bid prior to their livery, it shall be the responsibility of the successful bidder to notify the purchaser at once indicating in writing the specific regulation which requires an alteration. The University of Florida reserves the right to accept any such alteration, including any price adjustments occasioned thereby, or to cancel the contract at no expense to the University.</p>	Understood	

9.	<p>LEGAL REQUIREMENTS: Applicable provision of all federal, state, county and local laws, and of all ordinances rules and regulations shall govern development, submittal and evaluation of all bids received to response hereto and shall govern any and all claims and disputes which may arise between person(s) submitting a bid response hereto and the University of Florida, by and through its officers, employees and authorized representatives, or any other person, natural or otherwise: and lack of knowledge by any bidder shall not constitute a cognizable defense against the legal effect thereof.</p>	Understood	
10.	<p>LOBBYING: Contractor is prohibited from using funds provided under any contract or purchase order for the purpose of lobbying the Legislature or any official, officer, commission, board, authority, council, committee, or department of the executive branch or the judicial branch of state government.</p>	Understood	
11.	<p>ADVERTISING: In submitting a bid, the bidder agrees not to use the results there from as a part of any commercial advertising.</p>	Understood	
12.	<p>ASSIGNMENT: Any Contract or Purchase Order issued pursuant to this invitation to bid and the monies which may become due hereunder are not assignable except with the prior written approval of the purchaser,</p>	Understood	
13.	<p>LIABILITY: The seller agrees to indemnify and save the University of Florida, its officers, agents, and employees harmless from any and all judgments, orders, awards, costs and expenses, including attorneys fees, and also all claims on account of damages to property, including loss of use thereof, or bodily injury (including death) which maybe hereafter sustained by the seller, its employees, its subcontractors, or the University of Florida, its officers, agents, or employees, or third persons, arising out of or in connection with this contract and which are the result of the seller's breach of contract or of the negligent acts of the seller, its officers, agents, and employees. This clause does not apply to contracts between government agencies</p>	Understood	
14.	<p>Facilities: The University reserves the right to inspect the bidder's facilities at any time with prior notice.</p>	Understood	





15.	ADDITIONAL QUANTITIES: For a period not exceeding nine (90) days from the date of acceptance of this offer by the University of Florida. the right is reserved to acquire additional quantities up to but not exceeding those shown on bid or the bid level at the prices bid in this invitation, If additional quantities are not acceptable the bid sheets must be noted "BID IS FOR SPECIFIED QUANTITY ONLY".	Understood	
16.	SERVICE AND WARRANTY: Unless otherwise specified, the bidder shall define any warranty service and replacements that will be provided during and subsequent to this contract Bidders must explain on an attached sheet to what extent warranty and service facilities are provided.	Understood	
17.	SAMPLES: Samples of items, when called for, must be furnished free of expense, on or before bid opening time and date and if not destroyed, may upon request, be returned at the bidder's expense. Each individual sample must be labeled with bidder's name, manufacturer's brand name and number, bid number and item reference. Request for return of samples shall be accompanied by instructions which include shipping authorization and name of carrier and must be received with the bid. If instructions are not received within this time, the commodities shall be disposed of by the University of Florida.	Understood	
18.	INSPECTION, ACCEPTANCE AND TITLE: Inspection and acceptance will be at destination unless otherwise provided. Tide and risk of loss or damage of all items shall be the responsibility of the contract supplier until accepted by the University, unless loss or damage results from negligence by the University. The contract supplier shall be responsible for filing, processing and collecting all damage claims. However to assist him in the expeditious handling of damage claims, the University will:	Understood	
(a)	Record any evidence of visible damage on all copies of the delivering carrier's Bill of Lading	Understood	
(b)	Report damage (Visible or Concealed) to the carrier and contract supplier confirming, such reports in writing within 15 days of delivery, requesting that the carrier inspect the damaged merchandise.	Understood	
(c)	Retain the item and its shipping container, including inner packing material until inspection is performed by the carrier, and disposition given by the contract supplier.	Understood	



(d)	Provide the contract supplier with a copy of the carriers Bill of Lading and damage inspection report.	Understood	
19.	<p>PATENTS AND ROYALTIES: The bidder, without exception, shall indemnify and save harmless the University of Florida and its employees from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, patented, or unpatented invention, process, or article manufacture or used in the performance of the contract, including its use by the University of Florida. If the bidder uses any design, device, or materials covered by letters, patent or copyright, it is mutually agreed and understood without exception that the bid prices shall include all royalties or costs arising from the use of such design, device, or materials in anyway involved in the work,</p>	Understood	
20.	<p>CONFLICT BETWEEN DOCUMENTS: If any terms and conditions contained within the documents that are a part of this ITB or resulting contract are in conflict with any other terms and conditions contained therein then the various documents comprising this ITB or resulting contract, as applicable shall govern in the following order of precedence: Change Order, Purchase Order Addenda, Special Conditions, General Conditions, Specifications, Departmental Description of Work, and Bid.</p>	Understood	

21.	<p>MANUFACTURERS' NAMES AND APPROVED EQUIVALENTS: Any manufacturer's names trade names brand names, information and/or catalog numbers listed in a specification are for information and not intended to limit competition. If bids are based on equivalent products, indicate on the bid form the manufacturer's name and number. Bidder shall submit with the bid, cuts, sketches, and descriptive literature, and/or complete specifications. Reference to literature submitted with a previous bid will not satisfy this provision The bidder shall also explain in detail the reasons why the proposed equivalent will meet the specifications and not be considered an exception thereto. The University of Florida reserves the right to determine acceptance of item(s) as an approved equivalent. Bids which do not comply with these requirements are subject to rejection. Bids lacking any written indication of intent to quote an alternate brand will be received and considered in complete compliance with the specifications as listed on the bid form.</p>	Understood	
22.	<p>NONCONFORMANCE TO CONTRACT CONDITIONS: Items may, be tested and/or inspected for compliance with specifications by the Florida Department of Agriculture and Consumer Services, or by other appropriate testing facilities. The data derived from any tests for compliance with specifications are public records and open to examination thereto in accordance with Chapter 119 Florida Statutes. Items delivered not conforming to specifications may be rejected and returned at vendor's expense. These items and items not delivered as per delivery data in proposal and/or purchase order may result in proposer being found in default in which event any and all re-procurement costs may be charge against the defaulting contractor. Any violation of these conditions may, also result m the proposer's name being removed from the University of Florida's vendor mailing list and the Department of Management Services, Division of Purchasing, mailing list</p>	Understood	
23.	<p>PUBLIC RECORDS: All proposal information submitted and opened becomes subject to the Public Records law set forth in Chapter 119, Florida Statutes.</p>	Understood	



24.	PUBLIC RECORDS CANCELLATION: Any resulting contract may be unilaterally canceled for refusal by the proposer to allow public access to all documents papers, letters or other materials subject to the provisions of Chapter 119, Florida Statutes, and' made or received by the proposer in conjunction with the contract,	Understood	
25.	AUDIT: Invoices for fees or other compensation for services or expenses shall be submitted in detail sufficient for proper pre-audit and post-audit reviews.	Understood	
26.	TRAVEL: Bills for any travel expenses must be submitted in accordance with Section 112.061, Florida Statutes. No travel expenses may be aid by the University to. any individual in excess of the amount permitted Section 112.061 Florida Statutes. Any expenses in excess of the amounts prescribed by law shall be borne by the proposer.	Understood	
27.	DELIVERY: Unless actual date of delivery is specified (or if specified delivery cannot be met), show number of days required to make delivery after receipt of purchase order in space provided. Delivery time may become a basis for making an award (see Special Conditions). Delivery shall be within the normal working hours of the University of Florida, Monday through Friday, unless otherwise specified.	Understood	
28.	PUBLIC PRINTING - PREFERENCE GIVEN PRINTING WITHIN THE STATE: The University of Florida shall give preference to bidders located within the state when awarding contracts to have materials printed, whenever such printing can be done at no greater expense than, and at a level 'of quality comparable to, that obtainable from a bidder located outside of the state.	Understood	
a).	CONTRACTS NOT TO BE SUBLET: In accordance with Class B Printing Laws and Regulations "Printing shall be awarded only to riming firms. No contract shall be awarded to any broker, agent, or independent contractor offering g printing manufactured by other firms or persons."	Understood	



b)	DISQUALIFICATION OF BIDDER: Reasonable grounds for believing that a bidder is involved in more than one proposal for the same work will be cause for rejection of all proposals in which such bidders are believed to be involved. Any or all proposals will be rejected if there is reason to believe that collusion exists between bidders. Proposals in which the prices obviously are unbalanced will be subject to reaction	Understood	
(c)	TRADE CUSTOMS: Current trade customs of the printing industry are recognized unless excepted by Special Conditions or Specifications herein	Understood	
(d)	COMMUNICATIONS: It is expected that all materials and roofs will be picked up and delivered by the printer or his representative, unless otherwise specified. Upon request materials will be forwarded by registered mail.	Understood	
(e)	RETURN OF MATERIAL: All copy, photos artwork, and other materials supplied by the University of Florida must be handled carefully and returned in good condition upon completion of the job. Such return is a condition of the contract and payment will not be made until return is effected.	Understood	
	NOTE: ANY AND ALL SPECIAL CONDITIONS AND SPECIFICATIONS ATTACHED HERETO WHICH VARY FROM THESE GENERAL CONDITIONS SHALL HAVE PRECEDENCE.	Understood	
AWARD -	Award will be made on an "All-or-None Offer Total Offer" basis. Any contract awarded pursuant to this Bid / RFP will be awarded to the single best bidder / proposer or to none at all.	Understood	
CANCELLATION -	Orders or contracts resulting from the bid award will be subject to immediate cancellation if either the products or the service does not comply with bid specifications.	Understood	
AVAILABILITY OF FUNDS -	The State of Florida's and the University's performance and obligation to pay under this contract is contingent upon an annual appropriation by the Legislature of the State of Florida.	Understood	



AS SPECIFIED -	A purchase order will be issued to the successful bidder with the understanding that all items delivered must meet the specifications herein. Items delivered not as specified will be returned to the vendor, at no expense to the University, and vendor will be required to deliver items meeting specifications or be held in default in accordance with General Condition #22 of this bid.	Understood	
F.O.B. POINT -	The F.O.B. Point shall be destination. Exact delivery point will be indicated on the Purchase Order.	Understood	
DELIVERY -	Delivery is requested within 90-120 calendar days after receipt of purchase order.	Understood	
ASSEMBLY AND/OR PLACEMENT -	It will be the responsibility of the successful bidder to supply the necessary labor and materials for the placement of all equipment as specified in the Invitation to Bid and assure proper adjustment and satisfactory operation of all features prior to acceptance by the University.	Understood	
DEBRIS -	Successful bidder shall be responsible for the prompt removal of all debris, which is a result of delivery, assembly, or installation.	Understood	
LABELS -	Labels shall be affixed as required by any or all State and Federal statutes or regulations.	Understood	
INVITATION TO BID FORM -	All bids should be submitted on the University of Florida Invitation to Bid/Bidders Acknowledgment form with one (1) complete original bid and one (1) complete photocopy in a sealed envelope, with the following information on the outside of the envelope: bid number, date and time of bid opening, and Company name in order to be considered in the award.	Understood	
FAXED BIDS -	Faxed bids are authorized in response to this Invitation to Bid. Notify the appropriate purchasing office prior to faxing the bid. It is the responsibility of the vendor to insure that the fax is received in the Purchasing Division, prior to bid opening.	Understood	
EQUAL OPPORTUNITY STATEMENT -	The State Universities have established equal opportunity practices which conform to both the spirit and the letter of all laws against discrimination and prohibits discrimination based on race, creed, color, sex, age, national origin, marital status or religion. To be considered for inclusion as a supplier under this agreement, the proposer commits to the following:	Understood	



A.	The provisions of Executive Order 11246, September 24, 1966, and the rules, regulations, and relevant orders of the Secretary of Labor are applicable to each order placed against this agreement regardless of value.	Understood	
B.	If the proposer expects to receive \$10,000 in orders during the first 12 months of this agreement, a complete certificate of non-segregated facilities shall be attached to the proposal response.	Understood	
C.	If the proposer expects to receive \$50,000 in orders during the first 12 months of this agreement and employs more than 50 people, standard form 100 (EE00-1) must be filed prior to March 1 of each year.	Understood	
D.	If the proposer expects to receive \$50,000 in orders during the first 12 months and employs more than 50 people, a written program for affirmative action compliance must be maintained by the proposer, subject to review upon request by the user agencies of this agreement.	Understood	
	If you have already complied with the above, please indicate	Understood	
INQUIRIES -	The University will not give verbal answers to inquiries regarding the specifications, or verbal instructions prior to or after the award of the bid. A verbal statement regarding same by any person shall be non-binding. The University is not liable for any increased costs resulting from the Bidder accepting verbal direction. All changes, if necessary, shall be made by written addendum to the bid.	Understood	
	Any explanation desired by Vendors must be requested of the University of Florida Purchasing Department in writing, and if an explanation is necessary, a reply shall be made in the form of an addendum, a copy of which will be forwarded to each Vendor who has received a set of the bid documents from the University. Vendors obtaining bid documents from any other source must notify the University of their name, address, telephone, and facsimile numbers in order to receive any addenda. Direct all inquiries to:	Understood	
	Donna S. Doty University of Florida Purchasing 102 Elmore Hall/P0 Box 115250 Gainesville FL 32611 <a href="mailto:ddotY@ufl.edu">Email: ddotY@ufl.edu</a>	Understood	

<p>PARTIAL PAYMENT -</p>	<p>Partial payment in the amount of ninety percent (90%) of the value of items and/or services received and accepted may be requested by the submission of three original notarized copies of the University of Florida Certificate of Partial Payment Form and three copies of the Schedule of Contract Values as described in the paragraph below. The purchase order number, and the project number shall appear on each certificate. The remaining ten percent (10%) shall be withheld until all remaining items and /or services have been fully accepted by the University. Only one partial payment will be made per month. If the total contract price is \$200,000. or less, the contractor shall comply with Florida Statutes 255.05(1) (b).</p>	<p>Understood</p>	
	<p>The University reserves the right to request supporting documentation, such as Sub-Contractor's Billings and Materials Invoices to support the Partial Payment Request, and to refuse to authorize payment if the supporting documentation is not provided.</p>	<p>Understood</p>	
	<p>Pursuant to Section 215.422(3)(b), Florida Statutes, a state agency shall mail the vendor's payment within 40 days after receipt of an acceptable invoice and receipt, inspection and acceptance of the goods and/or services provided, in accordance with the terms and conditions of the purchase order/contract. Failure to issue the warrant within 40 days shall result in the agency paying interest at a rate of one percent (1%) per month calculated on a daily basis on the unpaid balance. The interest penalty shall be mailed within 15 days after mailing the warrant.</p>	<p>Understood</p>	
	<p>Within ten days from date of Notice to Proceed, which together with the contract documents form the Contract between the University of Florida and Contractor, the Contractor shall submit to the Projects Coordinator for approval, one copy of a Schedule of Contract Values which will reflect the estimated cost of each subdivision of the work of each specification section. The value of each item shall include a true proportionate amount of the Contractor's overhead and profit. The sum of all such scheduled values shall equal the Contract Sum.</p>	<p>Understood</p>	



