



**RETURN BIDS TO:  
RETOURNER LES SOUMISSIONS À:**

**Bid Receiving - PWGSC / Réception des  
soumissions - TPSGC**  
**11 Laurier St. / 11, rue Laurier**  
**Place du Portage, Phase III**  
**Core 0B2 / Noyau 0B2**  
**Gatineau, Québec K1A 0S5**  
**Bid Fax: (819) 997-9776**

**REQUEST FOR PROPOSAL  
DEMANDE DE PROPOSITION**

**Proposal To: Public Works and Government  
Services Canada**

We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

**Proposition aux: Travaux Publics et Services  
Gouvernementaux Canada**

Nous offrons par la présente de vendre à Sa Majesté la Reine du chef du Canada, aux conditions énoncées ou incluses par référence dans la présente et aux annexes ci-jointes, les biens, services et construction énumérés ici sur toute feuille ci-annexée, au(x) prix indiqué(s).

**Comments - Commentaires**

**Vendor/Firm Name and Address**  
**Raison sociale et adresse du**  
**fournisseur/de l'entrepreneur**

**Issuing Office - Bureau de distribution**  
Electrical & Electronics Products Division  
11 Laurier St./11, rue Laurier  
7B3, Place du Portage, Phase III  
Gatineau, Québec K1A 0S5

<b>Title - Sujet</b> SATELLITE SYSTEM UPGRADE	
<b>Solicitation No. - N° de l'invitation</b> 5Z011-160115/A	<b>Date</b> 2016-01-13
<b>Client Reference No. - N° de référence du client</b> 5Z011-160115	
<b>GETS Reference No. - N° de référence de SEAG</b> PW-\$\$HN-363-68809	
<b>File No. - N° de dossier</b> hn363.5Z011-160115	<b>CCC No./N° CCC - FMS No./N° VME</b>
<b>Solicitation Closes - L'invitation prend fin</b> <b>at - à 02:00 PM</b> <b>on - le 2016-02-19</b>	<b>Time Zone</b> <b>Fuseau horaire</b> Eastern Standard Time EST
<b>F.O.B. - F.A.B.</b> <b>Plant-Usine:</b> <input type="checkbox"/> <b>Destination:</b> <input checked="" type="checkbox"/> <b>Other-Autre:</b> <input type="checkbox"/>	
<b>Address Enquiries to: - Adresser toutes questions à:</b> Pilote, Benoit	<b>Buyer Id - Id de l'acheteur</b> hn363
<b>Telephone No. - N° de téléphone</b> (819) 420-0335 ( )	<b>FAX No. - N° de FAX</b> ( ) -
<b>Destination - of Goods, Services, and Construction:</b> <b>Destination - des biens, services et construction:</b> LIBRARY AND ARCHIVES CANADA OFF - DG STEWARDSHIP LAC PRESERVATION CTR, RM 5P10 625 CARREFOUR BLVD GATINEAU Quebec K1A0N4 Canada	

**Instructions: See Herein**

**Instructions: Voir aux présentes**

<b>Delivery Required - Livraison exigée</b> See Herein	<b>Delivery Offered - Livraison proposée</b>
<b>Vendor/Firm Name and Address</b> <b>Raison sociale et adresse du fournisseur/de l'entrepreneur</b>	
<b>Telephone No. - N° de téléphone</b> <b>Facsimile No. - N° de télécopieur</b>	
<b>Name and title of person authorized to sign on behalf of Vendor/Firm</b> <b>(type or print)</b> <b>Nom et titre de la personne autorisée à signer au nom du fournisseur/</b> <b>de l'entrepreneur (taper ou écrire en caractères d'imprimerie)</b>	
<b>Signature</b>	<b>Date</b>



Item Article	Description	Dest. Code Dest.	Inv. Code Fact.	Qty Qté	U. of I. U. de D.	Destination	Unit Price/Prix unitaire FOB/FAM	Plant/Usine	Delivery Req. Livraison Req.	Del. Offered Liv. offerte
1	SATELLITE SYSTEM UPGRADE PRICE TURNKEY PROPOSAL FOR THE UPGRADE AND REPLACEMENT OF EXISTING SATELLITE RECEPTION INFRASTRUCTURE USED TO ACQUIRE TELEVISION BROADCAST SIGNALS.	5Z011	5Z011	1	lot	\$	XXXXXXXXXXXX		See Herein	

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## **PART 1 - GENERAL INFORMATION**

### **1.1 Security Requirements**

There is no security requirement associated with the requirement.

### **1.2 Statement of Work**

The contractor must provide the goods and/or services in accordance with the technical requirements stated herein at annex A Statement of work.

#### **1.2.1 Delivery Requirement**

Delivery is requested to be completed by September 31, 2016.

### **1.3 Debriefings**

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

### **1.7 Trade Agreements**

"The requirement is subject to the provisions of the), the North American Free Trade Agreement (NAFTA), and the Agreement on Internal Trade (AIT)."

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## PART 2 - BIDDER INSTRUCTIONS

### 2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (<https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The [2003](#) (2015-07-03) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation.

Subsection 5.4 of [2003](#), Standard Instructions - Goods or Services - Competitive Requirements, is amended as follows:

Delete: 60 days

Insert: 90 days

#### 2.1.1 SACC Manual Clauses

SACC Reference	Section	Date
<a href="#">A9033T</a>	Financial Capability	2012-07-16
<a href="#">B1000T</a>	Condition of Material	2014-06-26

### 2.2 Submission of Bids

Bids must be submitted only to Public Works and Government Services Canada (PWGSC) Bid Receiving Unit by the date, time and place indicated on page 1 of the bid solicitation.

### 2.3 Optional Site Visit

It is recommended that the Bidder or a representative of the Bidder visit the work site. Arrangements have been made for the site visit to be held at 625 Boulevard du Carrefour, Gatineau, Québec, J8T 8L8, **January 28, 2016. The site visit will begin at 10h00.** Bidders are requested to communicate with the Contracting Authority no later than January 27, 2016 to confirm attendance and provide the name(s) of the person(s) who will attend. Bidders may be requested to sign an attendance sheet. Bidders who do not attend or do not send a representative will not be given an alternative appointment but they will not be precluded from submitting a bid. Any clarifications or changes to the bid solicitation resulting from the site visit will be included as an amendment to the bid solicitation.

### 2.4 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit

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the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated, and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

## **2.5 Applicable Laws**

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

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## **PART 3 - BID PREPARATION INSTRUCTIONS**

### **3.1 Bid Preparation Instructions**

Canada requests that Bidders provide their bid in separately bound sections as follows:

- Section I: Technical Bid ( 2 hard copies)
- Section II: Financial Bid ( 1 hard copies)
- Section III: Certifications ( 1 hard copies)
- Section IV: Additional Information ( 1 hard copies)

Prices must appear in the financial bid only. No prices must be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) paper;
- (b) use a numbering system that corresponds to the bid solicitation.

