Government of Canada
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Ministère des Communications

COMPARISON OF CANADIAN
AND AMERICAN TECHNICAL STANDARDS
APPLICABLE TO THE USE OF THE
RADIO FREQUENCY SPECTRUM

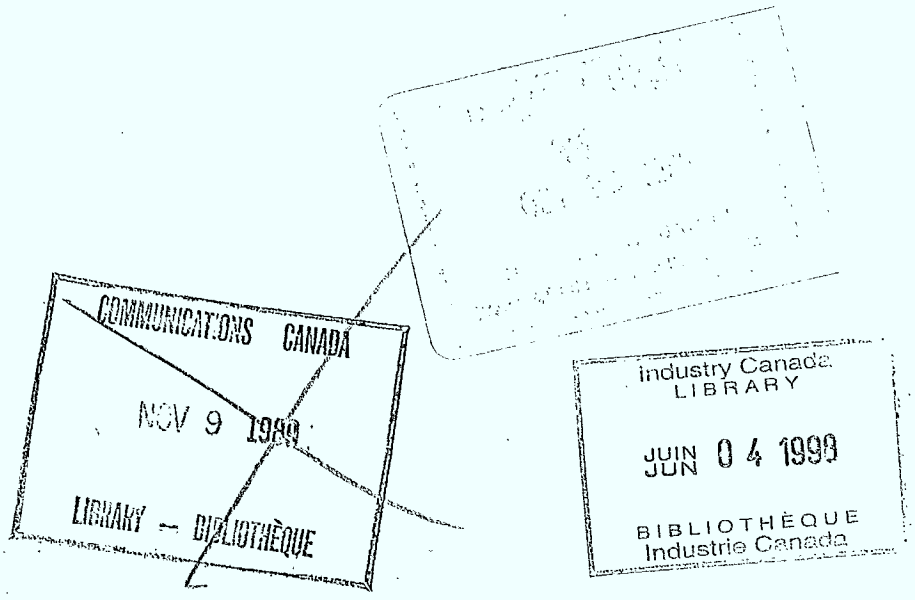
Background Study

Étude préalable

OCTOBER, 1988

PROGRAM EVALUATION ◦ DIVISION ◦ DE L'ÉVALUATION DES PROGRAMMES

COMPARISON OF CANADIAN AND AMERICAN TECHNICAL STANDARDS APPLICABLE TO THE USE OF THE RADIO FREQUENCY SPECTRUM



A.D. REVILL ASSOCIATES LIMITED

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This is one of ten Background Studies that form part of the evaluation of Radio Frequency Spectrum Management.

This study was conducted by A.D. Revill Associates Limited for the Program Evaluation Division of the Department of Communications, Canada.

The views expressed herein are the views of the author and do not necessarily represent the views or policies of the Department of Communications.

La présente est une des dix études préalables portant sur l'évaluation du programme de gestion du spectre des fréquences.

L'étude a été entreprise par A.D. Revill Associates Limited pour le compte de la Division de l'évaluation des programmes du ministère des Communications.

Les recommandations concernant les politiques et les programmes ou les points de vue exprimés, ici, sont ceux de l'auteur et ne reflètent pas nécessairement ceux du ministère des Communications ou les politiques du ministère.

COMPARISON OF CANADIAN AND AMERICAN TECHNICAL STANDARDS APPLICABLE TO THE USE OF THE RADIO FREQUENCY SPECTRUM

This comparison deals with the following documents.

BROADCAST RULES AND PROCEDURES

Part I - General Rules
Part II - Application Procedures For AM Broadcasting Transmitting Stations.

BP

1	Rule 19 - Assessment of TV & FM Interference
1	Rule 20 - TV Ghosting Interference
4	Preparation of Technical Submission for FM Stations
5	Protection and Coverage Rules - TV Stations
6	Rules for Stereo FM
7	Subsidiary Communication Multiplex on FM Broadcast
10	Requirements for Establishment of MDS-TV Broadcast, 2500-2686MHz
13	Protection and Coverage for Primary FM Broadcast Stations
22	Low Power TV Broadcast Stations
25	Stereo and Multiplex Sub-carriers For TV Station

BS

11	Requirements for the Establishment of a TV Station
13	Ancillary Signals in the Vertical Blanking Interval for TV Broadcast
14	Television Broadcast Videotext
15	Multichannel TV Sound