	The approved form of Schedule of Contract Values will accompany and support each of the contractor's Certificate of Partial Payment and shall indicate the value of suitably stored material as well as labor performed and materials incorporated into the work for each subdivision of the schedule during the period for which the requisitions prepared. The Schedule of Contract Values form will serve as a guide to present this and other pertinent information which will facilitate the checking and processing by the University's representative of the Contractor's Application for Payment.	Understood	
	These maximum percentages and other considerations relative to Change Orders shall be as follows:		
A.	For all work done by his own organization, or subsidiaries of his own organization, including work traditionally considered as subcontractor work, the Contractor may add 15% of his actual costs for combined overhead and profit.	Understood	
B.	For all work done by his Subcontractors the respective subcontractors may add 15% of their actual costs for combined overhead and profit and the General Contractor may add 5% of the above subcontractor's cost for his overhead and profit.	Understood	
C.	The above percentages shall be considered reasonable allowance for overhead and profit due the Contractor.	Understood	
D.	The Contractor shall submit receipts or other evidence showing his cost and his right to the payment claims if so required by the Project Coordinator.	Understood	
E.	Labor costs shall include supervision, estimation, lay-out, mechanics and laborers' wages including payroll taxes and assessments and insurance premiums.	Understood	
F.	Material, equipment, and equipment rental costs shall be the trade discount costs plus State sales tax where applicable.	Understood	



<p>PERFORMANCE AND PAYMENT BOND -</p>	<p>Projects with a value of less than \$100,000.00 are not required to have a Performance and Payment Bond. All projects with a value of \$100,000.00 or more are required to have a Performance and Payment Bond. In accordance with Chapter 255.05, Florida Statutes, the successful bidder shall furnish a surety bond as a security for faithful performance of order(s) awarded as a result of this contract, and for the payment of all subcontractors, materialmen, and laborers. Surety of such bond shall be in an amount equal to the contract. The performance and payment bond shall provide for indemnity as well as completion and remedial obligations, and shall specifically refer to damages for delay caused by the contractor. The Attorney-in-Fact who signs the bond must file with the bond a certificate and copy of a Power of Attorney with an effective date. This performance and payment bond must be forwarded to and received by the Purchasing Division no later than two (2) weeks after receipt of Notice to Proceed and before any costs are incurred on this contract.</p>	<p>Understood</p>																													
	<p>To be acceptable as Surety on Performance and Payment Bonds, a Surety company shall comply with the following provisions:</p>																														
<p>A.</p>	<p>The Surety Company must be admitted to do business in the state of Florida.</p>	<p>Understood</p>																													
<p>B.</p>	<p>The Surety Company shall have been in business and have a record of successful continuous operations for at least five years.</p>	<p>Understood</p>																													
<p>C.</p>	<p>The Surety Company shall have at least the following minimum ratings:</p> <table border="1" data-bbox="342 1308 1019 1591"> <thead> <tr> <th colspan="2">CONTRACT AMOUNT</th> <th>POLICY HOLDER'S RATINGS*</th> <th>REQUIRED FINANCIAL RATING*</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>to 99,999</td> <td></td> <td>Not required</td> </tr> <tr> <td>100,000</td> <td>to 499,999</td> <td>A</td> <td>Class VIII**</td> </tr> <tr> <td>500,000</td> <td>to 749,999</td> <td>A</td> <td>Class IX</td> </tr> <tr> <td>750,000</td> <td>to 999,999</td> <td>A</td> <td>Class X</td> </tr> <tr> <td>1,000,000</td> <td>to 1,499,999</td> <td>A</td> <td>Class X1</td> </tr> <tr> <td>1,500,000</td> <td>or more</td> <td>A</td> <td>Class XII</td> </tr> </tbody> </table>	CONTRACT AMOUNT		POLICY HOLDER'S RATINGS*	REQUIRED FINANCIAL RATING*	0	to 99,999		Not required	100,000	to 499,999	A	Class VIII**	500,000	to 749,999	A	Class IX	750,000	to 999,999	A	Class X	1,000,000	to 1,499,999	A	Class X1	1,500,000	or more	A	Class XII	<p>Understood</p>	
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<p>*</p>	<p>Best's Policy holder's Rating of "A" and "B" (which signifies A = Excellent, and B = Good, based upon good underwriting, economic management, adequate reserves for undisclosed liabilities, net resources for unusual stock and sound investment) or an equivalent rating from the insurance commissioner if not rated by Best's.</p>	<p>Understood</p>																													



**	Chapter 624.609, Florida Statutes.	Understood	
D.	The Surety Company shall not expose itself to any loss on any one risk in an amount exceeding ten percent (10%) of its surplus to policy holders provided:		
1.	Any risk or portion of any risk which shall have been reinsured (in which case the minimum requirements above also applies to the reinsuring carrier) in assuming Insurer authorized or approved by the Insurance Commissioner to do such business in this state shall be deducted in determining the limitation of risk prescribed in the section.	Understood	
2.	In the case of a surety insurance company, there shall be deducted in addition to the deduction for reinsurance, the amount assumed by any co-surety, the value of any security deposited, pledged or held subject to the content of the surety and for the protection of the surety.	Understood	
CONTRACTOR'S LIABILITY INSURANCE -	The Contractor shall purchase from and maintain with a company or companies lawfully authorized to do business in Florida such insurance as will protect the Contractor from claims set forth below which may arise out of or result from the Contractor's operations under the Contract and for which the Contractor may be legally liable, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. All insurance policies shall be issued and countersigned by representatives of such companies duly authorized for the State of Florida and shall be written on ISO standard forms or their equivalents. The Contractor shall provide the ISO Commercial General Liability policy for general liability coverages. All liability policies shall provide that the University is a named additional insured as to the operations of the Contractor under the University-Contractor Agreement and shall provide the Severability of Insureds Provision. The University shall be exempt from, and in no way liable for, any sums of money which may represent a deductible in any insurance policy. The payment of such deductible shall be the responsibility solely of the Contractor and/or Subcontractor providing such insurance. This insurance shall protect the Contractor from the following claims:	Comply	Harris can name the University as an additional insured.



A.	Claims under worker's or workmen's compensation, disability benefit and other similar employee benefit acts which are applicable to the work to be performed;	Comply	
B.	Claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;	Comply	
C.	Claims for damages because of bodily injury, sickness or disease, or death of any person other than the contractor's employees;	Partially Comply	Harris does not comply to sickness or disease for an installation contract.
D.	Claims for damages insured by usual personal injury liability coverage including claims which are sustained (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;	See Comment	Harris is willing to negotiate the insurance clause.
E.	Claims for damages, other than to the work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;	See Comment	Harris is willing to negotiate the insurance clause.
F.	Claims for damages because of bodily injury, death of a person or property damage arising out of ownership, maintenance or use of a motor vehicle; and	See Comment	Harris is willing to negotiate the insurance clause.
G.	Claims involving contractual liability insurance applicable to the Contractor's obligations in the A.I.A. General Conditions.	See Comment	Harris is willing to negotiate the insurance clause.
	The required Contractor's Liability Insurance shall be written for limits of not less than \$100,000 per person, \$300,000 per occurrence. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of work until date of final payment and termination of any coverage required to be maintained after final payment. The required insurance shall include contractual liability insurance applicable to the contractor's obligations in the A.I.A. General Conditions, and coverage for the "XCU" exposure.	Comply	Harris is willing to negotiate the insurance clause.
Worker's Compensation -	The Contractor shall secure and maintain for the life of this Agreement, valid Worker's Compensation Insurance as required by chapter 440, Florida Statutes.	Comply	
Automobile Liability -	The Contractor shall secure and maintain, during the life of this Agreement, Automobile Liability insurance on all vehicles against bodily injury and property damage in at least the amount of \$100,000.00 per person, \$300,000.00 per occurrence.	Comply	



<p>Certificates of Insurance -</p>	<p>The Contractor shall file with the University Certificates of Insurance acceptable to the University prior to the commencement of work. These Certificates and the insurance policies which are required shall contain a provision that coverages afforded under the policies will not be canceled or allowed to expire until at least 30 days prior written notice has been given to the University. If any of the foregoing insurance coverages are required to remain in force after final payment an additional certificate evidencing continuation of such coverage shall be submitted with the final Application for Payment as required by Subparagraph 9.10.2, A.I.A. General Conditions. The Contractor shall furnish one copy of the Certificate of Insurance which shall be dated and show the name of the insured Contractor, the specific job by name and job number, the name of the insurer, the number of the policy, its effective date, and its termination date.</p>	<p>Understood</p>	<p>Harris is willing to negotiate the insurance clause.</p>
<p>Property Insurance -</p>	<p>The Contractor shall purchase and maintain from a company or companies lawfully authorized to do business in Florida, property insurance, written on a Builder's Risk completed value form, in the amount of the initial contract sum, as well as, subsequent modifications for the entire work at the site on a replacement cost basis. Such property insurance shall be maintained, unless otherwise provided in the contract documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made as provided in the A.I.A. General Conditions or until no person or entity other than the University has an insurable interest in the property required to be covered, whichever is earlier. This insurance shall include interests of the University, the Contractor, and Sub-contractors in the work.</p>	<p>Understood</p>	
	<p>Property insurance shall be on a Special Causes of Loss form or its equivalent, including reasonable compensation for Architect/Engineer's services and expenses required as a result of such insured loss. The Contractor shall purchase and maintain the Building Ordinance Endorsement.</p>	<p>Comply with Clarification</p>	<p>Harris is willing to negotiate this clause.</p>
	<p>If the property insurance provides deductibles the Contractor shall pay costs not covered because of such deductibles.</p>	<p>Comply</p>	



	<p>Before an exposure to loss may occur, the Contractor shall file with the University a copy of each policy that includes the required Property Insurance coverages. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this project. Each policy shall contain a provision that the policy will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the University.</p>	Comply With Clarification	Harris is willing to negotiate this clause.
	<p>A loss insured under property insurance shall be adjusted by the University as fiduciary and made payable to the University as fiduciary for the insureds, as their interests may appear. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors in similar manner.</p>	Comply With Clarification	Harris is willing to negotiate this clause.
	<p>The University as fiduciary shall, upon occurrence of an insured loss, deposit in a separate account proceeds so received, which the University shall distribute in accordance with such agreement as the parties in interest may reach, or in accordance with an award based on a resolution of a matter in dispute, in which case the procedure shall be as provided in the A.I.A. General Conditions. If after such loss no other special agreement is made, replacement of damaged property shall be covered by appropriate Change Order.</p>	Comply With Clarification	Harris is willing to negotiate this clause.
PROTECTION OF PROPERTY -	<p>The successful bidder shall at all times guard against damage or loss to the property of the University or of other vendors or contractors and shall be held responsible for replacing or repairing any such loss or damage. The University may withhold payment or make such deductions as deemed necessary to insure reimbursement or replacement for loss or damage to property through negligence of the successful bidder or his agents. The contractor shall provide all barricades and take all necessary precautions to protect buildings and personnel.</p>	Understood	
OSHA REGULATIONS -	<p>It is the responsibility of the contractor to insure that ALL OSHA regulations applying to this job are adhered to at all times.</p>	Understood	
DELIVERY COSTS -	<p>All costs for delivery, storage, freight, and packing are to be prepaid by the contractor, FOB, University of Florida or address as listed in the Invitation to Bid.</p>	Understood	



<p>MINORITY BUSINESS STATUS -</p>	<p>To comply with the provisions of 6C1-3.020 Florida Administrative Code (FAC) rule, proposer should check the appropriate designation of the company.</p>	<p>Understood</p>	
<p>PRISON REHABILITATIVE INDUSTRIES -</p>	<p>It is expressly understood and agreed that any articles which are the subject of, or required to carry out this contract shall be purchased from Pride of Florida in the same manner and under the procedures set forth in Section 946.515 (2), (4), Florida Statutes; and for purposes of this contract the person, firm or other business entity carrying out the provisions of this contract shall be deemed to be substituted for this agency insofar as dealings with such corporation. Contact, Terrie Brooks, Bid Administrator, PRIDE of Florida, 2720 Blair Stone RD, Suite G, Tallahassee, FL 32301.</p>	<p>Understood</p>	
<p>BID DELIVERY -</p>	<p>If this bid will be mailed through the U. S. Postal Service as regular mail, address the bid to the PO Box as shown on the Invitation to Bid Acknowledgment Form.</p>	<p>Understood</p>	
	<p>If a company representative plans to attend the bid opening; if the bid will be hand delivered; or if the bid will be delivered by a service other than the U. S. Postal Service regular mail, i.e., Federal Express, Airborne, United Parcel Service, Courier, U. S. Postal Express Mail, etc., address the bid to the Building and room number as shown on the Invitation to Bid Acknowledgment form.</p>	<p>Understood</p>	
<p>PUBLIC ENTITY CRIME -</p>	<p>A person or affiliate who has been placed on the convicted vendor list by the Department of Management Services, State of Florida, may not submit a proposal on a contract to provide any goods or services, including construction, repairs, or leases and may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant for the University of Florida for a period of 36 months from the date of being placed on the convicted vendor list, a "person" or "affiliate" includes any natural person or any entity, including predecessor or successor entities or any entity under the control of any natural person who is active in its management and who has been convicted of a public entity crime (Rule 6C1-3.020 FAC).</p>	<p>Understood</p>	



<p>FEDERAL DEBARRMENT -</p>	<p>By signing this bid/proposal, the offeror certifies, to the best of its knowledge or belief, that the offeror and its principals are not presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency; or have not within a three-year period preceding this offer, been convicted of or had a civil judgment rendered against them in connection with a public contract or subcontract; or are not criminally or civilly charged by a governmental entity with commission of offenses; or has not within a three year period preceding this offer had a contract terminated for default by any Federal agency. (Federal Acquisition Regulation 52.209-5)</p>	<p>Understood</p>	<p>This clause does not apply to Harris</p>
<p>DISCRIMINATION</p>	<p>An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not award or perform work as a contractor, supplier, subcontractor or consultant under contract with any public entity, and may not transact business with any public entity.</p>	<p>Understood</p>	
	<p>NOTICE TO CONTRACTORS OF ASBESTOS-CONTAINING MATERIALS IN UNIVERSITY BUILDINGS - Asbestos containing materials (ACM) can be found in almost any building in the United States more than 10 years old. The University of Florida is no exception. The types of asbestos most commonly found are pipe and boiler insulation, fireproofing, hard panels known as "Transite", floor tile, and spray or trowel-applied ceiling finishes. ACM is generally not hazardous if left undisturbed.</p>	<p>Understood</p>	
	<p>The University has implemented an Asbestos Program to assure safe management and removal of ACM. Contractors, consultants, and other vendors providing service to the University may encounter ACM and must, therefore, comply with the following instructions:</p>	<p>Understood</p>	
<p>A.</p>	<p>Avoid disturbing suspected ACM. Exercise caution and watch for possible ACM.</p>	<p>Understood</p>	