In April 2006, Canada issued a policy directing federal departments and agencies to take the necessary steps to incorporate environmental considerations into the procurement process [Policy on Green Procurement](http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html) (<http://www.tpsgc-pwgsc.gc.ca/ecologisation-greening/achats-procurement/politique-policy-eng.html>). To assist Canada in reaching its objectives, Bidders should:

- 1) use 8.5 x 11 inch (216 mm x 279 mm) paper containing fibre certified as originating from a sustainably-managed forest and containing minimum 30% recycled content; and
- 2) use an environmentally-preferable format including black and white printing instead of colour printing, printing double sided/duplex, using staples or clips instead of cerlox, duotangs or binders.

#### **Section I: Technical Bid**

In their technical bid, Bidders should explain and demonstrate how they propose to meet the requirements and how they will carry out the Work.

#### **Section II: Financial Bid**

Bidders must submit their financial bid in accordance with the Basis of Payment. The total amount of Applicable Taxes must be shown separately.

### **3.1.2 Exchange Rate Fluctuation**

The requirement does not offer exchange rate fluctuation risk mitigation. Requests for exchange rate fluctuation risk mitigation will not be considered. All bids including such provision will render the bid non-responsive.

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**Section III: Certifications**

Bidders must submit the certifications required under Part 5.

**Section IV: Additional Information**

**3.1.4 Delivery Offered**

While delivery is requested as indicated above, the best delivery that could be offered is\_\_\_\_\_.



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## **PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION**

**You are reminded that this solicitation requires the compliance and/or completion of requirements attached as an Annex and forming part of this document.**

### **4.1 Evaluation Procedures**

- a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- b) An evaluation team composed of representatives of Canada will evaluate the bids.

#### **4.1.1 Technical Evaluation**

All bids must be completed in full and provide all of the information requested in the bid solicitation to enable full and complete evaluation.

##### **4.1.1.1 Mandatory Technical Criteria**

The following Mandatory requirements must be submitted with the bid for evaluation

- Technical compliance to criteria M1 to M11 herein at Annex A;

#### **4.1.2 Financial Evaluation**

##### **4.1.2.1 Pricing Basis**

The bidder must quote firm lot prices in Canadian dollars, DDP Delivered Duty Paid (destination), Applicable Taxes extra, as applicable. Freight charges to destination and all applicable Custom duties and Excise taxes must be included as applicable.

### **4.2 Basis of Selection**

A bid must comply with the requirements of the bid solicitation and meet all mandatory technical evaluation criteria to be declared responsive. The responsive bid with the lowest evaluated price will be recommended for award of a contract.

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## **PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION**

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

### **5.1 Certifications Required with the Bid**

Bidders must submit the following duly completed certifications as part of their bid.

#### **5.1.1 Declaration of Convicted Offences**

As applicable, pursuant to subsection Declaration of Convicted Offences of section 01 of the Standard Instructions, the Bidder must provide with its bid, a completed [Declaration Form](#), to be given further consideration in the procurement process.

### **5.2 Certifications Precedent to Contract Award and Additional Information**

The certifications and additional information listed below should be submitted with the bid, but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame provided will render the bid non-responsive.

#### **5.2.1 Integrity Provisions – List of Names**

Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder.

Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).

Bidders bidding as societies, firms or partnerships do not need to provide lists of names.

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### 5.2.2 General Environmental Criteria Certification

The Bidder must select and complete one of the following two certification statements.

- A) The Bidder certifies that the Bidder is registered or meets ISO 14001.

\_\_\_\_\_  
Bidders' Authorized Representative Signature

\_\_\_\_\_  
Date

**or**

- B) The Bidder certifies that the Bidder meets and will continue to meet throughout the duration of the contract, a minimum of four (4) out of six (6) criteria identified in the table below.

The Bidder must indicate which four (4) criteria, as a minimum, are met.

<b>Green Practices within the Bidders' organization</b>	<b>Insert a checkmark for each criterion that is met</b>
Promotes a paperless environment through directives, procedures and/or programs	
All documents are printed double sided and in black and white for day to day business activity unless otherwise specified by your client	
Paper used for day to day business activity has a minimum of 30% recycled content and has a sustainable forestry management certification	
Utilizes environmentally preferable inks and purchase remanufactured ink cartridges or ink cartridges that can be returned to the manufacturer for reuse and recycling for day to day business activity.	
Recycling bins for paper, newsprint, plastic and aluminum containers available and emptied regularly in accordance with local recycling program.	
A minimum of 50% of office equipment has an energy efficient certification.	

\_\_\_\_\_  
Bidders' Authorized Representative Signature

\_\_\_\_\_  
Date

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### 5.2.3 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list ([http://www.labour.gc.ca/eng/standards\\_equity/eq/emp/fcp/list/inelig.shtml](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)) available from [Employment and Social Development Canada \(ESDC\) - Labour's](#) website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of contract award.

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## PART 6 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

### 6.1 Security Requirements

6.1.1 There is no security requirement applicable to this Contract.

### 6.2 Statement of Work

The contractor must provide the goods and/or services in accordance with the technical requirements stated herein.

#### 6.2.3 SACC Manual Clauses

SACC Reference	Section	Date
<a href="#">B1501C</a>	Electrical Equipment	2006-06-16

### 6.3 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

#### 6.3.1 General Conditions

[2010A](#) (2015-09-03), General Conditions - Goods (Medium Complexity), apply to and form part of the Contract.

### 6.4 Term of Contract

#### 6.4.1 Period of the Contract

#### 6.4.1 Delivery Date

All the deliverables must be received on or before \_\_\_\_\_ (Delivery as offered and as accepted will be inserted at contract award).

### 6.5 Authorities

#### 6.5.1 Contracting Authority

The Contracting Authority for the Contract is:

[Benoit Pilote](#), [Supply team Leader](#)

Public Works and Government Services Canada - Acquisitions Branch  
Logistics, Electrical, Fuel and Transportation Directorate - "HN" Division  
7B3, Place du Portage, Phase III, 11 Laurier Street, Gatineau, QC, K1A 0S5

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Telephone: (819) 420-0335  
E-mail address: Benoit.Pilote@pwgsc-tpsgc.gc.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.

### 6.5.2 Project Authority

The Project Authority for the Contract is: (will be inserted at contract)

Name:

Title:

Telephone: (xxx) xxx-xxxx Facsimile: (xxx) xxx-xxxx

E-mail:

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority; however the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

OR

### 6.5.2 Technical Authority

The Technical Authority for the Contract is: (will be inserted at contract)

Name:

Title:

Telephone: (xxx) xxx-xxxx Facsimile: (xxx) xxx-xxxx

E-mail:

The Technical Authority named above is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Technical Authority; however the Technical Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

### 6.5.3 Contractor's Representative

Name and telephone number of the person responsible for: (will be inserted at contract)

#### General enquiries

Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

E-mail: \_\_\_\_\_

#### Delivery follow-up

Name: \_\_\_\_\_

Telephone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

E-mail: \_\_\_\_\_

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## 6.6 Payment

### 6.6.1 Basis of Payment

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid **a firm lot prices**, as specified in **the contract** for a cost of \$ \_\_\_\_\_ (**insert the amount at contract award**). Customs duties are **included** and Applicable Taxes are extra.