NOTICES

Notices to Broadcast Consultants Numbers 18, 37, 46 and 48A

List of Documents cont'd

RIC

4	Radio Equipment Accepted for Licensing in the G.R. Service
8	Common Carrier Service for Radio Paging
10	Information Re. Land and Mobile 138-144, 148-150.8MHz
12	Revised Maritime Mobile Bands
13	Transmitting Frequencies Maritime Mobile, 158-174Mhz
14	Ship-Shore and Intership SSB, 1605-23,000kHz
20	Guide for Examiners for Operators Certificates
39	Implementation in Canada of 25kHz Channelling of Aeronautical Mobile En Route Band
58	Mandatory Change From DSB to SSB
65	General Radio Service Extracts from General Radio Regulations

RII

204	Suppression of Inductive Interference - Wireless Microphones

RSP

100	Certification of Radio Equipment
101	Application Procedures Stations Below 960MHz
110	Provision of Spectrum Measurement Service by DOC
112	Measurement of Noise Figure TV Receiver
113	Application Procedures for Planned Station Above 890Mhz
114	License Application Procedure Earth Stations Space Radio
116	Application Procedure for TV and Radio Receiver Only

List of Documents cont'd

RSS

117	Land and Coast Station Transmitters, 200-535kHz
118	Land and Mobile Cellular Radio 825-845 and 870-890MHz
118	Annex A Cellular System Compatability Standard
119	Land and Mobile 27.41 - 866MHz
120	Portable Voice and Data Modulated AM or FM Transceivers, 27.41-866Mhz
120	Appendix Minimum Requirements for AM Transceivers
121	Voice and Data Modulated Radiotelephone Transceivers, 27.41-866MHz
125	Land and Mobile SSB Transceivers and Receivers, 1605 to 28,000 kHz 1Kw max.
125	Supplement - Aeronautical Mobile
136	General Radio Service Equipment Requirements
140	AM Land & Mobile Radiotelephone Transmitters and Receivers, 27.28-50Mhz
147	Emergency Locator Transmitters, 121.5MHz or 121.5 and 243.0MHz
150	AM Transmitters, 535-1705kHz, 10kHz spacing
150	Supplement for AM Stereo
151	Low Power TV Broadcast Transmitters, 55-88, 174-216, 470-890MHz
153	FM Broadcast Transmitters, 88-108Mhz
154	TV Broadcast Transmitters, 54-88, 174-216, 470-806MHz
155	TV Broadcasting Translators
156	AM Land Station Power Line Carrier, 1580KHz
157	Low Power TV Broadcast
158	AM Carrier Current Broadcast, 535-1605kHz
159	AM Receivers for Use in National Emergency
180	Land and Mobile SSB Transceivers, 1605-28,000kHz 10W
181	Coast and Ship Station AM - SSB 1605-28,000kHz
182	Coast and Ship Station FM or AM 156-162.5MHz
187	Marine Emergency Position Indicating Radio Beacon Transmitters
201	Radio Paging Receivers
202	Burglar Alarm Equipment
209	Cordless Telephones, 46 and 49MHz Bands
214	Wireless Microphone & Telemetering, 88-108MHz

List of Documents cont'd

SRSP

301.70	Line of Sight Radio Systems Fixed Service, 1700-1710MHz
301.9	Line of Sight Radio Systems, 1900-2290MHz
302.5	Stations in Fixed Service, 2500-2686MHz
303	Line of Sight radio-relay 1710-1900MHz
303.5	Line of Sight Fixed Service 3500-4200MHz
305.9	Line of Sight Radio Systems, Fixed Service, 5915-6425Mhz
307	Line of Sight, 6425-6550MHz and 6770-6930MHz
307.1	Line of Sight Systems Fixed Service, 7125-7725MHz
307.7	Line of Sight Systems Fixed Service, 7725-8275
308	Radio Relay Systems for TV Auxiliary Services, 6590-6770, 6930-7125
308.2	Line of Sight Systems, 8275-8500MHz
310	Line of Sight Radio Relay Systems 890-960MHz
311	Line of Sight Rixed Service, 1427-1525MHz
312.7	Fixed Service, 12.7-13.25GHz
314.5	Fixed Service, 14.5-15.35GHz
317.7	Line of Sight, Fixed, 17.70-18.14GHz, 19.26-19.70GHz
321.2	Fixed Service, 21.8-22.4, 23.0-23.6GHz
501	Land, Fixed and Mobile, 406.1-430 and 450-470MHz
502	Fixed and Mobile, 806-821 and 851 and 866MHz
503	Cellular Radio Telephone, 825-845 and 870-890Mhz