B.	If it is necessary to disturb ACM, first notify the appropriate Division Asbestos Representative listed in this notice, or the University of Florida Asbestos Coordinator, before proceeding with your work. You shall take whatever precautions are necessary to protect humans' health and the environment, and comply with all applicable Federal, State, and Local laws pertaining to asbestos.	Understood													
C.	If you require additional information on possible locations of ACM in a particular building, contact the Asbestos Representative from the Division for which you are working.	Understood													
	<table border="0"> <tr> <td>Division</td> <td>Asbestos Telephone</td> </tr> <tr> <td>Physical Plant</td> <td>Assoc. Dir. (352) 392-7793</td> </tr> <tr> <td>Health Center</td> <td>Physic. Plant Dir. Health Ctr (352) 392-4417</td> </tr> <tr> <td>Housing</td> <td>Asst. Dir. of (352) 392-2161</td> </tr> <tr> <td>Reitz Union</td> <td>Maintenance (352) 392-1614</td> </tr> <tr> <td>IFAS</td> <td>Engineer (352) 392-6488</td> </tr> </table>	Division	Asbestos Telephone	Physical Plant	Assoc. Dir. (352) 392-7793	Health Center	Physic. Plant Dir. Health Ctr (352) 392-4417	Housing	Asst. Dir. of (352) 392-2161	Reitz Union	Maintenance (352) 392-1614	IFAS	Engineer (352) 392-6488	Understood	
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AMERICANS WITH DISABILITY ACT -	If special accommodations are needed in order to attend a pre-bid meeting or a bid opening, contact Emily Hamby (352) 392-1331 or email at <a href="mailto:Ehamby@ufl.edu">Ehamby@ufl.edu</a> three business days prior to either PreProposal meeting or Proposal opening.	Understood	This clause does not apply to Harris												
NOTICE TO CONTRACTOR: -	The University shall consider the employment by any contractor of unauthorized aliens a violation of section 274A(e) of the Immigration and Nationality Act. Such violation shall be cause for unilateral cancellation of this contract.	Comply													
USE OF TERMS: -	The terms University of Florida, University Purchasing and Department of WUFT are used synonymously in this Request For Proposal/Invitation to Bid unless otherwise indicated. The terms vendor, proposer and contractor are used synonymously in this RFP/ITB unless otherwise indicated.	Understood													
	Equipment Specifications	Understood													
	WUFT-DT Channel 36 Transmitter	Understood													
	The purpose of this document is to provide minimum acceptable standards of performance for a Turnkey High Power Digital Transmitter System with Installation and Testing. This transmitter will be used to transmit WUFT-DT Channel 36 from our transmitter site located at 4732 N.W. 53" Ave. This is an ALL-OR-NOTHING bid.	Understood													

	All bids must meet or exceed these specifications, if the manufacturer is unable to meet any specification, it should be noted on the reply as well as a reason why that specification is not met. Any terms used, herein that refer to registered trademarks of specific manufacturers is for the purpose of indicating a type of performance or feature required. It is not meant for any bidder to purchase this feature from the current manufacturer in order to comply with these bid specifications. The only requirement is for the bidder to be able to furnish comparable performance or features and supply documentation to support the claim.	Understood	Please see Technical point by point
	Bidders may propose alternative equipment that is not on the approved equipment list delineated in this specification subject to evaluation by the purchaser (at the purchaser's discretion) as follows:		
A.	Alternative equipment shall be furnished free of expense to the purchaser for evaluation within ten (10) days after bid opening date.	Understood	
B.	Alternative equipment shall be set-up and made to perform by bidder's personnel, free of expense to the purchaser, at the point of delivery delineated in this specification.	Understood	
C.	Approval of the alternative equipment shall rest solely with the purchaser.	Understood	
	Delivery shall be F.O.B. (Destination) to: WUFT-TV 4732 N.W. 53 <sup>rd</sup> Ave. Gainesville, FL 32605	Understood	
1.0	Manufacturer's Requirements		
1.01	To demonstrate reliability and commitment to broadcast customers, the manufacturer shall have been continuously manufacturing high power UHF broadcast transmitters for a minimum of 15 years.	Comply	
1.02	The transmitter manufacturer shall have a service department that is accessible 24 hours a day, 365 days a year.	Comply	
1.03	The manufacturer shall employ a staff of full-time customer service engineers available for telephone consultation or on-site service.	Comply	
1.04	The manufacturer shall provide parts and service for a minimum of ten years after the sale of the equipment.	Comply	
1.05	The transmitter manufacturer shall conduct Transmitter Training Schools at the factory. WUFT will be allowed 4 slots to schools associated with this transmitter. WUFT will pay its own expenses for schooling.	Comply	



1.06	The transmitter manufacturer shall provide Service Bulletins to inform customers of modifications and improvements to the equipment. These bulletins shall provide complete instructions for updates when necessary.	Comply	
1.07	To provide transmitter owners with the latest transmitter improvements, the transmitter manufacturer shall have a demonstrated policy of availability of up-date kits whenever possible.	Comply	
1.08	The manufacturer shall warrant the transmitter to be free from defects in material and workmanship under normal use and service for a period of Two years from the date of the final proof of performance. The obligation under all warranties shall be limited to the replacement of defective components and to the shipment of replaced parts to the purchaser FOB WUFT-TV.	Comply with Clarification	WUFT has requested IOTs from E2V Technologies. E2V offers a two year, prorated warranty on their tubes. Product from an alternate vendor is available with a two year, full replacement warranty. Please contact Harris for more information, if a full replacement warranty is desired on tubes.
1.09	The transmitter shall be supplied with two sets of technical manuals. These manuals shall include operating instructions, tuning instructions, maintenance instructions and trouble-shooting procedures. The manuals shall also include a parts list that includes the part number, circuit designator, description and generic number wherever possible. The manuals shall include wiring diagrams and circuit schematics with component designators and values.	Comply	
1.10	The selected manufacturer shall supply a complete set of site-specific drawings showing exact placement and location of all transmitter equipment including the RF system, HV supplies and cooling system.	Comply	
1.11	The selected manufacturer shall supply a proof of performance for FCC Documentation. Also, they will supply their own test equipment during all phases of construction. The manufacturer will commence power into the antenna once the antenna installation is complete "This may require a return trip to WUFT".	Comply	
1.12	As a demonstration of the manufacturer's commitment to quality, the manufacturer shall have ISO-9001 registration and that registration shall be in good standing.	Comply	
2.0	Transmitter General Description		



2.01	The transmitter shall be configured as a two (2) IOT system combined by a switch-less combiner. Two identical 8-VSB exciters shall be supplied operating in a main/standby configuration with automatic switchover. The transmitter shall be supplied as a complete system with appropriate RF system, IOT sets, HV power supplies and cooling system.	Comply	
2.02	The transmitter shall generate a high quality signal for the transmission of ATSC 8-VSB television in accordance with all applicable FCC regulations standards on any specified UHF TV channel 14 through 69.	Comply	
2.03	The transmitter shall be capable of providing an output power of approximately 60kW average power at the output of the RF system. Power is measured at the output of all filters required to meet FCC performance specifications.	Comply	
2.04	The transmitter shall be of modular construction consisting of discrete functional cabinets. The cabinets shall be assembled, wired and tested in the manufacturer's plant to minimize assembly required during installation. For easy identification during maintenance, all transmitter wiring shall have appropriate identification. Interconnection of transmitter cabinets shall be via factory-fabricated cables and cable harnesses with factory-installed plugs, connectors and terminations.	Comply	
2.05	The transmitter shall comply with IEC-215 safety standards, in particular a keyed, mechanically and electrically interlocked HV grounding and access switch shall be provided.	Comply with Clarification	Harris provides a system that meets IEC-215 standards. A keyed lockout of the AC voltage is provided and a mechanical and electrical interlock is provided for the high voltage grounding.
2.05a	The basic transmitter shall consist of the following cabinets: 1 System Control Cabinet and 2 HPA Cabinets. The High Voltage power supplies shall be unitized and located outside the transmitter building along with the liquid cooling system (including pump(s), sump tank and 2 liquid to air heat exchangers).	Comply	
2.06	Typical transmitter installation drawings showing equipment locations, dimensions, water-cooling system plumbing, inside transmission line, AC line requirements etc. shall be supplied with the proposal.	Comply	
2.07	Sufficient wiring and plumbing material for interconnecting transmitter modules per the specific site installation drawings must be provided with the transmitter.	Comply	



2.08	The transmitter shall be designed to use the Inductive Output Tube(s) (IOT) manufactured by E2V. Full protection of the IOT(s), in accordance with the IOT manufacturer's protection requirements, shall be accomplished without the use of a crowbar system.	Comply with Clarification	See response to item 1.08.
2.09	The transmitter shall use single circuit direct liquid cooling of the IOT with a suitable mix of water and an anti-freeze agent approved by the tube manufacturer. The system shall consist of a pump stand and a liquid-to-air heat exchanger installed outdoors.	Comply	
2.10	All pre-correctors required for meeting published specifications shall be included in the transmitter. No additional external correctors shall be required.	Comply	
2.11	The selected Manufacturer will hold a reserved SPARE IOT in its inventory for WUFT. Once a new IOT is needed at WUFT, the selected Manufacturer will install and test it.	Comply	
2.12	The selected Manufacturer is to supply the most Extensive Spare Parts Kit available to date.	Comply	
3.0	Exciter		
3.01	The transmitter shall be equipped with two (2) identical 8-VSB exciters in a main/standby configuration. The system shall automatically switch to the standby exciter in the event of a failure of the main exciter.	Comply	Harris is pleased to offer the Apex™ exciter. This exciter offers the customer the industry's highest level of adaptive correction performance from a small, user friendly and versatile package. The Apex exciter offers such features as adaptive linear and non-linear correction, a 320 by 240 pixel color touch screen interface, channel reconfiguration solely through touch screen inputs, calculated group delay precorrection for waveguide transmission line runs and on-board 8VSB RF parameter measurements including SNR, EVM, FCC mask compliance, eye diagrams, spectral plots, constellation plots and adaptive correction metrics.
3.02	Each exciter shall generate a high-quality signal for the transmission of ATSC 8-VSB television in accordance with all applicable FCC Regulations.	Comply	
3.03	The exciters shall be fully compliant with the ATSC A/53 Standard.	Comply	



3.04	The exciter input shall be compatible with the SMPTE 310M and AS I standards.	Comply	
3.05	The exciters shall be fully capable of operation across the entire UHF TV band with no parts replacements.	Comply	
3.06	The exciters offered shall be 100% solid state and of the latest design and shall use the most modern state-of-the art techniques to assure the highest possible performance and reliability.	Comply	
3.07	The exciters shall be capable of being locked to an external GPS reference for precise frequency control.	Comply	
3.08	The exciter synthesizer shall allow the frequency to be set in 1 Hz increments.	Comply	The Harris Apex exciter is capable of setting the frequency in 0.01 Hz increments.
3.09	The exciters shall use a direct up conversion from baseband I and Q to the final on channel RF. No intermediate frequency shall be used. The reference Local Oscillator (LO) shall be set at the Pilot frequency.	Exception	<p>For optimum LO suppression from mixing stages and to avoid an LO component in-band, Harris uses a classic double up-conversion technique. Solutions that utilize a single-stage upconversion may require periodic adjustment of the LO phasing to ensure suppression from the in-band signal. This solution offers a superior operational and maintenance solution to WUFT's request.</p> <p>Harris does not recommend the installation of exciters utilizing single-stage upconversion. If a single-stage upconversion scheme is to be used, it is recommended that WUFT inquire as to the ongoing maintenance requirements for LO suppression.</p>
3.10	The exciters shall have user-friendly graphical interfaces for routine setup and operation in addition to a serial port to allow more advanced monitoring and adjustment using a PC. The required software for the PC shall be provided with the exciters. A laptop PC loaded with all software is to be supplied to the customer prior to the final proof of performance.	Comply with Clarification	The user interface on the front panel of the Apex exciter offers complete monitoring and adjustment. Harris also offers remote information and troubleshooting through an Ethernet connection. This may be utilized through the "eCDi" network interface platform that Harris is including in this submission.



3.11	The exciter shall include linear and non-linear adaptive (wrap-around) pre-correction circuits with two RF input samples.	Comply with Clarification	For optimum correction, the Harris Apex exciter utilizes <u>three</u> RF input samples. This corrects independently for any driver stage, IOT and RF system distortions and ensures the best transmitter performance available.
3.12	AGC circuitry shall be provided to maintain constant exciter output power.	Comply	
3.13	The exciter shall contain zero physical user adjustments (potentiometers, variable capacitors, etc.)	Comply	
4.0	IOT Power Amplifier		
4.01	The IOT High Power Amplifier (HPA) cabinet shall contain the solid state driver amplifiers, the IOT and associated hardware, the solid-state step-start system and all associated low voltage power supplies and control circuitry.	Exception	While part of the high power amplifier circuit, Harris' solid-state step-start system is located in an independent line control cabinet. This allows for custom placement of the AC control components closer to the AC service and minimizes electrical wiring requirements and valuable transmitter cabinet space. This does not effect the functional operation of the transmitter from WUFT's request.
4.02	The transmitter shall be designed to use the Inductive Output Tube(s) (IOT) manufactured by E2V.	Comply	Please see the response to item 1.08 regarding the warranty on the IOT.
4.03	The IOT shall be removable from the front of the transmitter with a minimum of disconnects. The cooling system shall be designed such that the tube can be isolated, drained and removed with the minimum of wasted coolant.	Comply	
4.04	The HPA shall include a simple hoist, mounted inside the cabinet, that allows safe, controlled lowering and raising of the IOT into and from its cavities without disconnection of associated support circuitry and RF input and output connections.	Comply	To meet this requirement, Harris will supply E2V IOTD3130 tubes and circuit assemblies.
4.05	For maximum redundancy and ease of maintenance, each IOT power amplifier shall have its own separate and independent:		
1.	Control circuits	Comply	
2.	Overload protection circuits	Comply	
3.	Interlocks	Comply	
4.	Front panel metering	Comply	
5.	Status, overload, and interlock indicators	Comply	
6.	Regulated heater/bias power supply	Comply	
7.	Vacion power supply	Comply	
8.	Focus power supply	Comply	



9.	HV Power supply	Comply	
4.06	The IOT cabinet shall include a solid-state step-start system for the high voltage power supply to reduce unnecessary stresses at application of HV and to provide a rapid turn-off of mains power to the HV power supply in the event of a fault condition. Manufacturers shall state the maximum time taken to remove AC. Motorized re-settable circuit breakers will not be acceptable as the means of mains power disconnect under any fault conditions.	Comply	Harris utilizes a vacuum contactor to remove AC under HV fault conditions. This contactor removes the AC supply in under 12 milliseconds. A motorized circuit breaker is included in the step-start system, however it is not used as the means of mains power disconnect.
4.07	The amplifier shall be provided with overload circuitry to protect against the following parameters:		
1.	High coolant temperature	Comply	
2.	High reflected power	Comply	
3.	High bias current	Comply	
4.	High beam current	Comply	
5.	HV Fault current	Comply	
6.	Cavity arc	Comply	
7.	High ion current	Comply	
8.	Out of limit heater current	Comply	
9.	Out of limit focus current	Comply	
10.	Insufficient air flow	Comply	
11.	Insufficient liquid coolant flow rate	Comply	
	Any overload condition shall cause the control circuits to remove and automatically re-apply operating voltages to the amplifier. Multiple overloads shall shut down the amplifier and illuminate the appropriate overload fault indicators. The number of overloads prior to shut-down shall be settable from the front panel.	Exception	Harris utilizes a standard "three strikes" solution to multiple fault lockout conditions. This is not adjustable from the front panel.
4.08	The amplifier shall be provided with the following interlocks:	Comply with Clarification	While not classified as "interlocks" in the transmitter control architecture, all the following items are monitored and will remove the HPA from service if not in an operating state.
1.	Loss of AC line phase or voltage	Comply	
2.	IOT Cart lockdown interlock	Comply	
3.	IOT Cart air flow	Comply	
4.	Cabinet air flow	Comply	
5.	Liquid Coolant flow and temperature	Comply	
6.	IOT Grid bias voltage	Comply	
8.	High voltage grounding access switch	Comply	
9.	Driver status	Comply	
10.	DC presence	Comply	
11.	RF system interlocks	Comply	



4.09	All overloads and interlock indications shall be displayed on the front of the HPA. Logging of recent fault events shall be provided in the HPA controller.	Exception	Logging is provided through the control interface, not in the HPA controller. This does not effect the functional operation of the transmitter from WUFT's request.
4.10	All IOT operating parameters shall be adjustable from the HPA front panel via a simple menu-driven user interface.	Exception	All routing operating parameters are accessible from the front of the HPA. A menu-driven architecture is not provided. This does not effect the functional operation of the transmitter from WUFT's request.
4.11	Each IOT amplifier shall include a keyed, mechanically and electrically interlocked HV grounding system to restrict casual access to HV areas and to ensure that all HV components are grounded before access is allowed. This system shall be accessible from the front of the cabinet. A grounding stick shall also be provided,	Exception	For better space considerations, and to save front cabinet access for more routine functions, access to the high voltage compartment is through the rear of the cabinet. This does not effect the functional operation of the transmitter from WUFT's request.  Keyed, mechanical and electrical interlocks are as described in the response to section 2.05. Multiple grounding sticks are provided.