### 6.6.2 Limitation of Price

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

### 6.6.3 Single Payment or Multiple Payments

SACC Manual clause **H1000C** (2008-05-12) Single Payment

### 6.6.4 SACC Manual Clauses

SACC Reference	Section	Date
<b>G1005C</b>	Insurance	2008-05-12

## 6.7 Invoicing Instructions

1. The Contractor must submit invoices in accordance with the section entitled "Invoice Submission" of the general conditions. Invoices cannot be submitted until all work identified in the invoice is completed.

(a) The original and one (1) copy must be forwarded to the consignee.

(b) One (1) copy must be forwarded to the Contracting Authority identified under the section entitled "Authorities" of the Contract.  
Department of Public Works and Government Services - "HN" Division  
7B3 Place du Portage, Phase III, 11 Laurier Street, Gatineau, QC, K1A 0S5  
Attention: Benoit Pilote

## 6.8 Certifications

### 6.8.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing additional information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the additional information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.

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## 6.9 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Ontario.

## 6.10 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the general conditions 2010A (2015-09-03), General Conditions - Goods (Medium Complexity);
- (c) Annex A, Statement of Work;
- (d) the Contractor's bid dated \_\_\_\_\_ (*insert date of bid*) (*If the bid was clarified or amended, insert at the time of contract award: “, as clarified on \_\_\_\_\_” or “, as amended on \_\_\_\_\_” and insert date(s) of clarification(s) or amendment(s)*)

## 6.11 SACC Manual Clauses

SACC Reference	Section	Date
<u>D5545C</u>	ISO 9001:2008 - Quality Management Systems - Requirements (Quality Assurance Code C)	2010-08-16



## ANNEX “A”

### Statement of Work

#### 1. Scope

##### 1.1 Title

Upgrade and replacement of existing satellite reception infrastructure used to acquire television broadcast signals.

##### 1.2 Objectives of the Requirement

Library and Archives Canada (LAC) has a requirement to upgrade their existing satellite dishes and to purchase new high definition (HD) capable receivers.

The overall goal of the upgraded installation is:

- The reception of Canadian Broadcasting Corporation (CBC), CTV Television Network (CTV), Société Radio-Canada (SRC) and the Aboriginal Peoples Television Network (APTN) television broadcast signals in HD;
- The retrofit of both of LAC’s satellite dishes (see 1.3 for more details);
- The replacement of components of LAC’s existing infrastructure to allow for high definition-serial digital interface (HD-SDI) outputs of these feeds to be transmitted over existing multimode fibre optic cabling; and,
- The capability to monitor and control the satellite receivers via remote equipment with GUI access, facilitated by networking over existing multimode fibre optic cabling.

##### 1.3 Background, Assumption and Specific Scope of the Requirement

###### 1.3.1 Background

LAC acquires standard definition television programming via satellite. Signals are recorded from satellite broadcasts for: CTV; CBC; SRC; and, APTN.

The current infrastructure consists of a polar mount steerable C-band/KU-band dish and a second fixed KU-band satellite dish feeding a rack of four commercial satellite receivers. Cabling from the satellite dishes runs via underground conduits to the satellite receivers that are located in a sub-basement crawlspace. The existing decoders are configured for analog composite video and mono audio outputs which are connected by cabling through the building to the fifth floor video lab. The satellite receiver equipment used to decode this programming is unable to acquire HD video signals. The continued acquisition of programming via satellite requires the acquisition and integration of high definition video receivers and related equipment.

The equipment in question last functioned in June 2013. In July 2014 a detailed overview of the existing satellite reception equipment installed at the preservation centre was prepared (see Annex B “LAC Satellite System Review – September 2014”). Any description of the condition of existing equipment was accurate as of that date.

### 1.3.2 Specific Scope of Requirements

Based on findings within the *LAC Satellite System Review* report, LAC requires an upgraded satellite reception turn key solution that provides for a mixed C-Band and xKU-Band system using the original broadcaster distribution feeds wherever possible. The solution will enable the reception of the highest quality broadcast signals off of satellite for CBC, SRC, and CTV broadcasts via C-Band on Anik F1R and APTN HD on Anik G1.

LAC requires that the contractor configure all satellite receivers and make all necessary arrangements for the permission to decode all broadcast signals.

The retrofit of LAC's satellite reception system should include the replacement or addition of any necessary line amplifiers, interference filters and/or any additional equipment needed to fulfill all requirements.

All Receivers must output the decoded signal in HD-SDI format and the solution must permit the transmission of the HD-SDI signals to the 5<sup>th</sup> floor video lab via pre-existing multimode fibre optic cabling. The solution must provide for the remote control and monitoring of the satellite receivers in the 5<sup>th</sup> floor video lab via a closed local network.

LAC requires that the solution include one small, portable HD-SDI capable audio/video/waveform monitor that could be moved and used in either the basement crawlspace or installed in the 5<sup>th</sup> floor equipment rack for the test monitoring of received signals.

LAC requires that all new equipment in the sub-basement crawlspace and 5<sup>th</sup> floor video lab be protected by an appropriate rack mountable UPS. All existing racks can be re-used or reconfigured if appropriate.

LAC requires that maintenance and upgrades be performed on both existing satellite dishes to restore them both to optimal working condition so that the 1.8M antenna can be enabled as a functioning xKU/KU backup source.

LAC requires the contractor to install and integrate all components of the upgraded satellite reception solution.

LAC requires that the contractor provide full documentation of the completed work in the form of "as-built" line drawings and configuration details in written form.

The scope of the required satellite reception solution ends at the point of delivering four HD-SDI feeds via multimode fibre to the equipment rack in the 5<sup>th</sup> floor and configuring remote network control of the HD receivers over fibre. Equipment to capture and encode the HD-SDI feeds is not within the scope of this contract.

### 1.3.3 Turnkey Solution

A turnkey system is a system that will be turned over to the buyer in a fully operational ready-to-use condition. Provision of a turnkey system means that everything needed to fulfill the requirements of the specification will be provided by the Contractor including, without

limitation: design, development, supply, transport and delivery, installation, site evaluation, site preparation, acceptance testing, commissioning, documentation, service, and warranty.

