



**Statement of Requirements  
for  
FM Broadcast Band Reject Filter Kit**

**August 10, 2023**

Issued by ISED

Spectrum and Telecommunications Sector

## 1. Scope

This Statement of Requirements (SOR) details the requirements for an FM Broadcast Band Reject Filter Kit.

### 1.1 Background

Innovation, Science and Economic Development Canada (ISED), Spectrum and Telecommunications Sector (STS) is currently modernizing its aging radio frequency test and measurement equipment portfolio under the auspices of the Pulsar program. This equipment is used to monitor, localize and measure technical parameters of radio emissions for radio interference, compliance and enforcement work.

STS officers are often required to perform radio frequency measurements in the commercial broadcast, aeronautical, land mobile radio VHF and UHF bands. These measurements and tests often occur in hostile (i.e., high signal and noise levels) RF environments necessitating the use of RF filters to protect equipment from damaging overload, and to allow accurate measurements to be made. Radio frequency filters currently in use have reached end-of-life and cannot be repaired when worn out or broken. This necessitates their replacement to ensure that this capability is maintained going forward.

### 1.2 Instructions

The following instructions apply to this specification:

- a. Requirements, which are identified by the word “**must**,” are mandatory. Deviations will not be permitted.
- b. Where a technical specification or requirement is identified in the mandatory technical specifications, proof of compliance must be provided with the RFP response.

### 1.3 Definitions

The following definitions apply to the interpretation of this Statement of Requirements:

**Technical Authority:** The government official responsible for technical content.

**FM Broadcast Band Reject Filter Kit:** A complete pre-kitted package of all hardware including all parts, such as the filtering device and compact/rugged carrying cases, in a complete manufactured state in accordance with the Statement of Requirements.

**Proof of Compliance:** An unaltered document, such as a product marketing brochure, and/or operating manual, and/or service manual, and/or product data sheet. The document must provide detailed information on each performance requirement and/or specification. Where a document submitted as proof of compliance does not cover all the performance requirements and/or specifications, an attestation (as a separate document) signed by an authorized representative of the Original Equipment Manufacturer (OEM) detailing how the performance requirements and/or specifications are met must be provided.

### 1.4 Technical Specifications

The contractor must provide the requested filter kits in accordance with the technical specifications detailed in Appendix 1 – Mandatory Technical Specifications for FM Broadcast Band Reject Filter Kit.

### 1.5 Standard Design

The components in the kit must be the manufacturer’s latest in production models.

### 1.6 Identification

Manufacturer's name, model and serial number should be permanently marked on the unit.

### 1.7 Equipment Documentation

Any available documentation (i.e., operator’s and maintenance manuals) must accompany each kit. Documentation must be provided in French or English.

Any documentation should be bilingual (English/French).

If the contractor is only able to provide the documentation in one of the two official languages, written permission of the copyright holder of the documents to use and translate any copyrighted material must be provided to the Government of Canada for translation.

### 1.8 Accessibility Requirements

The manuals should be delivered in an accessible format, in compliance with the Harmonised European Standard, EN 301 549 (2018) ([https://www.etsi.org/deliver/etsi\\_en/301500\\_301599/301549/02.01.02\\_60/en\\_301549v020102p.pdf](https://www.etsi.org/deliver/etsi_en/301500_301599/301549/02.01.02_60/en_301549v020102p.pdf)) for accessible Information and Communication Technology (ICT), clause 10 for non-web documents.

Any other instructions that are provided with the kits should conform to those standards for web-based documents, electronic documents, and hard copies.

The provision of facilities, tools and services, and all associated costs, to make the components and deliverables of this project accessible must be at the contractor’s expense.

For practical guidance on creating accessible documents, refer to these Accessible Document Guides (<https://a11y.canada.ca/en/>).

### 1.9 Equipment Lifecycle

Lifecycle of this equipment will be a ten (10) year period from date of delivery and acceptance of goods received as ordered and received undamaged.

### 1.10 Maintenance Support

The contractor must ensure capability to provide parts and repairs for a period of ten (10) years from date of delivery and acceptance of the equipment.

### 1.11 Warranty

- a. Each unit purchased must include one (1) year standard warranty.
- b. The contractor must provide a list of all Canadian designated warranty service providers that will honour the warranty for the equipment procured under this contract, including the contact person and phone number at each warranty provider. Where no Canadian designated warranty service providers are available, the contractor must provide a list of intermediary depots located in Canada that will facilitate the transit of the warranty equipment to outside Canada for servicing. The contractor must include the contact person and phone number at each depot. The contractor will be responsible for the cost of handling and shipping the defective part/component to the factory for repair. The contractor will be responsible for handling, packaging and shipping the replacement equipment to the designated ISED destination.
- c. The warranty must include coverage for material and labour for covered repairs.
- d. The contractor must provide contact information, name and phone number, for warranty support.

### 1.12 List of Deliverables

#### 1.12.1 FM Broadcast Band Reject Filter Kit

Description	Quantity
FM Broadcast Band Reject Filter Kit, as specified in the Statement of Requirements	45 units
The contractor must deliver all units by February 29, 2024.	



## Appendix 1: Mandatory Requirements for FM Broadcast Band Reject Filter Kit

(Reference: Appendix 2 – Definitions and Glossary)

Item #	Category	Required Specifications
<b>General Filter Kit:</b>		
1	Storage Case	The filter must be pre-kitted in a single, compact, hard carrying case that provides form fitting soft interior padding.
<b>Rejection Band: 88 MHz to 108 MHz</b>		
2	Filter Type	The filter must be a passive, factory pre-tuned band reject filter.
3	Physical Form Factor	The filter must be in the form factor of a rigid enclosed unit (i.e., No exposed internal components).
4	Stop Band Frequencies	The filter must have an attenuation of at least 40 dB between 88 MHz to 106.5 MHz.
5	Attenuation Above 108.2 MHz	The filter must not attenuate signals above 108.2 MHz by more than 4 dB.
6	Attenuation Below 80 MHz	The filter must not attenuate signals below 80 MHz by more than 5 dB.
7	Filter Impedance	The nominal filter impedance must be 50 ohms.
8	Filter Insertion Loss	The filter insertion loss must not exceed 1.5 dB.
9	Power Handling	The filter must operate with a CW input power of at least 2 watts.
10	RF Connector Type	The input and output RF connectors must be female N type.
11	Filter Weight	The maximum filter weight shall not exceed 2.5 kg.
12	Filter Dimensions	L x W x H must be less than or equal to 60 x 10 x 12 centimeters.
13	Corrosion Protection	The exterior surfaces of the filter must be protected from corrosion.

## Appendix 2 –Definitions and Glossary

Definitions	
FM Broadcast Band Reject Filter Kit	A complete pre-kitted package of all hardware including all parts such as the filtering device and compact/rugged carrying cases in a complete manufactured state in accordance with the Statement of Requirements.
Glossary	
dB	Decibels – logarithmic ratio of powers
kg	Metric unit of mass in kilograms
L x W x H	Length x Width x Height
MHz	Radio frequency in millions of hertz
N	Type N RF connector
RF	Radio Frequency
FM	Frequency Modulation
CW	Constant Wave
RFP	Request for Proposal
UHF	Ultra High Frequency
VHF	Very High Frequency