4.12	Each IOT amplifier shall fully satisfy the IOT manufacturer's protection requirements. The method of satisfying the IOT manufacturer's requirements shall be detailed in the bid response.	Comply	<p>Harris utilizes a Thyatron crowbar system supplied by E2V Technologies for meeting the IOT manufacturer's requirements. Solutions that utilize a reduction in beam supply filtering induce unnecessary noise onto the beam voltage of the IOT and may adversely affect the IOT performance. For maximum power and signal quality, a classic crowbar design is recommended.</p> <p>The IOT crowbar is a high voltage shunt switch. Its purpose is to protect the IOT from damage in fault conditions, i.e. internal tube arcs. Under such conditions, an unprotected tube will draw excessive current from the HV power supply. This excessive current, aided by the energy stored in the decoupling capacitors, causes damage to the tube. During a tube arc or HV cable fault, the crowbar detects the sudden rise in beam supply current. This causes the crowbar circuit to trigger, which places a short circuit across the beam supply. The main component of the crowbar is a deuterium thyatron. It is connected across the beam supply output, anode to the positive terminal and cathode to the negative terminal. When triggered, the thyatron conducts heavily, shunting beam supply energy away from the IOT to minimize damage. When triggered, the crowbar informs the amplifier controller that a fault has occurred. The amplifier control logic immediately removes the high voltage 1st and 2nd step commands and the ready signal, which causes the high voltage contactors (K3 and K2) in the line control cabinet to de-energize. This action removes the AC input power from the beam supply. It also lights the fault status indicator. After a short delay, the amplifier control logic generates a breaker-reset command to turn on the motorized breaker (Q3) in the line control cabinet. If the crowbar fired is set to 3 (or 4) shot trip, and this is not the 3rd (or 4th) crowbar, the logic will re-enable the ready signal which initiates the beam supply turn on procedure. This crowbar operation complies with all qualified IOT manufacturers' warranty requirements.</p>
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4.13	Each amplifier shall have sufficient telemetry to permit proper operation, maintenance and troubleshooting. All telemetry and metering displays shall be front panel accessible and referenced to ground, not floating at HV. Each 1OT amplifier shall have telemetry of the following parameters:	Exception	Harris' offering uses a rugged high voltage metering assembly that is referenced directly to the metering potential for some readings. This assembly is enclosed in the high voltage compartment and is easily viewed from the front of the transmitter. This does not effect the functional operation of the transmitter from WUFT's request.
1.	HV Beam current	Comply	
2.	HV Beam voltage	Comply	
3.	HPA output power	Comply	
4.	IOT Driver power	Comply	
5.	HPA Reflected power	Comply	
6.	IOT Heater Voltage and Current	Exception	E2V requires only the monitoring of heater voltage. Heater current is not available. This does not effect the functional operation of the transmitter from WUFT's request.
7.	1OT Grid Voltage and Current	Comply	
8.	Focus current	Comply	
9.	Ion pump Voltage and Current	Comply	
10.	IOT Serial number and operating hours	Exception	IOT serial number is not available on HPA telemetry.
4.14	The HPA shall default to a background heat condition if HV is removed and not re-applied within 30 minutes.	Comply	
4.15	A minimum number of blowers and fans shall be used within the amplifier cabinet for cooling the IOT cart, IOT power supplies, driver amplifiers and driver amplifier power supplies. Preference will be given to designs which eliminate the need for multiple, distributed blowers or fans.	Comply and Understood	
4.16	The cabinet shall operate at a slight positive pressure to prevent the ingress of dust.	Comply	Harris pioneered the usage of positive pressure cooling to minimize collection of particles inside cabinetry.
4.17	The HPA control system shall include an automatic calibration routine for the arc detectors that is carried out during the turn-on cycle.	Exception	The arc detection circuitry does not require calibration on a routine basis. This does not effect the functional operation of the transmitter from WUFT's request.
4.18	The cabinet design shall allow easy access to all sub-assemblies for troubleshooting or maintenance, without first removing other assemblies.	Comply	



4.19	Each HPA shall have independent output power AGC with level control, settable from the HPA front panel and the Transmitter Controller via local or remote control.	Exception	Each HPA is supplied with AGC. The AGC is set locally and is not adjustable from GUI controls or remotely.
5.0	Solid State IPA/Driver		
5.01	The driver amplifier and power supply shall be integrated into the HPA cabinet, close to the IOT.	Comply	
5.02	For optimum system redundancy and on-air reliability, parallel devices shall be used in the solid state driver amplifier.	Comply	
5.03	A fully redundant driver module, capable of driving the IOT to full power, shall be provided.	Exception	The parallel architecture of the IPA and the high design MTBF of the modules (300,000 hours) negates the need for a redundant module.
5.04	Each solid state driver module shall be comprised of 16 identical final devices operating in parallel.	Exception	The IPA module has been designed with a minimum number of modules to meet the requirements of driving the IOT with sufficient power headroom to continue operation in the event of a device failure. The arbitrary number of 16 devices does not allow for the usage of various amplification devices and architectures. This does not effect the functional operation of the transmitter from WUFT's request.
5.05	Each solid state driver module shall be a broadband (all UHF TV channels with no optimization required) class AB high efficiency design utilizing LDMOS devices. Device replacement shall be accomplished without requiring re-tuning of the amplifier.	Comply	
5.06	Each solid-state driver stage shall include design headroom to ensure sufficient RF drive to the IOT amplifier under normal long-term conditions.	Comply	
5.07	Each solid state driver module shall be powered by its own regulated DC power supply. An identical DC power supply, configured for active reserve with appropriate diode steering, shall be supplied with the order.	Comply	
5.08	The driver amplifier and power supply shall be fully cooled by the cabinet air cooling and not require any additional, separate fans or blowers.	Comply	
5.09	Circulator protection shall be incorporated to isolate the solid state amplifier from VSWR or accidental disconnection from the input of the IOT amplifier.	Comply	



5.10	At switch-on, RF drive ramp-up shall be incorporated to minimize power supply and IOT stress.	Comply	
5.11	Each driver module shall be fully self-protected, including VSWR foldback.	Exception	The driver module will protect itself under fault conditions, that include full disconnect. The inclusion of a circulator negates the need for VSWR foldback, except in the case of a circulator fault, which will create an impact on the drive chain significant enough to warrant the removal of the HPA from service. This does not effect the functional operation of the transmitter from WUFT's request.
5.12	The driver amplifier shall be incorporated in the HPA using a hot-swappable, plug-in design.	Comply	
6.0	Liquid Cooling System		
6.01	A standard single-stage liquid/air heat exchanger system shall be offered. For ease of installation, the heat exchanger's and plumbing materials selected shall be designed for maximum site flexibility.	Comply	
The cooling system will have:			
*	Dual pumps with automatic/remote changeover	Comply	
*	Particle filters	Comply	
*	Isolation valves for each pump and amplifier cabinet inlet/outlet	Comply	
*	Temperature, pressure and flow sensors	Comply	
6.02	The Two (2) heat exchangers shall be standard industrial units using multiple direct-drive fans, individually controlled by thermostats.	Comply	
6.03	The heat exchanger system shall have the capacity and necessary hardware required to cool the transmitter, magic tee reject load and station load under full rated conditions.	Comply	
6.04	All plumbing materials for site installation will be provided with the transmitter system.	Comply	
7.0	RF System "Must be supplied by Dielectric to insure WUFT-DT's RF warranty of 5 Years."	Comply	
7.01	For optimum efficiency and reliability, the RF system shall be a magic tee combiner and a constant impedance DTV mask filter of waveguide construction. RF inputs shall be standard EIA coaxial flanges.	Comply	
7.02	The RF system shall incorporate a 4-port motorized waveguide switch, and a water column test load.	Comply	



7.03	The RF system shall be capable of meeting all ATSC performance recommendations and FCC specifications.	Comply	
7.04	The RF system shall be rated for 60 kW average power output.	Comply	
7.05	The RF system input impedance shall be 50 ohms nominally and provide a worst case return loss of -26 dB across the channel as measured at its input.	Comply	
7.06	Transmission line to interconnect the transmitter and the RF system shall be included.	Comply	
7.07	To allow accurate power calibration, the transmitter shall be supplied with at least two calibrated precision directional coupler probes. A calibrated, thermoelectric power meter and probe will be supplied and installed.	Comply	
7.08	The RF System must be optimized by A Dielectric Representative. This is to include all RF from the Transmitter to the Antenna line input.	Comply	
7.09	Installation is to include all RF up to the 7" Line from the Dielectric Antenna.	Comply	
7.10	Prior to bidding, WUFT mandates Bidder to Conference with Dielectric on RF and Installation. Again, this is a turnkey project.	Comply	
8.0	High Voltage Power Supply		
8.01	For maximum long-term reliability and to minimize maintenance requirements, the high voltage power supply shall be an oil-filled, unitized design. The transformer, rectifiers and filter choke shall be enclosed within the oil-filled compartment. The rectifiers shall be constructed in an assembly, or stacks, and shall be easily removable.	Comply	
8.02	The kVA rating of the high voltage power supply shall be sized for continuous on-air operation at full rated transmitter power.	Comply	
8.03	The HV power supply shall be capable of providing a DC voltage output between 28kV and 36kV, with spaced secondary taps.	Comply	
8.04	The power supply shall be designed to operate outdoors within an ambient temperature range of -30 degrees Celsius to +60 degrees Celsius.	Exception	The high voltage beam supply is rated from -30 to +50 degrees Celsius and an average 24 hour temperature of +40 degrees.
8.05	For maximum corrosion resistance, all AC and DC connections to the HV power supply shall be covered by weather resistant panels.	Comply	



8.06	The connection terminals, filter capacitors and transient reduction components shall be mounted in a separate non-oil filled compartment in each supply unit. This compartment shall have its own access panel. Access to this compartment must be restricted as part of the keyed, mechanically and electrically interlocked HV grounding switch located in the HPA cabinet (see item # 4.11). In addition a grounding stick shall be provided.	Comply	
8.07	AC power to the supply shall be controlled by a step-start system, contained within the HPA Cabinet.	Exception	The step-start system in contained in the separate line control cabinet. This does not effect the functional operation of the transmitter from WUFT's request.
9.0	Transmitter Control		
9.01	The transmitter system controller shall utilize a LINUX operating platform operating on an industrial PC. Please specify what system your Transmitter utilizes.	Exception	The Harris system utilizes a more widely used WindowsNT operating system on an industrial PC.
9.02	A color touch-screen user interface for local system control and monitoring shall be provided. UPS backup, with safe shut-down software integrated into the transmitter control, shall be provided to ensure the integrity of the monitoring system in the event of a loss of main AC power to transmitter.	Comply	
9.03	In addition to system control and monitoring, the transmitter controller shall allow the user to access detail information from each HPA controller.	Comply	
9.04	The transmitter shall be designed for enhanced remote control with a PC, via a serial interface to the transmitter controller, without the use of any third-party remote control system. The software required for the remote PC shall be provided with the transmitter system. In addition, a Laptop loaded with the software is to be supplied.	Comply with Clarification	Harris is offering an "eCDi" interface for the solution proposed. The eCDi network interface offers the industry's most advanced remote transmitter and exciter monitoring via a standard web browser or via a network manager using the built-in SNMP agent. No special laptop or software is required.
9.05	The display at the remote terminal or PC shall be identical to that at the transmitter controller.	Exception	The eCDi solution offers an interface that is similar to that of the local controller, however it has been optimized for usage in a browser environment.
9.06	The transmitter shall be compatible with typically available third-party remote control systems	Comply	
10.0	Specifications		



	All signal specifications measured at RF system output	Understood	
RF Power Output	60 kW average	Comply	
Operating Channel	FCC Channels 14-69	Comply	
System	Standard ATSC 8-VSB A/64 Rev A	Comply	
RF Output:			
VSWR	1.08:1 maximum	Comply	The Harris solution will meet specifications into a load with 1.1:1 VSWR.
Impedance	50 Ohms	Comply	
Data Input:			
Data	19.39 Mb/s	Comply	
Standard	SMPTE 310M or ASI	Comply	
Impedance	75 Ohm, unbalanced	Comply	
Connector	BNC Female	Comply	
Precise Frequency External input:			
Frequency	10MHz	Comply	
Impedance	50 Ohms, unbalanced	Comply	
Level	0 to +1 OdBm	Comply	
Connector	BNC Female	Comply	
Output Power Stability	+ 2%	Comply	
Pilot Frequency Stability	+/- 100 Hz per month with internal reference.	Exception	Harris specification is $\pm 200$ Hz per month, though typical frequency stability is considerably under the WUFT's requested level.
Phase Noise	-104dBc @ 20kHz offset	Comply	
Signal to Noise Ratio (SNR)	27 dB	Comply	
Harmonic Radiation & Spurious Emissions	Complies with FCC Mask requirements.	Comply	
Environmental			
Ambient Temperature Range	0° to +45°C (+32° to +113°F), operational	Comply	
Humidity Range	0 to 95% Relative Humidity, non condensing	Comply	
Altitude	customer specified	Comply with Clarification	If altitude is over 7500 ft, the transmitter power output will be derated.





## (Tab 5) Customer Service

### Sustaining Support:

#### Our Philosophy

One of the most compelling reasons for selecting broadcast equipment from Harris is the level of support that you will receive. We call it sustaining support, because its purpose is to sustain your equipment to a level that provides the highest return on your investment. We also want to sustain your confidence in Harris as your preferred supplier.