## 2. Technical Evaluation

### 2.1 Mandatory Criteria

Drawing on all the information provided in section 1.3 and Annex B “*LAC Satellite System Review*”, bidders must outline and explain how their proposed solution, meets the following requirements. Bids must meet all mandatory criteria to receive further consideration. **Please clearly indicate the reference within the submitted bid materials where each mandatory criteria is addressed:**

Number	Mandatory Criteria	Cross-reference to Proposal
M1	The satellite reception solution must provide for a mixed C-Band and xKU-Band system with all signals originating from 107.3W (Anik F1R/G1).	
M2	LAC requires that the existing 3.8M steerable dish be inspected and upgraded with new xKU LNB's, C-Band terrestrial interference filters, L-Band line amplifiers, aligned and tested.	
M3	LAC requires that maintenance and upgrades be performed on the existing fixed 1.8M dish to enable it as a functioning xKU/KU backup source.	
M4	The satellite reception solution must be able to receive CBC, SRC, CTV and APTN broadcasts in HD.	
M5	LAC requires that the contractor configure all satellite receivers and make all necessary arrangements for the permission to decode all broadcast signals. (proof of arrangement must be provided)	
M6	The satellite reception solution must be able to output decoded broadcast signals via HD-SDI.	
M7	The satellite reception solution must provide for the transmission of received HD-SDI output feeds via pre-existing multimode fibre optic cabling between the sub-basement equipment rack and the 5 <sup>th</sup> floor video preservation lab, where the signals are to be converted back to HD-SDI for ingest into existing LAC video encoding equipment. (It is the contractor's responsibility to determine if the existing equipment is able to fulfill the requirement).	
M8	The satellite reception solution must provide for a method of remote monitoring and control of the sub-basement satellite receivers from the 5 <sup>th</sup> floor video lab via a closed local network.	
M9	The satellite reception solution must include one small, portable HD-SDI capable audio/video/waveform monitor for the test monitoring of received signals – 7” to 10” display size.	
M10	LAC requires that all new equipment in the sub-basement crawlspace and 5th floor video lab be protected by an appropriate rack mountable UPS.	

M11	LAC requires one cold spare for each type of satellite receiver proposed in the satellite reception solution to be installed in the sub-basement equipment rack and ready to be swapped into service in the event of equipment failure	
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### 3. Installation

All equipment is to be delivered and installed at Library and Archives Canada's Preservation Centre located at:

625 Boulevard du Carrefour  
Gatineau, Québec  
J8T 8L8

## **ANNEX B**

### **LIBRARY AND ARCHIVES CANADA SATELLITE RECEIVE SYSTEM REVIEW**

(This report is for information purpose only. It is the bidder/contractor's responsibility to verify the findings of this report.)

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# **LIBRARY AND ARCHIVES CANADA SATELLITE RECEIVE SYSTEM**

## **1.0 INTRODUCTION**

Library and Archives Canada (LAC) currently acquires approximately 30 hours of standard definition television programming weekly via satellite. Signals are recorded daily from Shaw satellite broadcasts for: CTV; CBC; SRC; and, APTN.

The current infrastructure at the LAC Preservation Centre in Gatineau consists of a polar mount steerable C band/KU band dish and a second fixed KU band satellite dish feeding a rack of four dated commercial satellite receivers. Cabling from the satellite dishes runs via underground conduits to the satellite receivers that are located in a sub-basement crawlspace. The existing decoders are configured for analogue composite video and mono audio outputs which are connected by cabling through the building to the 5<sup>th</sup> floor Video Lab in room 5H01 for recording.

The satellite receive equipment used to decode this programming is unable to acquire high definition video (preservation quality) signals for capture. The continued acquisition of programming via satellite requires investment in modern high definition video receivers and related equipment.

This is a review of the LAC receive satellite system and the equipment currently installed at the facility.

## **2.0 CURRENT SYSTEM OVERVIEW**

LAC records national news feeds from various Canadian broadcasters daily. Currently the signals are obtained from both C and KU band satellites. The satellite receivers are tuned to Shaw satellite feeds, for which the channels over the air are encrypted. LAC pays a subscription fee for access to these signals. The APTN signal has been failed for some time due to Shaw updating the encryption scheme to DigiCipher II from the current receiver's PowerVu capability. The current infrastructure was installed in the late 1980's. Personnel originally responsible for the installation and maintenance are no longer at the facility. Maintenance and upgrades have been neglected for some time. The outdated receive equipment outputs standard definition analogue video with mono audio. The signals then are routed to the 5<sup>th</sup> floor Lab via coaxial and audio cabling. Digital Rapids recording equipment is used to convert these analogue signals into a MXF wrapped JPEG2000 file for the archives.

## **2.1 SYSTEM UPGRADES TO CONSIDER**

Upgrade items under consideration:

- Satellite receivers are to be upgraded to high definition (HD) capable.
- HD video output and embedded stereo audio preferred output transport is via HD-SDI.



- Existing fibre run is available for signal transport to 5th floor Lab (*to be verified*).
- Maintenance requirements of existing antenna equipment or replacements.
- UPS power protection desired for equipment located in the crawlspace.
- Requirements for equipment sparing - cold spares only.
- Potential to record broadcaster's distribution feeds off of Anik F1R C-band feeds. Shaw signals are second generation encoding with quality loss. Switching to C-Band broadcast feeds would improve video quality and also eliminate rain fade events.
- Addition of TCPIP network connection for the remote 5th floor monitoring & control of basement equipment via built in web GUIs of new equipment.
- Investigate extending satellite RF signals from the basement over the existing fibre to the Lab area eliminating the need to physically access receivers in the building crawl space. (*feasibility must be verified due to the existing fibre being multimode*)

### 3.0 SITE OVERVIEW

On July 29, 2014, a detailed inventory, inspection and walkthrough of the existing satellite reception equipment was performed at the LAC Preservation Centre. During this walkthrough, the following observations were made: (these observations are provided for information purposes only. It is the bidder/contractor's responsibility to verify these observations.) ;

- Spectral plots of the various antenna signals recorded.
  - See Appendix A. The 3.8M KU signal levels are low into the rack and should have line amplification added.
- Operation of the steerable polar mount antenna was verified.
- Polar mount antenna was peaked via the controller, optimized for KU reception.
- Attempt was made to measure the cable run lengths to the two antenna locations. Unable to complete as crawlspace access for measurement of the 3.8M cabling was not sufficient. Measurement from crawlspace outside wall to antenna not easily determined. Requested that LAC contact building management for conduit length information if available. Estimates provided in this document are based on measurements taken on site combined with Google Earth measurements.
- Photos taken to document the existing equipment for the report.
  - See Section 5.0 for site photographs.
- Equipment interconnects determined for the existing configuration
  - Line Drawing available in Section 5, Figure 7.
- Sumac tree growth noted beneath both antennas will begin to impede on signals shortly.

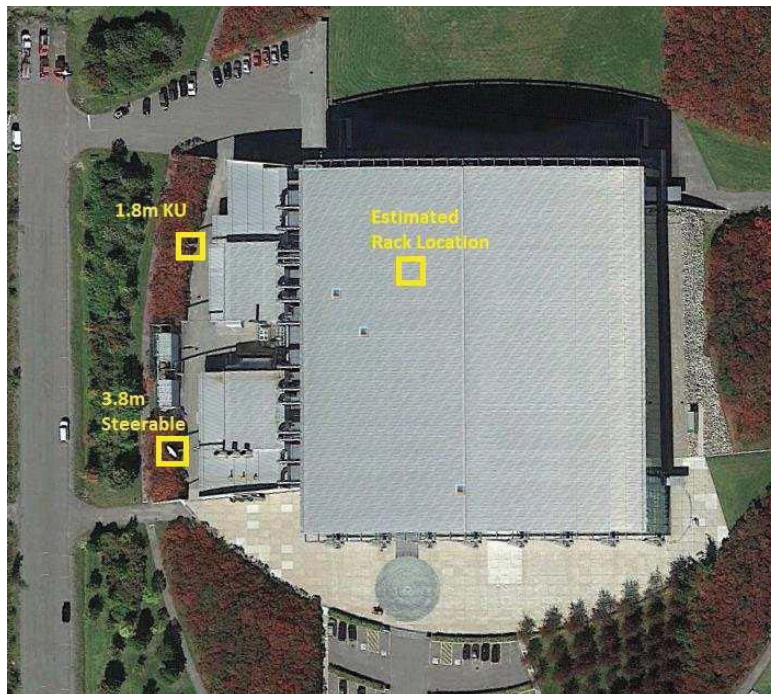


Figure 1- Equipment Locations

## 4.0 EQUIPMENT LISTING

The following is a listing of satellite equipment at the facility and existing system interconnect drawing. As the antennas are on elevated pole mounts, with line of sight over Sumac trees on sloped ground the antenna and LNB models have not been determined as the use of a bucket truck would have been required for access. Antenna sizes and cable runs are estimated based on measurements taken on site as well as measurements extracted from Google Earth visuals.