List of Documents cont'd

TB

1	Information Relating to the Regulation of Radio Apparatus Capable of Receiving Television Broadcasting
3	Cable Compatible TV Receiver Measurement Methods
4	Cable Converting TV Receiver Measurement Methods

TRC

51	Certification of Low Power Devices, 300-400MHz
53	Technical Requirement TV Transmitters for Remote Communities
54	FM Broadcast for Use in Remote Communities
55	Suppression of Inductive Interference From Small Lighting Plants
59	Technical Requirements for the Certification of Scrambled TV Systems
60	Technical Requirements - Receivers with Decoders
61	Technical Requirements TV Receiver Interface
70	Supplemental Performance Standards Stereo and Multiplex TV Equipment
71	Minimum Technical Requirements TV Transmitters 2500-2686

COMPARISON OF CANADIAN AND AMERICAN TECHNICAL STANDARDS APPLICABLE TO THE USE OF THE RADIO FREQUENCY SPECTRUM

Both Canadian and American standards depend upon regulations made under legislation applicable to the country concerned. In Canada these are consolidated and published as GRR-II-1, General Radio Regulations, Part II. They are subdivided into sections by topic as follows:

Section	Topic
1 - 3	Title, interpretation, authority
4	Classification of stations
5 - 8	Licensing and licenses; application, procedure, exception, classes, duration
9 - 31	Regulation of general applicability; assignment of frequency, limitation on emissions, call signs, costs and fees, use by government departments, exemptions from prohibition against divulging context of radio-communications.

In the United States the use of the radio frequency spectrum by non-governmental users is administered by the Federal Communications Commission (FCC). This body has the responsibility of developing and applying regulations made under legislative authority delegated to it. Like the Canadian regulations the FCC Rules and Regulations are also subdivided. In this case the subdivisions are called Parts. Some of these are quite general in nature and deal with administration procedures within the Commission, others coverr such matters as frequency allocations or other topics which apply to all radio services, while still others provide

specific regulations for the various radio services. The parts which relate to the technical aspects of radio frequency spectrum use include:

Part	Topic
2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
5	Experimental Radio Services (other than Broadcast)
15	Radio Frequency Devices
18	Industrial, Scientific and Medical Equipment
21	Domestic Public Fixed Radio Services
22	Public Mobile Radio Services
23	International Fixed Public Radio-communication services
25	Satelite Communications
73	Radio Broadcast Services
74	Experimental, Auxiliary and Special Broadcast and Other Program Distributional Services
80	Stations in the Maritime Services
87	Aviation Sevices
90	Private Land Mobile Radio Services

In addition to the FCC Rules and Regulations which govern the use of the spectrum by non-government agencies there are also regulations administered by the National Telecommunications and Information Administration (NTIA) which apply to all governmental use.

The regulations applicable to Canada are further developed and promulgated under the authority of the Minister of the Department of Communications in the form of various documents. These are procedures, standards and specifications and are listed in the Index of Spectrum Management Documents available to the Public. Many, although not all, of these relate to portions of the radio frequency spectrum and to the equipment which may be used to exploit it. There is no equivalent set of documents in the United States.

The practice there has been to further elaborate the FCC Rules and Regulations themselves. Because these are subdivided in general by service, that is by user, instead of by use, as in Canada, direct comparison presents difficulties.

The comparison presented here takes each Canadian document in turn and attempts to identify the American rule, FCC or NTIA which governs the equivalent use in the United States. It is recognized that the results are incomplete and caution should be used in applying them. Nevertheless it is hoped that they will assist any who require to compare Canadian and American practices, procedures andd standards.

DOC DOCUMENT - BROADCAST RULES AND PROCEDURES
PART I - GENERAL RULES

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
1. Structural adequacy of antennas - engineer to certify design	17.4 (a) Requires notice of construction except as provided in following sections but engineering design not required.
2. Selection of site Clearance per Transport Canada Requirements	17.4 (b) Notification to FAA
3. Preparation and submission of DOC Form 16-879 Application for construction	73.3512-16 Where and how to file application for construction.
Availability and suitability of land - power and communication facilities - accessibility - environmental constraints - zoning.	73.685 Factors affecting transmitter location, community coverage, field strength, radiation pattern. Principal community to be served to lie within: 74dbu contour Ch. 2-6 77dbu contour Ch. 7-13 80dbu contour Ch. 14-69.