### On Call, All the Time:

#### By Phone, Fax or Electronic Mail.

No one can predict when an emergency will occur. That's why we support our transmission equipment and systems with 24 hour-a-day telephone service, 365 days a year. Our telephone service line is staffed by an on-site technical staff member 100% of the time; Harris is the only transmission equipment manufacturer to provide this service to its customers. We also provide extensive telephone support for radio studio products we distribute. Our service staff can work with your engineers to solve many equipment problems over the telephone.

Every call for technical assistance is entered in our computer database to ensure proper tracking and complete follow-up. Emergency off-air and under-power situations are given the highest priority.

When necessary, our field engineers will be dispatched to help you resume normal operation as quickly as possible. Our field service personnel are also available to visit your site to provide scheduled maintenance and service including installations, new equipment checkout, proof of performance testing, and training.

Our large staff of field engineers is prepared to travel the world to help you meet your maintenance / repair needs.



### Parts:

#### On Hand for Timely Delivery

Harris' multi-million dollar inventory of spare parts enables us to respond quickly to the large installed base of Harris-supplied equipment around the world. Our parts department is staffed around the clock, every day of the year, to ensure that your emergency or general maintenance parts order is handled on a timely basis.

### In House Repairs:

#### As Good as New

Harris-manufactured items small enough to ship can be repaired quickly and economically at our factory repair center. In addition, we offer over 60 different modules used in Harris transmitters through our module exchange program. Refurbished modules, which carry the same warranty as new modules, are available at lower cost. Harris also repairs radio studio equipment from most of the product lines that we distribute and serves as a factory warranty repair center for many of these product lines.



### Sustaining Support:

#### Our Commitment

Beyond quality products designed to deliver years of value, Harris is committed to providing unparalleled sustaining support to protect your investment in the long term. Harris manufactured product is supported for at least 10 years beyond the last date of production.



## (Tab 6) Training

### The Harris Broadcast Technology Training Center



Harris sponsors the world's only Broadcast Technology Training Center. Since its inception in 1975, more than 2500 broadcasters from around the world have participated in our RF training programs. Each year we offer over 30 regularly scheduled programs for engineers at all levels of experience. To meet special needs, we also design customized training programs for broadcasters, which can be taught at Harris or at any customer site.

### Education and Training: Our Philosophy

Proper operation and maintenance of broadcast equipment impacts its long-term reliability. Our philosophy is to provide engineers with the skills and knowledge required ensuring maximum equipment longevity and performance.

### Our Commitment

In addition to offering quality products designed to deliver years of value, Harris is committed to providing unparalleled training for operating and maintenance personnel today and supporting broadcast technology education for tomorrow.

### Beyond Training: An Education

More than a decade ago, Harris joined forces with John Wood Community College in Quincy, Illinois, to offer a fully accredited two-year program in Broadcast Technology, leading to an Associate's degree and SBE

certification. Since 1979, more than 250 students have graduated from this program, and over 90 percent of them have been employed in the electronics industry within 90 days of graduation. Others have transferred to four-year colleges and universities to complete Bachelor of Science requirements.

In addition, Harris offers an annual two-week training program for broadcast engineers from developing nations under the auspices of the United States Telecommunications Training Institute. Since 1983, over 200 engineers from 60 countries have participated in this joint Harris/USTTI program.

### 10 Reasons to Visit Our Training Facilities

- Dedicated training center
- Professional full time training staff
- Instructors are field experienced
- HDTV classes
- SMART PAK
- Fully operational transmitters for hands-on experience
- RF courses designed to expand capabilities/responsibilities of studio engineers/technicians
- Functional RF lab for hands-on activities
- On-site training available upon request
- Class Guarantee



(Tab 7) ISO 9001 Certification

# nsai

## Certificate of Registration of Quality System to I.S. EN ISO 9001:1994

The National Standards Authority of Ireland certifies that

### Harris Broadcast Communications Division

3200 Wismann Lane Quincy, IL 62305      4393 Digital Way Cincinnati, OH 45040

has been assessed and deemed to comply with the requirements of the above standard in respect of the scope of operations given below.

#### Scope of Registration

The sale, design, manufacture and installation of broadcast transmission products for radio and television stations; and the systems development, sale, and installation of studio products, systems and mobile facilities for use in the broadcast and related media industries.

	Certificate number: 19.1841	
	Registration date: Dec 22, 1994	
	Last amended on: Aug 27, 2001	
	Certificate valid to: Dec 31, 2003	

Signed: *Simon Kelly* Chief Executive Officer      Signed: *Dáire Woods* Chairperson of the Board

December 19, 2001

The validity of this certificate is maintained through continuing re-assessment at surveillance inspections

CT-02-01 rev. 1 (US)

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Nashua, NH 03063  
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Dublin 9, Ireland  
Tel: +353 1 807 3800  
Fax: +353 1 807 3844

**NSAI**  
National Standards Authority  
of Ireland



**(Tab 8) Equipment Brochures**



*Television Systems Products*

***Sigma<sup>®</sup> CD  
Series***

*High Power UHF  
DTV Transmitters*

***next level solutions***





## Harris SigmaCD UHF DTV Transmitter

Sigma<sup>®</sup>CD Diamond Drive is Harris' third-generation UHF IOT transmitter for DTV. First demonstrated in 1995 - before any other complete UHF DTV transmitter - SigmaCD has unrivaled field experience. SigmaCD has been on the air since the first DTV station began broadcasting in 1996 and is the choice of more high-power UHF DTV broadcasters than any other IOT transmitter.

From the beginning, SigmaCD transmitters have offered significant improvements over the best analog transmitters, enabling you to fully exploit the potential of digital television. Now in their third-generation, SigmaCD transmitters offer even more! New to the SigmaCD is a "Diamond Drive" LDMOS intermediate power amplifier (IPA) and SD-1 linearizer that eliminate the need for any feed forward circuitry. Other features that customers have grown to rely on remain. These include Real-Time Adaptive Correction (RTAC™) for optimal signal-to-noise performance, output that fully complies with the FCC's exacting spectral mask requirements, an intuitive Graphical User Interface (GUI) for simple local or remote control and monitoring, and a highly-redundant architecture that even extends to the transmitter's fail-safe control system.

### ***Diamond Drive LDMOS IPA Module Provides Linearity Never Before Seen In An IOT Transmitter***

Building on decades of solid state experience and combined with the most digital IOT experience in the industry, the SigmaCD expands the envelope of high power digital broadcast. LDMOS FET technology in the IPA drives the SigmaCD to the forefront of IOT linearity and efficiency. The IPA module is the same module that is used in Harris' DiamondCD™, the premiere UHF DTV solid state transmitter. The module's ultra-linear characteristic, in conjunction with the SD-1 linearizer, prevents the need for any feed forward circuitry. This simple and elegant architecture helps increase the already outstanding efficiency and reliability of the SigmaCD.

### ***Second-Generation Exciter Provides Real-Time Adaptive Correction (RTAC™)***

Also responsible for SigmaCD's revolutionary performance and capability is Harris' CD 1A, a second-generation digital 8-VSB DTV exciter. The CD 1A employs an all-digital modulator and state-of-the-art digital signal processing for precise filtering and maintaining exact pilot carrier frequency. The CD 1A accepts the industry-standard SMPTE 310M signal and performs all ATSC-specified transmission layer encoding functions, providing frame synchronization, data randomization, Reed-Solomon encoding, data interleaving, Trellis coding, and field and frame sync insertion.

The CD 1A is the heart of SigmaCD's Real-Time Adaptive Correction (RTAC) system. Working around the entire transmitter (IPA, PA and bandpass filter), RTAC provides correction for frequency response distortions in the power amplifier and the high-power bandpass filter that directly affect coverage area, error vector magnitude (EVM), and signal-to-noise ratio (SNR). RTAC keeps the EVM low and the SNR high, which translates to a consistent coverage area. Because RTAC works adaptively without the use of training signals, it continually optimizes performance over time and varying temperature, without taking the transmitter out of service.

Harris' optional CD Eye™ 8-VSB embedded monitoring software provides a new and unique measurement solution. Designed to connect to the CD 1A exciter and work in conjunction with RTAC, CD Eye accesses information, performs signal analysis and displays it on a PC screen from any remote location. CD Eye provides measurements for spectrum, out of channel mask, eye diagram, constellation, signal-to-noise ratio (SNR) and error vector magnitude (EVM), pilot level, non-linear analysis, and RTAC metrics. Also, for monitoring system performance, CD Eye provides user defined event alarms, and an automated data capture capability. The system also provides control and status monitoring of RTAC and the CD 1A exciter.

The CD 1A is designed for minimal maintenance and simple operation. The exciter uses VSLI technology to achieve unsurpassed reliability and performance stability. Long-term maintenance is virtually eliminated, and the digital modulation scheme eliminates adjustments and alignment. Status information is available on the front of the exciter and RS-232 ports are located on the front and rear of the exciter. Optional Harris software provides system-level diagnostics and permits set-up, monitoring and troubleshooting via a PC without costly test equipment.

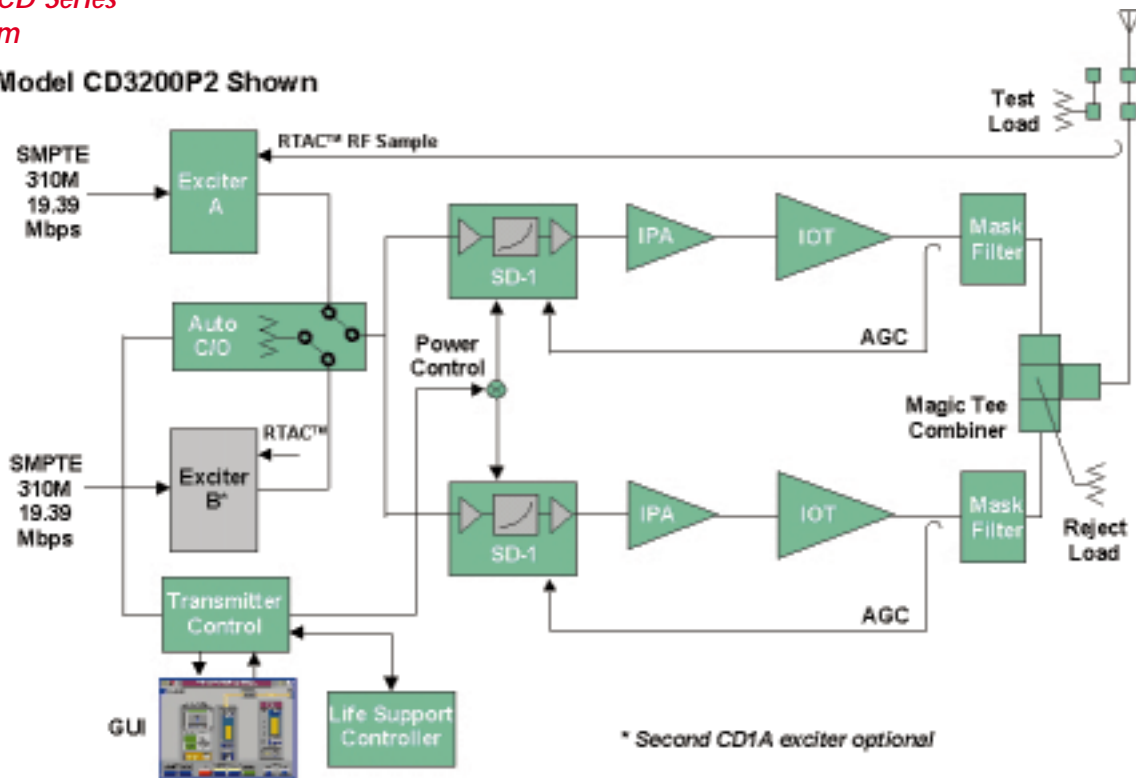
### ***SigmaCD System Built For Top Performance And Reliability***

SigmaCD transmitters are highly reliable. Each power amplifier has its own LDMOS IPA driver stage, SD-1 linearizer and high-voltage power supply. The cooling system uses dual pumps and redundant fans. Separate cooling systems for each power amplifier are optionally available.

Quite simply, SigmaCD transmitters are built to adapt to conditions that compromise reliability. Each power amplifier has dedicated Automatic Gain Control (AGC) circuitry for protection from overdrive when the transmitter is turned on. A quick and reliable thyatron protects each power amplifier from fault conditions. An automatic VSWR foldback ensures SigmaCD transmitters will continue to operate at the maximum safe power level under abnormal operating conditions such as antenna icing.

## Harris SigmaCD Series Block Diagram

Model CD3200P2 Shown



### Designed For Easy Operation, Control And Monitoring

SigmaCD transmitters feature a touch screen Graphical User Interface (GUI) control system that shows all monitoring, metering, diagnostics, block diagrams, and fault logging on a large, easy-to-understand display. The SigmaCD's GUI can be accessed locally or on a remote PC with the addition of modem or network communications. Pushbutton control is provided on an eye-level front panel, and interfaces for remote control and monitoring are conveniently located. Individual PA cabinet front-panel LEDs visually indicate operating status of the overall system as well as individual subassemblies, and most components are readily accessible when service is required. SigmaCD transmitters are designed so that Mean Time To Repair for any subassembly is typically 30 minutes or less.

From the beginning, Harris has been at the forefront of the transition to digital broadcasting. Today there are more SigmaCDs in operation than any other DTV IOT transmitter. Make SigmaCD your no-compromise choice for the future.

### Graphical User Interface

The eye-level Graphical User Interface provides easy-to-understand transmitter status information complete with user-friendly system control and monitoring,

signal flow diagrams, component level diagnostics and analog bar-graph metering.

### Amplifier Control Panel

An eye-level panel provides straightforward pushbutton control for the entire transmitter. LEDs associated with each control and monitoring function provide at-a-glance status information. Power meters are also provided.

### CD 1A Exciter

The CD 1A uses advanced digital techniques and proprietary filtering to ensure maximum performance and stability. An RS-232 port and optional Harris software allow a PC to be used for set-up, monitoring and troubleshooting without costly test equipment.

### Power Amplifier (PA) Cabinet

Each PA cabinet contains one IOT power amplifier assembly, an LDMOS "Diamond Drive" IPA, power supply, cooling fans and amplifier control logic. For high reliability, each PA cabinet operates independently.

### Diamond Drive IPA

The SigmaCD IPA is an LDMOS solid state linear amplifier. The module, a hot-pluggable unit identical to a DiamondCD module, is rated for 2400 watts peak power. Parallel architecture and redundant power supplies help maintain high reliability.

### Power Amplifier

SigmaCD transmitters feature high-power, high-efficiency IOTs in several power levels.

### Thyratron Protection

Thyratron circuitry for each power amplifier ensures timely and reliable protection for each IOT. For peace of mind, SigmaCD transmitters include a test circuit to verify the thyratron is functional.

### Beam Power Supply

Each power amplifier has its own power beam power supply that is designed for continuous operation for a long life. Oil-filled weather-proof outdoor beam supplies provide long-term reliability and minimal maintenance.