### 4.1 ANTENNA 1

- 3.8M Prime Focus Steerable TVRO, Polar Mount.
- 4 port receive only feed, C-Band H/ V polarities, Ku-Band H/V polarities.
- All four signals are available and functional.
- LNB makes and model unknown.
- Currently pointed at 107.3°W (Anik F1R/G1)
- Junction box / pull box located at base of pedestal.
- Estimated cable length 110M minimum (<150M)
- Antennal controller and positioner were confirmed as functional



Figure 2 - 3.8M Steerable C/KU Antenna

## 4.2 ANTENNA 2

- 1.8M (estimated) Offset Feed, fixed position antenna.
- Multiple pipe adapters used on mount, needs inspection.
- 2 port receive only antenna, Ku-Band H/V polarities
- Feed assembly needs inspection.
- LNB model Fujitsu GM-6921 (Ku DRO)
- Only one of the two LNB is functional. Cabling, LNB issue, or moisture build up.
- Currently pointed at 111.1°W Anik F2
- Junction box / pull box located at base of pedestal and 2nd box in crawlspace.
- Estimated Cable length, 75M minimum (< 100M)



Figure 3 - 1.8M Ku Antenna

### 4.3 BASEMENT CRAWLSPACE – EXISTING EQUIPMENT LIST

Satellite receiver equipment is located in a basement crawl space, which requires some navigation around various building mechanical areas and down a small vertical ladder. The equipment listed below is from top to bottom as shown in the rack photograph - Figure 4. Equipment is wired with no maintenance jack fields or cable management.

- Standard 19" Equipment Rack , 24" deep, 40+ RU (with front/rear doors)
- 6RU shelf / storage unit.
- General Instruments DSR 4400X, 1RU (used for CBC)
- General Instruments DSR 4400X, 1RU (used for CTV)
- Uniden Satellite Selector UST 7700at TVRO Controller, 2RU
- Drake ESR 1250 Earth Station Receiver (obsolete)
- Motorola DSR-4440, 2RU (used for SRC)
- IBDN Multimode fibre optic tray (50 um, 6 pairs, Duplex SC F interface), 1RU
- Cable Type – Belden 12x50um 1Gb Riser B9A042, OM2, length ~115m
- General Instrument DSR-4400, 2RU (not used)
- Scientific Atlanta Power Vu, 2RU (not used)
- Scientific Atlanta Power Vu, 2RU (used for APTN)
- Various BGI RF power splitters (not in use)
- 2 Port Power Insertion Unit – Sonora TA2330Da
- Qty. 2 19" rack mounted power distribution bars, 1 RU each
- Marshall V-LCD8-Pro 8" Composite/S-Video and Audio display



**Figure 4 - Crawlspace Rack**



#### 4.4 VIDEO LABORATORY ROOM 5H01

The video laboratory is located on the 5th floor of the facility. The existing fibre optic run terminates in the top of the rack identified below. This location houses the recording equipment used to transfer pictures and record video content to an archive format. The current analogue sources are routed to the Digital Rapids Stream Z encoders located in the lower half of the rack. Recorded video is then saved in the storage array for transfer. The rack contains a drawer style KVM keyboard and display for accessing the encoders. It is envisioned that this existing equipment would be utilized to provide remote access to new basement equipment web GUI for remote status and control. The Digital Rapids servers have secondary Ethernet interfaces that can be used to create a private network to access the equipment remotely.

- HP 19" Rack (unlabeled), beside Rack 9
- 42 RU rack, deep for computer servers, top half is currently free
- IBDN Multimode fibre optic tray (50 um, 6 pairs, Duplex SC F interface), 1RU
- Cable Type – Belden 12x50um 1Gb Riser B9A042, OM2, length ~115m
- HP Pullout display & Keyboard
- KVM Switch Product # 513735-001 8 port, 6 free ports
- RGB/PS2 to RJ45 Interface adapters # 286597-001
- Qty. 1, Storage Array.
- Qty. 4, Digital Rapids, Stream Z encoders.

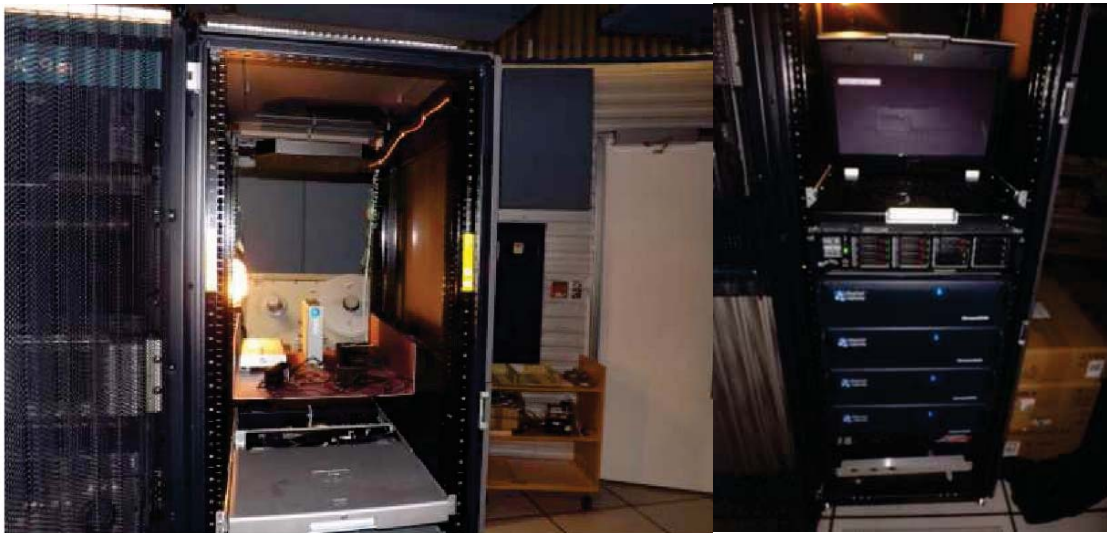
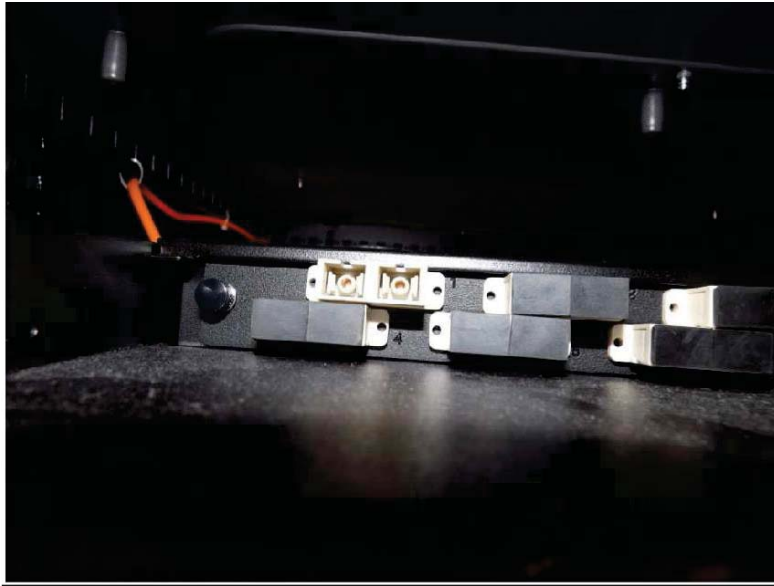


Figure 5 - Room 5H01 Rack - Top / Bottom



**Figure 6 - Fibre Interconnect Panel (Basement and Room 5H01)**

## Interconnection Diagram – Current System Interconnect to Room 5H01

This report does not cover beyond the signal entering Room 5H01.

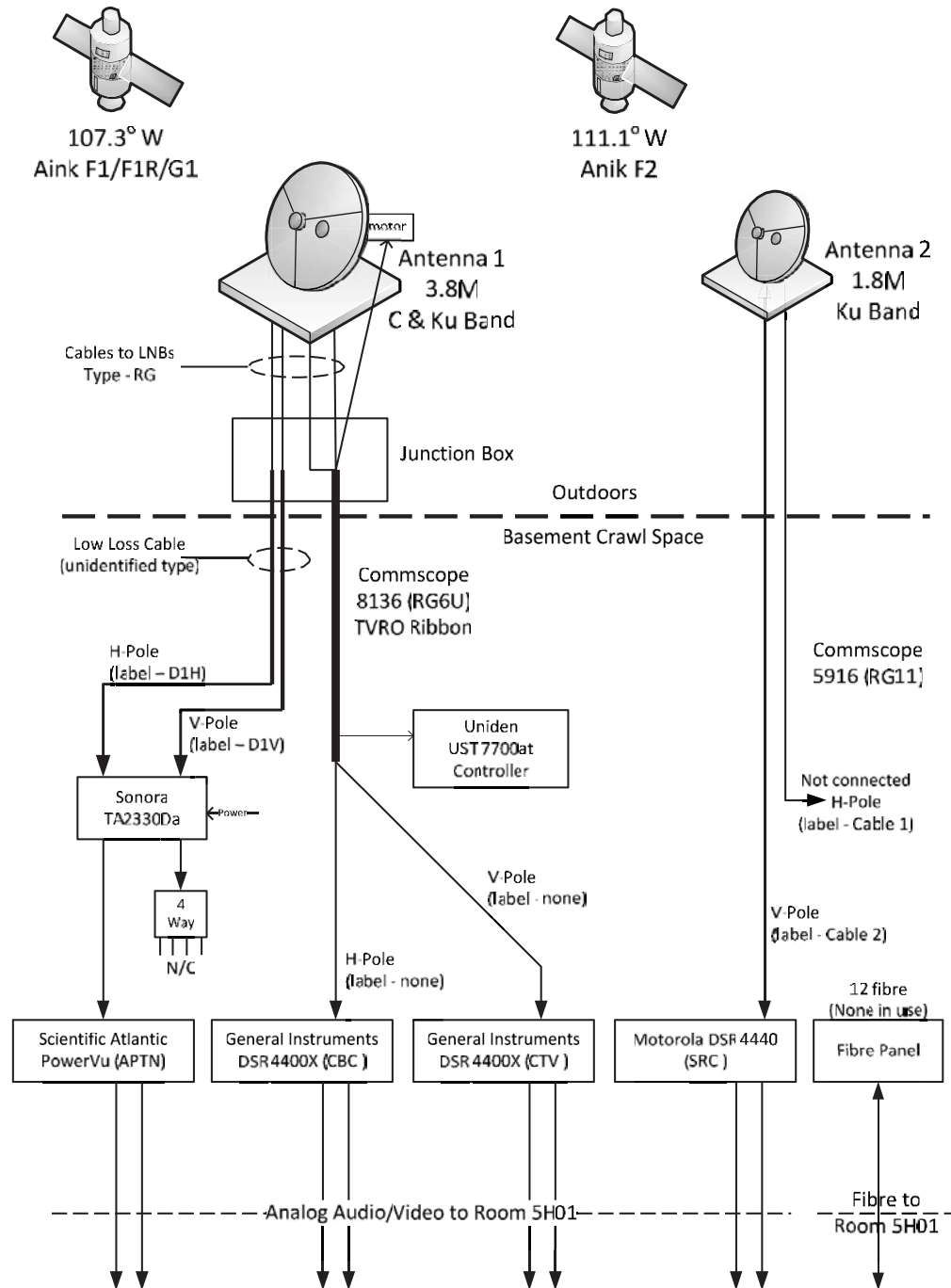


Figure 7 – Current System Interconnects



## APPENDIX A – SPECTRUM PLOTS

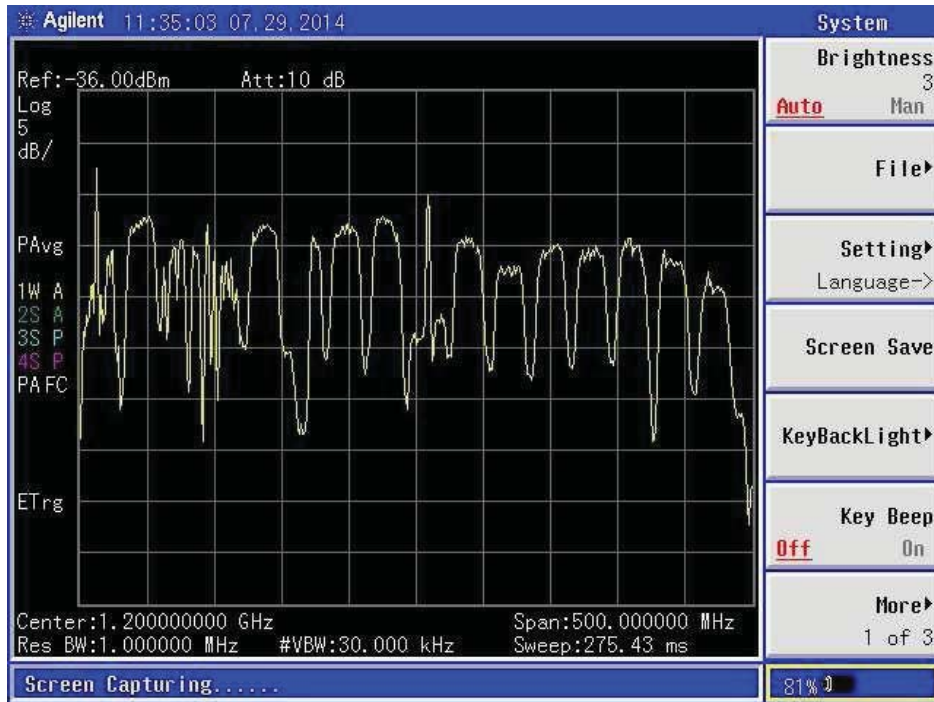


Figure 8 – 1.8M Anik F2 KU 111.1W V-Pole

(Not available – LNB or cable failure.)