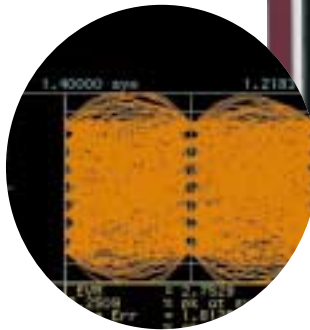
### Cooling/Heat Exchanger

IOTs are cooled by a water/glycol single-stage closed loop heat exchanger, which transfers heat from the transmitter to the outside environment. The exchanger uses redundant main/alternate pumps that can be remotely switched, as well as serviced, during transmitter operation. The remainder of the transmitter is air-cooled with internal blowers and fans. Independent cooling/heat exchange systems for each power amplifier are available as an option.

***Straightforward Design;  
Revolutionary Performance***



***Fully Mask Compliant***



***Graphical User Interface (GUI)***



***RF Combining Systems***

The RF system combines the output of multiple power amplifiers and is available in multiple configurations. In the unlikely event of a fault in a power amplifier, the system transfers the affected amplifier to a test load for service while the rest of the transmitter continues to operate at maximum power. Magic Tee combiners are used on two, three and four cabinet systems.

***Mask Compliant Filtering***

As part of the RF system, filtering is included to assure SigmaCD transmitters meet the FCC's strict spectral mask. Filtering is available in either a single filter design, or Harris' unique filter-per-cabinet approach.

This flexibility allows for the placement of RF systems and filtering in conditions that will not accommodate traditional configurations.

***Installation And Service After***

Peace of mind is important in choosing a transmitter. That is why Harris focuses so much on service before, during, and after the installation.

As part of the commitment to the customer, Harris offers the industry's most attentive installation service. From simple component installation to complete turnkey projects, more than 78 years of customer-focused service backs every installation.

The same great staff of installation specialists are also available for service after

the sale. In the unlikely event of an emergency, Harris service personnel are on-call to get the station back on the air immediately.

Unlike other manufacturers that simply use answering services, Harris technicians staff the 24-hour service and parts center 365 days a year. Same day delivery is available for most components.

Attention to the customer is the reason Harris has the best service record in the industry.



### ***Make These Sigma®CD Benefits Yours:***

- ▶ Diamond Drive LDMOS IPAs offer the ultimate in intermediate stage efficiency and linearity, ensuring the best SNR and intermodulation distortion (IMD). This amplifier, straight out of the DiamondCD transmitter, is extremely reliable and hot-pluggable.
- ▶ Individual non-linear correction for each power amplifier in the SD-1 provides the best optimization for each IOT and ensures meeting the FCC mask requirement. This feature provides the most power output per tube, the best signal quality (EVM and SNR), and the lowest IMD.
- ▶ Real-Time Adaptive Correction (RTAC™) provides continuous automatic correction of the entire transmitter and RF system, optimizing performance.
- ▶ The all-digital 8-VSB modulator in the CD 1A exciter redefines reliability, stability and linearity.
- ▶ An intuitive Graphical User Interface (GUI) provides simple and easy control of the SigmaCD.
- ▶ VSWR foldback protects each power amplifier, ensuring that minimal damage occurs in the event of abnormal conditions in the RF system, transmission line or antenna. This feature minimizes downtime with associated lost revenue and make-goods.
- ▶ Automatic Gain Control (AGC) maintains stable output power and prevents overdrive conditions during cold start-up of the transmitter, extending the life of the IOT and reducing long-term cost of ownership.
- ▶ Remote monitoring and diagnostics via RS-232 or Ethernet support TCP-IP and SNMP, giving you the flexibility to choose the type of system that best meets your needs.
- ▶ Fail-safe control system features a primary and a back-up controller that are independent of the user interface system, ensuring maximum up-time.
- ▶ Field-proven operation since July 1996! As of January 2000, more SigmaCD transmitters are on the air meeting the FCC's spectral mask at more than 27 dB signal-to-noise ratio than any other manufacturer.
- ▶ Manufactured and serviced under a registered ISO 9001 Quality System. Complies with IEC-215 safety standards and ANSI C62.41 transient protection requirements.

### ***Harris World "Firsts" In Digital Broadcast Transmitters***

#### ***1990***

Harris designs the RF Test Bed used by the Advanced Television Test Center to evaluate all DTV systems proposed for the United States.

#### ***1993***

Harris installs first antenna intended for NTSC/ATSC broadcasting.

#### ***1995***

Harris demonstrates first commercial digital 8-VSB DTV exciter and DTV transmitter.

#### ***1996***

Harris provides transmitter for world's first commercial DTV station, WRAL in Raleigh, North Carolina.

#### ***1997***

Harris sponsors first live high-definition broadcast of a Major League Baseball game.

#### ***1998***

Harris sponsors first nationwide high-definition broadcast of a live news event, the John Glenn Space Shuttle Launch.



Harris Broadcast Communications Division Headquarters

***Harris Broadcast Communications  
Serving Broadcasters In More Than  
125 Countries With Next Level Solutions***

Since 1922, Harris has set the pace worldwide for the broadcast industry. Our more than 70 major "firsts" in technology have changed the way the world sees and hears itself, and we are leading the way in digital radio and television. Our innovations have extended to support for our customers, as well. We pioneered around-the-clock technical service and parts, and are the only transmitter manufacturer to sponsor a full-time Broadcast Technology Training Center.

Beyond the radio and television transmission products we manufacture, we are the world's leading supplier of studio equipment and are a leader in the design and integration of custom systems as well as facility automation and control.

You can count on Harris for any level of support you desire, from a single piece of equipment to a fully integrated broadcast system. We welcome the opportunity to be of service.

### ***Sigma<sup>®</sup> CD Series***

*High Power UHF  
DTV Transmitters*

SigmaCD Series are high power UHF DTV transmitters that utilize inductive output tube (IOT) technology and provide high efficiency and cost performance. Each SigmaCD system includes a control cabinet and one to four power amplifier cabinets. The control cabinet houses the monitoring and control graphical user interface, system controller, RF system mode controller and exciter, with a second exciter optional.

#### ***Features/Benefits***

- ▶ Ultra-linear and hot-pluggable "Diamond Drive" LDMOS IPA omits the need for inefficient feed-forward circuitry.
- ▶ Real-Time Adaptive Correction (RTAC™) system provides continuous automatic correction of the entire transmitter and RF system, optimizing performance.
- ▶ Intuitive Graphical User Interface (GUI) provides simple and easy control of the SigmaCD both locally and remotely.
- ▶ Modular design for future upgrade and power increase.
- ▶ SD-1 with non-linear correction for each power amplifier provides the best optimization for each IOT and ensures meeting the FCC mask requirement.
- ▶ Fail-safe control system features primary and back-up controllers that are independent of the user interface system, ensuring maximum up-time.
- ▶ Backed by the best service and installation team in the industry.
- ▶ Field-proven operation since July 1996!  
More SigmaCD transmitters are on the air meeting the FCC's spectral mask and 27 dB or better signal-to-noise requirements than any other manufacturer.



## Harris SigmaCD Series Transmitter Specifications

### General

RF Load Impedance: 50 Ohms, 1.1:1 VSWR over specified TV channel  
 RF Output Connector: 4-1/16" Flanged (At PA Cabinet Outputs)  
 Frequency Range: Any specified UHF TV Channel, 470-806 MHz  
 Data Input: SMPTE-310M, 19.39 Mb/s  
 Data Input Connector: BNC, 75 Ohms  
 PFC Input: 10 MHz sinusoid, 0 to +10 dBm, BNC, 50 Ohms

### Performance

DTV Power Output: <sup>1</sup>	Model	Output Power	Model	Output Power
	CD3070P1	70 kW Peak, 15 kW Average	CD3200P2	200 kW Peak, 42 kW Average
	CD3100P1	100 kW Peak, 21 kW Average	CD3300P3	300 kW Peak, 63 kW Average
	CD3140P2	140 kW Peak, 30 kW Average	CD3400P4	400 kW Peak, 84 kW Average

Stability of Output Power:  $\pm 2\%$  or better  
 Frequency Stability (Pilot):<sup>2</sup>  $\pm 200$  Hz/month,  $\pm 3$  Hz or better with external precision frequency control option  
 Frequency Offsets: Per FCC requirements  
 SNR (MER):<sup>3</sup>  $\geq 27$  dB ( $> 30$  dB typical)  
 Harmonic & Spurious Radiation: Compliant with FCC requirements  
 Sideband Performance: Compliant with FCC mask, with optional Harris specified output filter

### Service Conditions

Ambient Temperature Range:<sup>4</sup> 0 to +45 deg C (+32 to +113 deg F)  
 Ambient Humidity Range: 0 to 90% relative humidity, non-condensing  
 Altitude:<sup>5</sup> 0 to 7,500 ft. AMSL  
 Physical Dimensions & Weights:

Model	Transmitter	Beam Power Supply	Fan Unit	Pump Module	AC Line Control
CD3070P1 & CD3100P1	1 unit, each: 82" W x 55" D x 72" H 2,425 lbs	1 unit, each: 46" W x 56" D x 62" H 3,700 lbs	1 unit, each: 44" W x 92" D x 43" H 685 lbs	1 unit, each: 36" W x 62" D x 66" H 800 lbs	1 unit, each: 36" W x 12" D x 60" H 365 lbs
CD3140P2 & CD3200P2	1 unit, each: 141" W x 55" D x 72" H 4,525 lbs	2 units, each: 46" W x 56" D x 62" H 3,700 lbs	1 unit, each: 44" W x 132" D x 43" H 946 lbs	1 unit, each: 36" W x 62" D x 66" H 800 lbs	2 units, each: 36" W x 12" D x 60" H 365 lbs
CD3300P3	1 unit, each: 199" W x 55" D x 72" H 6,625 lbs	3 units, each: 46" W x 56" D x 62" H 3,700 lbs	1 unit, each: 44" W x 172" D x 43" H 1,340 lbs	1 unit, each: 36" W x 62" D x 66" H 800 lbs	3 units, each: 36" W x 12" D x 60" H 365 lbs
CD3400P4	1 unit, each: 258" W x 55" D x 72" H 8,725 lbs	4 units, each: 46" W x 56" D x 62" H 3,700 lbs	2 units, each: 44" W x 132" D x 43" H 946 lbs	2 units, each: 36" W x 62" D x 66" H 800 lbs	4 units, each: 36" W x 12" D x 60" H 365 lbs

Electrical Requirements:<sup>6</sup> 480 volts,  $\pm 2\%$ , 3-Phase, 3 or 4 wire, 60 Hz

Power Factor: 0.9, or better

Power Consumption: (typical, including cooling)	Model	Power Consumption	Model	Power Consumption
	CD3070P1	66 kW	CD3200P2	184 kW
	CD3100P1	93 kW	CD3300P3	275 kW
	CD3140P2	130 kW	CD3400P4	366 kW

#### Notes:

- Average power outputs are after FCC mask filter and typical RF combining systems, if present
- After initial aging of 60 days
- Signal to noise ratio (modulation error ratio) measured with HP89440A/HP89441A Vector Signal Analyzer
- Derate maximum temperature linearly, from +45 deg C at sea level by 2 deg C per 1,000 ft., up to 7,500 ft. For operation outside these limits, consult Harris
- For higher altitude operation, consult Harris
- Other AC voltages available, consult Harris

Specifications subject to change without notification.

**SigmaCD**  
Diamond Drive



ATSC Member

**HARRIS**

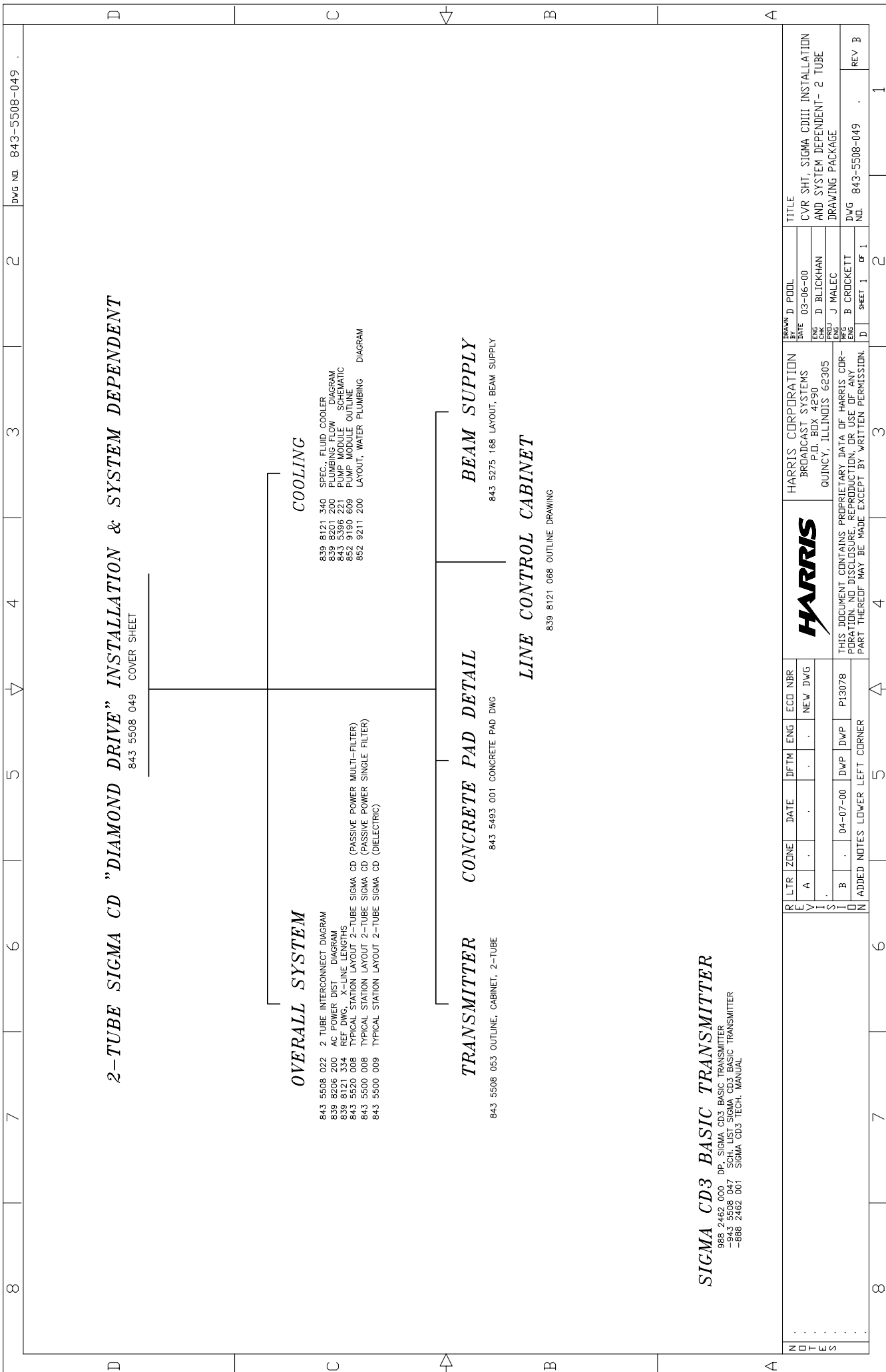
next level solutions

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 phone: 513-459-3400 | email: broadcast@harris.com | www.harris.com

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 ADV. 858C 03/00



**(Tab 9) Typical Installation Drawing**



**2-TUBE SIGMA CD "DIAMOND DRIVE" INSTALLATION & SYSTEM DEPENDENT**

843 5508 049 COVER SHEET

**OVERALL SYSTEM**

- 843 5508 022 2-TUBE INTERCONNECT DIAGRAM
- 839 8206 200 AC POWER DIST. DIAGRAM
- 839 8121 334 REF. DWG. X-LINE LENGTHS
- 843 5520 008 TYPICAL STATION LAYOUT 2-TUBE SIGMA CD (PASSIVE POWER MULTI-FILTER)
- 843 5500 008 TYPICAL STATION LAYOUT 2-TUBE SIGMA CD (PASSIVE POWER SINGLE FILTER)
- 843 5500 009 TYPICAL STATION LAYOUT 2-TUBE SIGMA CD (ELECTRIC)

**COOLING**

- 839 8121 340 SPEC., FLUID COOLER DIAGRAM
- 839 8201 200 PLUMBING FLOW SCHEMATIC
- 839 8121 334 REF. DWG. X-LINE LENGTHS
- 843 5520 008 TYPICAL STATION LAYOUT 2-TUBE SIGMA CD (PASSIVE POWER MULTI-FILTER)
- 843 5500 008 TYPICAL STATION LAYOUT 2-TUBE SIGMA CD (PASSIVE POWER SINGLE FILTER)
- 843 5500 009 TYPICAL STATION LAYOUT 2-TUBE SIGMA CD (ELECTRIC)

**TRANSMITTER**

843 5508 053 OUTLINE, CABINET, 2-TUBE

**CONCRETE PAD DETAIL**

843 5493 001 CONCRETE PAD DWG

**BEAM SUPPLY**

843 5275 168 LAYOUT, BEAM SUPPLY

**LINE CONTROL CABINET**

839 8121 068 OUTLINE DRAWING

**SIGMA CD3 BASIC TRANSMITTER**

988 2462 000 DP, SIGMA CD3 BASIC TRANSMITTER  
 -943 5508 047 SCH. LIST SIGMA CD3 BASIC TRANSMITTER  
 -888 2462 001 SIGMA CD3 TECH. MANUAL

NOTES	R LTR ZONE		DATE	DFTM	ENG	ECD NBR	HARRIS CORPORATION		DRAWN BY D POOL	TITLE CVR SHT, SIGMA CDIII INSTALLATION AND SYSTEM DEPENDENT- 2 TUBE DRAWING PACKAGE	
	A	A	.	.	.	NEW DWG	BROADCAST SYSTEMS P.O. BOX 4290 QUINCY, ILLINOIS 62305	DATE 03-06-00			ENG D. BLICKHAN
	B	B	04-07-00	DWP	DWP	P13078	THIS DOCUMENT CONTAINS PROPRIETARY DATA OF HARRIS CORPORATION. NO REPRODUCTION, REUSE OR PART THEREOF MAY BE MADE EXCEPT BY WRITTEN PERMISSION.		ENG J. MALEC	DWG NO. 843-5508-049	
	ADDED NOTES LOWER LEFT CORNER								REV B	SHEET 1 OF 1	REV B



**(Tab 10) Sigma A&E Data**

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**ARCHITECTS & ENGINEERS  
SPECIFICATIONS**



**SIGMA<sup>®</sup> CD DIAMOND DRIVE SERIES  
UHF IOT DIGITAL TELEVISION  
TRANSMITTERS**

**ATSC 8-VSB DTV SYSTEM**

**Standard Systems and**



**HARRIS CORPORATION  
Broadcast Communications Division  
4393 Digital Way  
Mason, Ohio 45040 USA**

*(SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE)*

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## **1 Manufacturer's Requirements**

- 1.1 The equipment manufacturer shall have been continuously manufacturing high power UHF-TV broadcast equipment for a minimum of 20 years. A complete user's list of high-power ATSC DTV transmitters shall be provided upon request.
- 1.2 The transmitter manufacturer shall have a service department that is manned 24 hours a day, 365 days a year.
- 1.3 The manufacturer shall provide parts and service for a minimum of ten years after the sale of the equipment.
- 1.4 The transmitter manufacturer shall conduct a training seminar for this product at the factory at least twice each year. Customers shall be notified of the dates of these schools.
- 1.5 The transmitter manufacturer shall provide service bulletins to inform customers of modifications and improvements to the equipment. These bulletins shall provide instruction book updates when necessary.
- 1.6 To provide transmitter owners with the latest transmitter improvements, the transmitter manufacturer shall have a demonstrated policy of providing up-date kits whenever possible.
- 1.7 The manufacturer shall warrant the transmitter (excluding all vacuum tubes) to be free from defects in material and workmanship under normal use and service for a period of at least one year from the date of shipment. The obligation under all warranties shall be limited to the replacement of defective components and to the shipment of replaced parts to the purchaser FOB factory. Standard published warranties shall apply to any item not identified with the transmitter manufacturer's trademark or tradename. Inductive output tubes and thyratron tubes will carry the standard warranty provided by the tube manufacturer.
- 1.8 As a demonstration of the manufacturer's commitment to quality, the manufacturer shall have ISO-9001 registration and that registration shall be in good standing.
- 1.9 The transmitter shall be supplied with two sets of technical manuals. These manuals shall include installation instructions, operating instructions, tuning instructions, maintenance instructions and trouble-shooting procedures. The manuals shall also include parts list that includes the part number, circuit designator, description and generic number wherever possible. The manuals shall include wiring diagrams with wire numbers and circuit schematics with component designators and values.



## **(Tab 11) Bidders Qualifications**

Since we began manufacturing our first radio transmitters 60 years ago, we have invested heavily in research and development. Our aim has been to apply the best available technologies to meet broadcasters' requirements. Over the years, our work has led to more than 50 major technical developments, including many world standards. The benefit to you is a range of transmitters that provide unrivaled advantages throughout the broadcast band.

### **Breakthroughs with real-world benefits**

Harris has set the pace for television's transition from analog to digital technology. Indeed, the RF Test Bed that Harris developed for the Advanced Television Test Center in 1990 enable all digital television systems proposed for the United States to be equitably evaluated. Harris is also a leader in technology for the European-standard Digital Video Broadcasting (DVB-T) market.

In VHF, Platinum Series solid state transmitters have established themselves as the VHF reliability leader.

Platinum's FET solid state RF power amplifier modules have achieved a MTBF exceeding 500,000 hours - the highest in the industry. Platinum transmitters are the only VHF transmitters backed by a full 5-year warranty.

In UHF, Harris has developed a complete range of transmitters, including solid state, IOT/klystron IOT, and depressed collector klystron models. Harris UHF transmitters have been proven to be capable of field upgrade for digital transmission.

In Digital Television, Harris developed the world's first commercially-viable 8VSB exciter to meet ATSC requirements for the FCC-adopted DTV transmission standard. Harris also provided equipment for the U.S.' first DTV television station. Harris offers a complete range of solid state digital television transmitters in the VHF and UHF bands, as well as tube transmitters for the UHF band.

### **Quality manufacturing**

Harris has the greatest manufacturing capacity of any broadcast transmitter manufacturer. Its Quincy, Illinois, factory is the largest, with 125,000 square feet, and a second Quincy factory supports high-power AM manufacturing and test. We also operate a large factory in Cambridge, UK. To ensure transmitters are manufactured under the most exacting conditions, Harris has voluntarily sought and achieved ISO 9001 Quality Standard registration for both its U.S. and UK manufacturing operations.

### **Long-term support**

At Harris, we offer more than transmitters that provide significant benefits and are manufactured under the highest quality standards. We also provide unrivaled long-term support. Our broadcast customers can call on us for 24-hour technical service, field service, around-the-clock parts, and repair services. Harris also is the only transmitter manufacturer to sponsor a training center with a complete complement of general training classes as well as Harris product courses. Customized training also is available. Since our founding in 1922, we have worked to offer innovative solutions to broadcasters. If we can be of service, please contact us.



(Tab 12) User List

MODEL	QTY	YEAR OF INSTALL	CALL SIGN / CUSTOMER	CH / FREQ	CITY / SITE	ST	COUNTRY
CD100P1	1	1998	WEWS	15	Cleveland	OH	USA
CD100P1	1	1999	WCNC	22	Charlotte	NC	USA
CD100P1	1	1998	KGO	24	San Francisco	CA	USA
CD100P1	1	1998	WFTS	29	Tampa	FL	USA
CD100P1	1	1999	WSOC	34	Charlotte	NC	USA
CD100P1	1	1999	KCRA	35	Sacramento	CA	USA
CD100P1	1	1998	KCAL	43	Hollywood	CA	USA
CD100P1	1	1999	WPXI	48	Pittsburgh	PA	USA
CD100P1	1	1999	WTAE	51	Pittsburgh	PA	USA
CD100P1	1	2000	KCRG	52	Cedar Rapids	IA	USA
CD100P1	1	1998	KTVU	56	Oakland	CA	USA
CD100P1	1	1999	KNXV	56	Phoenix	AZ	USA
CD100P1	1	1999	WBAL	59	Baltimore	MD	USA
CD100P1UPG	1	1998	WXYZ	41	Southfield	MI	USA
CD140P2	1	1998	KCBS	60	Los Angeles	CA	USA
CD200P1	1	1999	KARE	35	Golden Valley	MN	USA
CD200P2	1	2000	KUSA	16	Denver	CO	USA
CD200P2	1	1998	WUTF	23	Hudson	MA	USA
CD200P2	1	1999	WTSP	24	St Petersburg	FL	USA
CD200P2	1	1998	KYW	26	Philadelphia	PA	USA
CD200P2	1	1998	KPIX	29	San Francisco	CA	USA
CD200P2	1	1999	KTRK	32	Houston	TX	USA
CD200P2	1	1998	WUSA	34	Washington	DC	USA
CD200P2	1	1999	KSDK	35	St Louis	MO	USA
CD200P2	1	1999	KPNX	36	Phoenix	AZ	USA
CD200P2	1	1998	WJLA	39	Washington	DC	USA
CD200P2	1	1999	WWJ	44	Southfield	MI	USA
CD200P2	1	1998	WDIV	45	Detroit	MI	USA
CD200P2	1	1999	WMAR	52	Baltimore	MD	USA
CD200P2	1	1998	WPVI	64	Philadelphia	PA	USA
CD200P3	1	2000	WNCN	55	Raleigh	NC	USA
CD2100P1	1	1999	KFOR	27	Oklahoma City	OK	USA
CD2100P1	1	1998	KCTS	41	Seattle	WA	USA
CD2100P1	1	2000	WENH	57	Durham	NH	USA
CD2140P2	1	2000	KSCI	61	Los Angeles	CA	USA
CD2200P2	1	1999	KCPQ	18	Seattle	WA	USA
CD2200P2	1	1999	WPBT	18	Miami	FL	USA
CD2200P2	1	1999	KBWB	19	San Francisco	CA	USA
CD2200P2	1	1999	WCVB	20	Needham	MA	USA
CD2200P2	1	2000	WRIC	22	Richmond	VA	USA
CD2200P2	1	1999	KDKA	25	Pittsburgh	PA	USA
CD2200P2	1	1999	KMSP	26	Minneapolis	MN	USA
CD2200P2	1	1999	KUTP	26	Phoenix	AZ	USA
CD2200P2	1	2000	WTMJ	28	Milwaukee	WI	USA
CD2200P2	1	1999	WBZ	30	Boston	MA	USA
CD2200P2	1	1999	KPTV	30	Portland	OR	USA
CD2200P2	1	1999	KQED	30	San Francisco	CA	USA
CD2200P2	1	1999	WRDW	31	North Augusta	SC	USA
CD2200P2	1	1999	WFLD	31	Chicago	IL	USA
CD2200P2	1	1999	WCCO	32	Minneapolis	MN	USA
CD2200P2	1	1999	WJZ	38	Baltimore	MD	USA
CD2200P2	1	1999	KOIN	40	Portland	OR	USA
CD2200P2	1	1999	WRAZ	49	Durham	NC	USA



CD2200P2	1	2000	WSPA	53	Spartanburg	SC USA
CD2200P2	1	1999	KTXL	55	Sacramento	CA USA
CD2200P2	1	2000	KLFY	56	Lafayette	LA USA
CD2200P2	1	1999	WKMG	58	Orlando	FL USA
CD2200P2	1	2000	WLNS	59	Lansing	MI USA
CD2300P3	1	1999	KRIV	27	Houston	TX USA
CD2300P3	1	1999	WVEC	41	Norfolk	VA USA
CD2300P3	1	1999	KGW	46	Portland	OR USA
CD2300P3	1	1999	WTVD	52	Durham	NC USA
CD2300P3	1	1999	KXTV	61	Sacramento	CA USA
CD2400P4	1	1999	WFOR	22	Miami	FL USA
CD2400P4	1	1999	WRAL	53	Raleigh	NC USA
CD270P1	1	1999	WRLK	32	Columbia	SC USA
CD270P1	1	1999	KTVX	40	Salt Lake City	UT USA
CD300P3	1	1998	KTVT	19	Fort Worth	TX USA
CD300P3	1	1998	KPRC	35	Houston	TX USA
CD300P3	1	1998	KTVI	43	St Louis	MO USA
CD300P3	1	1998	KMOV	56	St Louis	MO USA
CD3070P1	1	2001	WTVO	16	Rockford	IL USA
CD3070P1	1	2002	KTTU	19	Tucson	AZ USA
CD3070P1	1	2001	WSBN	32	Roanoke	VA USA
CD3070P1	1	2001	WMSY	42	Roanoke	VA USA
CD3070UPG2	1	2001	WVUT	52	Vincennes	IN USA
CD3100P1	1	2000	WRDQ	14	Orlando	FL USA
CD3100P1	1	2000	WPTZ	14	Plattsburg	NY USA
CD3100P1	1	2000	KFOX	15	El Paso	TX USA
CD3100P1	1	2001	KHQ	15	Spokane	WA USA
CD3100P1	1	2000	WPBF	16	Palm Beach Gdns	FL USA
CD3100P1	1	2002	KSEE	16	Fresno	CA USA
CD3100P1	1	2001	WTOL	17	Toledo	OH USA
CD3100P1	1	2001	WLTX	17	Columbia	SC USA
CD3100P1	1	2000	KFSM	18	Fort Smith	AR USA
CD3100P1	1	2000	WTVG	19	Toledo	OH USA
CD3100P1	1	2000	WMOR	19	Tampa	FL USA
CD3100P1	1	2000	WHO	19	Des Moines	IA USA
CD3100P1	1	2001	WXMI	19	Grand Rapids	MI USA
CD3100P1	1	2000	KETV	20	Omaha	NE USA
CD3100P1	1	2001	KXII	20	Sherman	TX USA
CD3100P1	1	2000	KHBS	21	Fort Smith	AR USA
CD3100P1	1	2000	KOAT	21	Albuquerque	NM USA
CD3100P1	1	2002	WDWB	21	Southfield	MI USA
CD3100P1	1	2002	WPTA	24	Fort Wayne	IN USA
CD3100P1	1	2001	WLBZ	25	Bangor	ME USA
CD3100P1	1	2000	WLKY	26	Louisville	KY USA
CD3100P1	1	2000	WTEN	26	Albany	NY USA
CD3100P1	1	2001	KTVB	26	Boise	ID USA
CD3100P1	1	2002	KXXV	26	Waco	TX USA
CD3100P1	1	2000	WREG	28	Memphis	TN USA
CD3100P1	1	2000	WSBT	30	South Bend	IN USA
CD3100P1	1	2001	WVLT	30	Knoxville	TN USA
CD3100P1	1	2000	KCCI	31	Des Moines	IA USA
CD3100P1	1	2000	WXII	31	Winston Salem	NC USA
CD3100P1	1	2001	KCWE	31	Kansas City	MO USA
CD3100P1	1	2000	KDAF	32	Dallas	TX USA
CD3100P1	1	2000	WJAC	34	Johnstown	PA USA
CD3100P1	1	2000	WISN	34	Milwaukee	WI USA
CD3100P1	1	2001	WLWT	35	Cincinnati	OH USA