Figure 9 - 1.8M Anik F2 KU 111.1W H-Pole

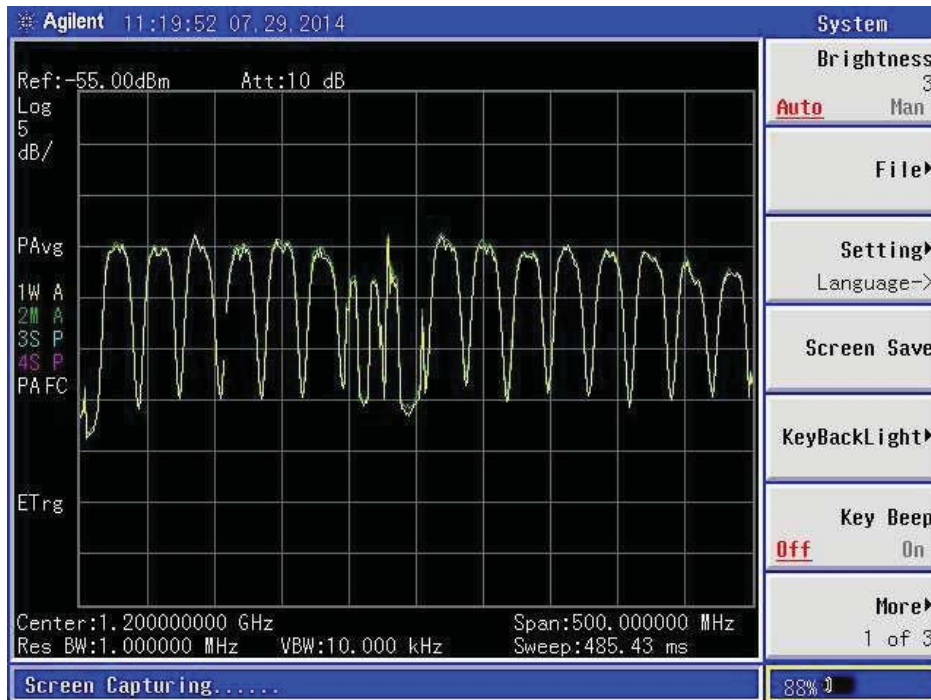


Figure 10 - 3.8M 107.3W KU-Band H-Pole

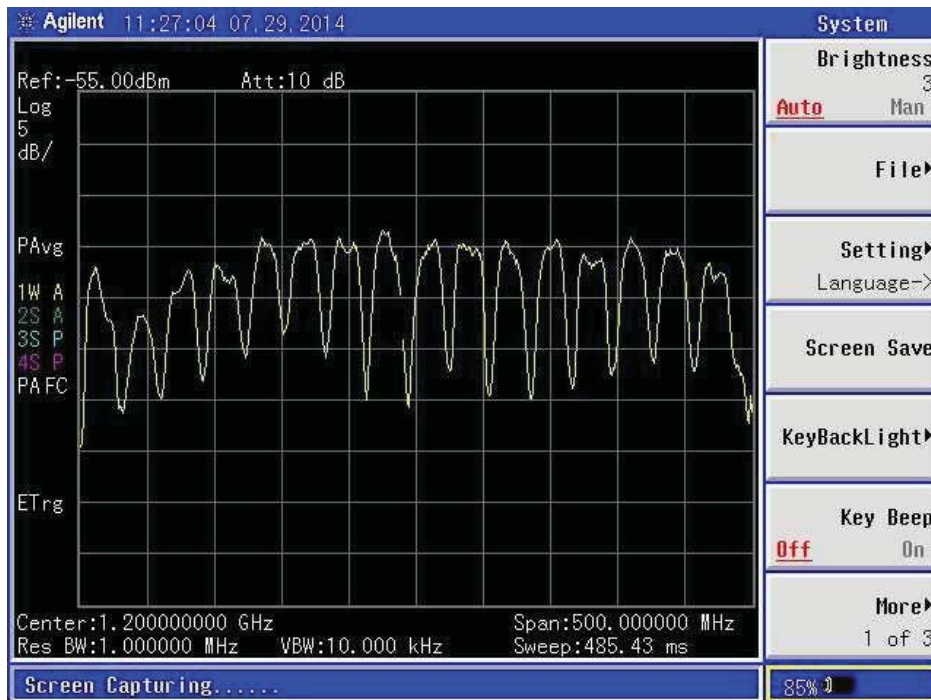


Figure 11 - 3.8M 107.3W KU-Band V-Pole

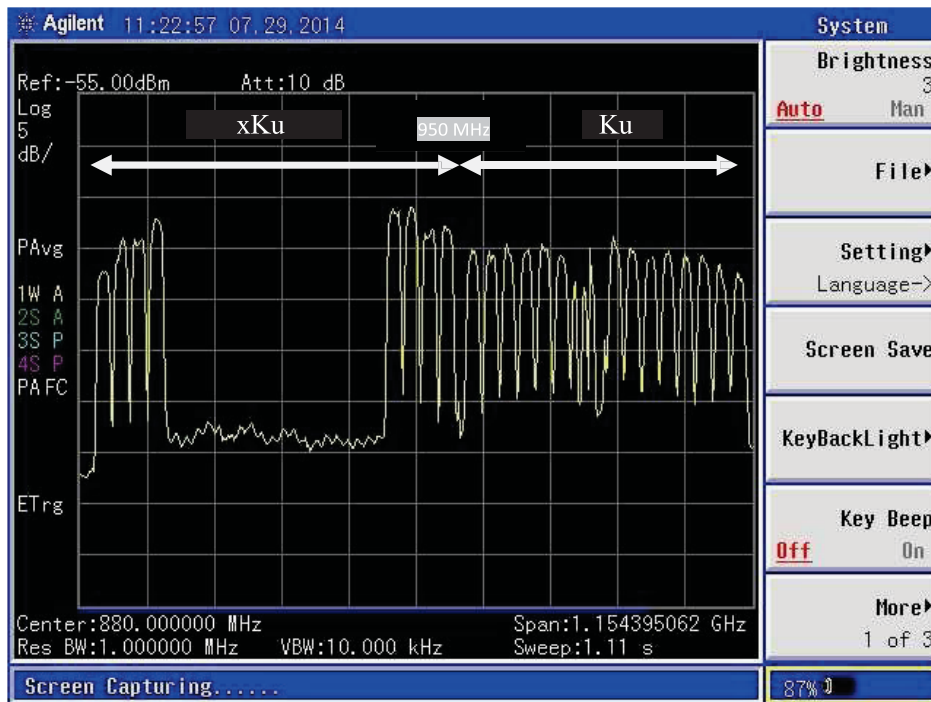