CD3100P1	1	2000	KTTC	36	Rochester	MN	USA
CD3100P1	1	2001	WSYM	38	Lansing	MI	USA
CD3100P1	1	2002	WKBW	38	Buffalo	NY	USA
CD3100P1	1	2000	WAPT	39	Jackson	MS	USA
CD3100P1	1	2001	WWWB	39	Charlotte	NC	USA
CD3100P1	1	2002	WHIZ	40	Zanesville	OH	USA
CD3100P1	1	2000	WHIO	41	Dayton	OH	USA
CD3100P1	1	2000	WDSU	43	New Orleans	LA	USA
CD3100P1	1	2001	WUPA	43	Atlanta	GA	USA
CD3100P1	1	2000	KRXI	44	Reno	NV	USA
CD3100P1	1	2000	KQCA	46	Sacramento	CA	USA
CD3100P1	1	2000	WJZY	47	Charlotte	NC	USA
CD3100P1	1	2001	WAVE	47	Louisville	KY	USA
CD3100P1	1	2001	KASW	49	Phoenix	AZ	USA
CD3100P1	1	2001	WCTV	52	Tallahassee	FL	USA
CD3100P1	1	2001	WPHL	54	Philadelphia	PA	USA
CD3100P1	1	2000	WTOV	57	Mingo Junction	OH	USA
CD3100P1	1	2000	WGAL	58	Lancaster	PA	USA
CD3100P1	1	2001	KMOL	58	San Antonio	TX	USA
CD3100P1	1	2000	WYFF	59	Greenville	SC	USA
CD3100P2	1	2000	WTKR	40	Norfolk	VA	USA
CD3100P2	1	2001	WTTW	47	Chicago	IL	USA
CD3100P3	1	1999	WFTV	39	Orlando	FL	USA
CD3100UPG	1	2002	WFTT	47	Tampa	FL	USA
CD3100UPG2	1	2002	WBAL	59	Baltimore	MD	USA
CD3120P1	1	2002	WFIQ	22	Birmingham	AL	USA
CD3130P1	1	2002	WAIQ	14	Birmingham	AL	USA
CD3130P1	1	2001	WGNO	15	New Orleans	LA	USA
CD3130P1	1	2002	WIIQ	19	Birmingham	AL	USA
CD3130P1	1	2002	KBJR	19	Duluth	MN	USA
CD3130P1	1	2000	WHIQ	24	Birmingham	AL	USA
CD3130P1	1	2001	KONG	31	Seattle	WA	USA
CD3130P1	1	2001	WBFS	32	Miami	FL	USA
CD3130P1	1	2001	KSTW	36	Renton	WA	USA
CD3130P1	1	2000	WQAD	38	Moline	IL	USA
CD3130P1	1	2000	WEAU	39	Eau Claire	WI	USA
CD3130P1	1	2001	WNOL	40	New Orleans	LA	USA
CD3130P1	1	2001	WEIQ	41	Birmingham	AL	USA
CD3130P1	1	2002	WIS	41	Columbia	SC	USA
CD3130P1	1	2001	WGIQ	44	Birmingham	AL	USA
CD3130P1	1	2001	WPMT	47	York	PA	USA
CD3130P1	1	2002	WTVH	47	Syracuse	NY	USA
CD3130P1	1	2001	WNPA	49	Pittsburgh	PA	USA
CD3130P1	1	2000	KWTX	53	Waco	TX	USA
CD3130P1	1	2002	WEEK	57	East Peoria	IL	USA
CD3130P1	1	2002	KBTX	59	Bryan	TX	USA
CD3140P2	1	2001	WGNT	19	Portsmouth	VA	USA
CD3140P2	1	2001	WUPL	24	Metairie	LA	USA
CD3140P2	1	2002	WPTO	28	Dayton	OH	USA
CD3140P2	1	2001	KUTV	34	Salt Lake City	UT	USA
CD3140P2	1	2000	KWTV	39	Oklahoma City	OK	USA
CD3140P2	1	2001	WWHO	46	Columbus	OH	USA
CD3140P2	1	2001	WTVX	50	Miami	FL	USA
CD3140P2	1	2002	WPTD	58	Dayton	OH	USA
CD3200P1	1	2001	KVOA	23	Tucson	AZ	USA
CD3200P1	1	2001	WGRZ	33	Buffalo	NY	USA
CD3200P2	1	2000	WDBJ	18	Roanoke	VA	USA



CD3200P2	1	2002	WLRN	20	Miami	FL	USA
CD3200P2	1	2001	KOKI	22	Tulsa	OK	USA
CD3200P2	1	2000	WBAY	23	Green Bay	WI	USA
CD3200P2	1	2000	KTVK	24	Phoenix	AZ	USA
CD3200P2	1	2001	KOLN	25	Lincoln	NE	USA
CD3200P2	1	2000	WATE	26	Knoxville	TN	USA
CD3200P2	1	2000	WKRN	27	Nashville	TN	USA
CD3200P2	1	2001	WIAT	30	Birmingham	AL	USA
CD3200P2	1	2002	WAGT	30	Augusta	GA	USA
CD3200P2	1	2001	WBIR	31	Knoxville	TN	USA
CD3200P2	1	2001	KGIN	32	Grand Island	NE	USA
CD3200P2	1	2002	KETA	32	Oklahoma City	OK	USA
CD3200P2	1	2002	WSIL	34	Carterville	IL	USA
CD3200P2	1	2000	KFRE	36	Fresno	CA	USA
CD3200P2	1	2001	KFTH	36	Houston	TX	USA
CD3200P2	1	2001	WJRT	36	Flint	MI	USA
CD3200P2	1	2002	KOED	38	Oklahoma City	OK	USA
CD3200P2	1	2001	WZZM	39	Grand Rapids	MI	USA
CD3200P2	1	2000	KAZH	41	Houston	TX	USA
CD3200P2	1	2000	WRBW	41	Orlando	FL	USA
CD3200P2	1	2001	WJXT	42	Jacksonville	FL	USA
CD3200P2	1	2001	KTFO	42	Tulsa	OK	USA
CD3200P2	1	2001	WCSH	44	Portland	ME	USA
CD3200P2	1	2001	WAMI	47	Miami	FL	USA
CD3200P2	1	1998	KING	48	Seattle	WA	USA
CD3200P2	1	2000	WITV	49	Columbia	SC	USA
CD3200P2	1	2001	WLNE	49	Providence	RI	USA
CD3200P2	1	2001	WLAJ	51	Lansing	MI	USA
CD3200P2	1	2001	WHAS	55	Louisville	KY	USA
CD3200P2	1	2001	WFRV	56	Green Bay	WI	USA
CD3200P2	1	2001	KRCA	68	Burbank	CA	USA
CD3200P2	1	2000	KAZA		Glendale	CA	USA
CD3200P3	1	1998	WBNS	21	Columbus	OH	USA
CD3200P3	1	1998	WTHR	46	Indianapolis	IN	USA
CD3250P2	1	2001	WMTW	46	Auburn	ME	USA
CD3260P2	1	2002	WKNO	29	Memphis	TN	USA
CD3260P2	1	2000	KELO	32	Sioux Falls	SD	USA
CD3260P2	1	2001	WITN	32	Washington	NC	USA
CD3260P2	1	2001	KWGN	34	Englewood	CO	USA
CD3260P2	1	2001	KHWB	38	Houston	TX	USA
CD3260P2	1	2002	KEYE	43	Austin	TX	USA
CD3260P2	1	2002	WUVG	48	Atlanta	GA	USA
CD3260P2	1	2000	KDIN	50	Johnston	IA	USA
CD3260P2	1	2001	WFMY	51	Greensboro	NC	USA
CD3260P2	1	2001	KOTV	55	Tulsa	OK	USA
CD3260P2	1	2000	KWQC	56	Davenport	IA	USA
CD3260P2	1	2000	WHNT	59	Huntsville	AL	USA
CD3300P3	1	2001	WUND	20	Research Triang	NC	USA
CD3300P3	1	2000	WWL	30	New Orleans	LA	USA
CD3300P3	1	2001	KAUT	42	Oklahoma City	OK	USA
CD3300P3	1	2001	KSAT	48	San Antonio	TX	USA
CD3300P3	1	2001	WUNC	59	Research Triang	NC	USA
CD3400P4	1	2001	KYTV	44	Springfield	MO	USA
CD370P1	1	2000	KTXH	19	Houston	TX	USA
CD370P1	1	2002	WOTF	20	Melbourne	FL	USA
CD370P1	1	2001	WLWC	22	Boston	MA	USA
CD370P1	1	2001	WPSG	32	Philadelphia	PA	USA



CD370P1	1	2002	WJAC	34	Johnstown	PA	USA
CD370P1	1	2001	WSBK	39	Boston	MA	USA
CD370P1	1	2000	WNEP	49	Moosic	PA	USA
CD3P1	1	2001	WATL	25	Atlanta	GA	USA
CD60	1	2001	KORO	27	Corpus Christi	TX	USA
CD70P1	1	1998	KIRO	39	Seattle	WA	USA
CD70P1	1	1998	KBHK	45	San Francisco	CA	USA



## (Tab 13) Module Exchange Program

### HARRIS MODULE EXCHANGE PROGRAMS

Harris sponsors a module exchange program for many of its transmitters. This program allows customers to replace a repairable module with a tested old module to Harris.



transmitters. with a tested old module to

**Does Harris have an exchange program for modules used in my transmitter?**

transmitter?

It's very likely we do, since we offer exchange programs for many of the currently Harris offers over 60 different module exchange programs!

many of the currently Harris

To learn whether a program is available for your specific module, please phone the Harris service Parts Department anytime and ask for exchange information.

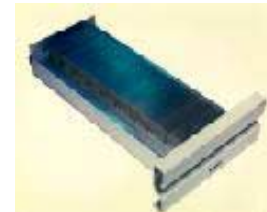
module, please module

**Harris has a program for the module I want to exchange. What do I do?**

If you have a repairable module that is covered by a Harris exchange program, please do the following:

1. Phone Harris Service Parts and indicate you want to participate in a module exchange program.
2. Order a replacement module.
3. A return authorization and Equipment Failure Report Form for your old module will be sent to you with your replacement module.
4. Complete the Equipment Failure Report Form and return it, along with your old module, transportation and insurance prepaid to:

Harris Corporation Broadcast Communications Division  
 Parts Department  
 Building 1, North Dock  
 3200 Wismann Lane  
 Quincy, IL 62305



5. After Harris receives and evaluates the module you are returning, your account will be credited. Your module will be refurbished in our repair shop and re-stocked in inventory.

**Is there any advantage to ordering a refurbished module instead of a new one?**

Yes. Harris offers refurbished modules in stock at a lower price than new modules. Plus, both new and refurbished modules carry the same 90-day warranty from date of shipment.

Typical cost basis for a module exchange is based on 80% of the cost of a new module.



## (Tab 14) Service Bulletins

### Service Bulletins:

Service bulletins are produced to make customers aware of performance improvement, field modifications requirements and other corrective measures when it is considered to be of significant importance to the operation and performance of the equipment. Harris sends the bulletins to the original purchaser or if known, to the current user of the product in question. All bulletins are kept on file in the event there is a request for all bulletins of a particular model. Bulletins are stamped on the outside of the envelop indicating “product bulletin enclosed”, “attention chief engineer”.



### Update Kits:

In addition to the service bulletins mentioned above, Harris makes available update parts kits that may be purchased by customers wishing to keep their equipment up to date. In cases where the updates involve issues of safety or necessary corrections to meet specifications the kits are provided at no cost to the end user.



### Parts:

Harris Parts department located at the transmitter manufacturing facility in Quincy Illinois. It is available at 217-221-7500, 24hr a day, 365 days per year, holidays included. Harris supports all manufactured product for at least 10 years. Harris ships 90% of all emergency parts within 24 hours and 99% in 5 days. It is Harris's intention to maintain product parts availability at all times. At this writing both emergency and non-emergency parts are handled in the same manner, time table for delivery of non-emergency parts depends on the request of the customer.



## (Tab 15) Warranty

### WARRANTY:

From Harris To You:

This warranty is extended to You and applies to all Harris Broadcast Communications Division manufactured equipment purchased hereunder, installed, and used for the purpose for which such equipment was originally designed.

### What Harris Will Do:

If Your Harris manufactured equipment fails in normal use because of a defect in materials, workmanship, or design, within one year from date of shipment, (i) Harris will repair or replace (at our option) the equipment or part returned to our factory per our authorization (ii) Harris will provide qualified technical consultation by phone or written correspondence as reasonably necessary and within Harris' sole discretion, to advise your (qualified customer) technical personnel.

### Items Sold As Resale:

Non-manufactured Harris items to be utilized in conjunction with or independently of Harris manufactured equipment such as tubes, printers and antenna transmission line shall be covered only by the specific warranty terms of the supplier and/or manufacturer of those items.

What is Not Covered On Equipment Sold By Harris:

Harris cannot warranty, guarantee or be responsible for:

A) Defects or failures caused in whole or in part by Your abuse, or misuse or by unauthorized attempts to repair or alter the equipment in any way. You must provide qualified technical personnel to maintain and repair the equipment.

B) Consequential expenses incurred by You or user from transportation, removal, replacement, evaluation, testing, non-Harris repair or service costs. Consequential damages from any causes such as downtime costs, costs for substituting equipment or loss of anticipated profits or revenue.

C) Equipment built to Your specifications that is later found not to meet Your needs or expectations.

D) The performance of the equipment when used in combination with equipment not purchased, specified, or approved by Harris.

E) Signal Coverage delivered by antenna equipment supplied by Harris.

F) Damages and performance limitations due to outside forces such as snow, ice, lightning, excessive heat or cold, or high corrosive environments.

G) Cost to ship equipment to and from Harris to provide the repair, replacement or return of a defective part or unit. Equipment shall be returned to Harris in accordance with the terms and conditions of Harris product return policy described above.

You shall promptly notify Harris, in writing, of any notice, suit or other action against You based on a claim that the Licensed Program(s) infringes a U.S. Patent, Copyright or Trade Secret of a third party. At Harris' option, Harris will defend, at its expense and under its control, any such action and will pay all settlement costs or damages awarded against You.

Harris, at its option and at its expense, may procure for You the right to continue using the Licensed Program, or to modify it or to render such noninfringing, or replace such with substantially equivalent noninfringing programs.

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