Figure 12 - 3.8M 107.3W xKU & KU-Band H-Pole

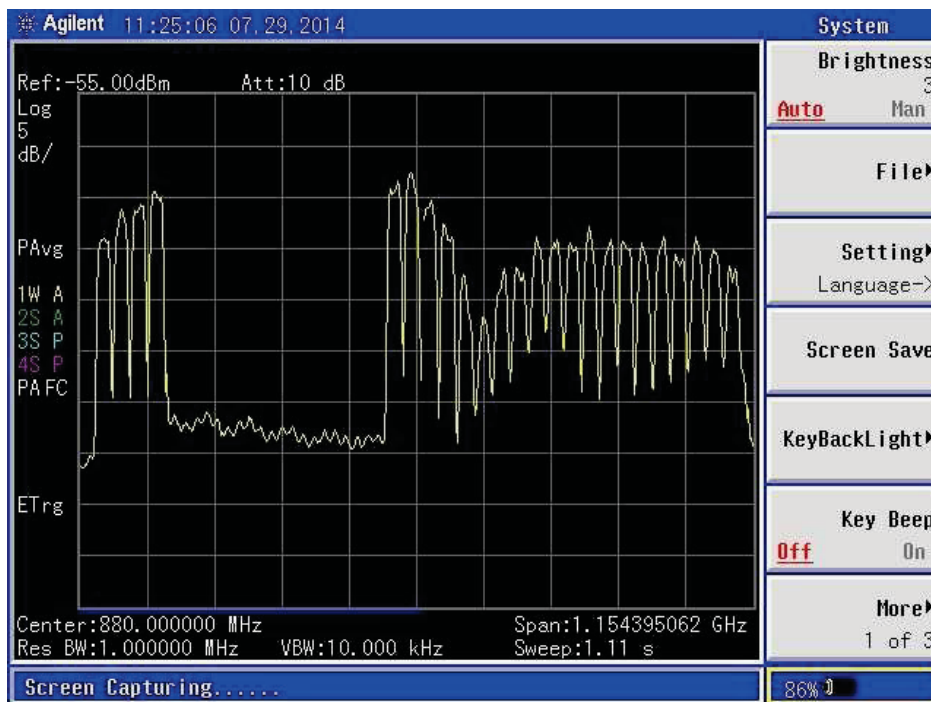


Figure 13 - 3.8M 107.3W xKU & KU-Band V-Pole

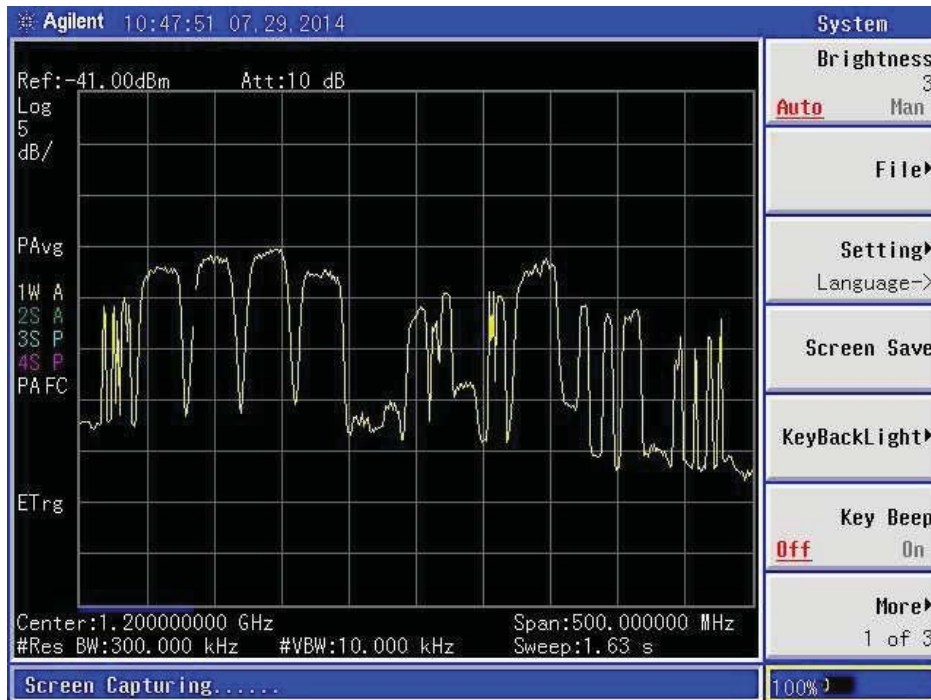


Figure 14 - 3.8M 107.3W C-Band V-Pole

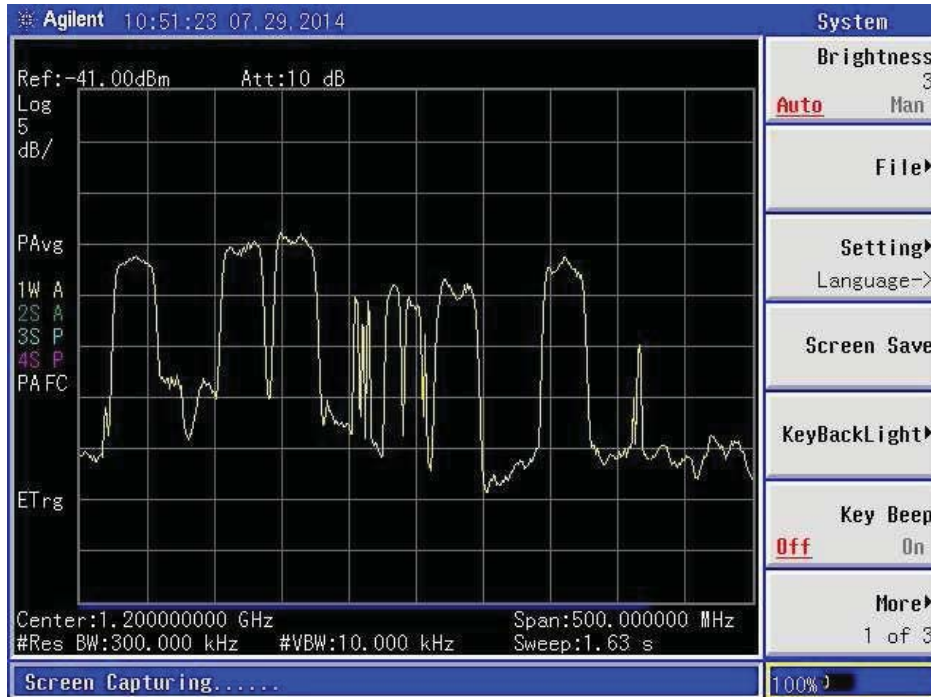


Figure 15 - 3.8M 107.3W C-Band H-Pole