Part I cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
3.1 Field strength contour maps - geographic coordinates - dimensional scale - antenna location - contours.	73.189 Effective antenna heights 73.190 AM Field strength charts ground conductivity. 73.150 Requirements for AM directional antenna system
4. Contingent proposals - acceptable prior to release of assignment	Closest equivalent FCC rules: 73.3517 Contingent application 73.1150 Transferring a station 73.1750 Discontinuance of operation
5. Technical operational requirements	
5.3.1 Controls ON-OFF, pattern selection, overload reset	

Part I cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
	73.69 Antenna monitoring required for stations using directional antennas.
	73.258 FM Performance Indicating Equipment
	73.267 Determining operating power, FM transmitters.
	73.663 Determining operating power TV visual transmitters
5.3.2 Accurate measurements - Frequency - Modulation - Power	73.1540 Carrier Frequency Measurements, AM, FM or TV
	73.1570 Modulation AM, FM & TV aural (stereo & mono)
	73.58 Indicating instruments, Power - AM. See also 73.1215.
	73.267 Power - FM
	73.663 Determining Power - TV visual.
	73.1215 Indicating instruments for broadcasting stations AM, FM & TV

Part I cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
5.3.3 Monitoring - RF power - Modulation - Off-air audio	73.51	Determined power - AM
	73.267	Power - FM
	73.688	Indicating instruments, TV. See also 73.1215.
	73.691	Visual Modulation Monitoring - TV
5.4 Maintenance of log	73.1226	Availability of logs and records to FCC
5.5 Weekly records	73.1580	Weekly inspection of transmitting system and all required monitors
5.6 Antenna maintenance	73.1213	Antenna structure, marking and lighting, use by more than one licensee.
	Part 17	Construction, Marking and Lighting of Antenna Structures

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
6.0 Auxiliary transmitting systems	73.1665	Main transmitter to comply with technical requirements
6.2.1 Main transmitter		Authorized Power Vs. Max. Rated Tx Power 0.25, 0.5 or 1kW — 1kW 2.5kW — 5kW 5 or 10kW — 10kW 25or 50kW — 50kW
6.2.2 Auxiliary transmitter a. Alternate Tx b. Standby Tx c. Emergency	73.1670	Auxiliary transmitters (c)(1) Frequency and tolerance as authorized (c)(2) Regular frequency checks (c)(3) May use reduced power See also 73.51, 73.267, 73.567, 73.663.
6.3.1 Location of standby Tx - AM, FM and TV		
6.3.2 Emergency		
6.4.3 Location of main and alternate transmitters - Must broadcast call sign, nominal and actual location of standby site used	73.1670 (a)	Auxiliary transmitter for use other than with main antenna system
	73.1675 (a)	Auxiliary antenna may be at separate site
	73.1680 (a)	Emergency antenna may be used without prior authority

Part I cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
7. Guidelines for call sign assignment Series available when requested.	73.3550	Requests for new or modified call sign assignments
	Part 1	Schedule of Fees

DOC DOCUMENT - RULES AND PROCEDURES
PART II - APPLICATION PROCEDURES FOR
AM BROADCASTING
TRANSMITTING STATIONS

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
Section B		
1. Application procedure	73.3500	Application and report forms
1.2 Requirements (1) Technical Construction and Operating Certificate (2) Broadcasting licence (from CRTC)	73.3511	Applications required
	73.3512-16	Where to file, signing authority, content, specification of facilities
1.3 Retention of consultant Submit DOC Form 16-653 Consultants have useful experience and data	No requirement for, nor recommendation of, use of consultant.	
1.4 Application processing Missing information to be requested and supplied When all approved construction authorized	73.3571	Processing of AM broadcast station applications.
	73.3572	Processing of TV broadcast station applications.
	73.3573	Processing of FM broadcast station applications.
	73.3580	Local public notice required
	73.3593	Designation of hearing mandatory re. application for construction permit
	73.3594	Public notice of hearing required.

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
1.5 On-air Approval Submission of data re. structural adequacy of antenna Preliminary or Final Proof of Performance	73.33 AM Antenna system: site, details, performance expected, to be submitted. 73.45 AM Antenna systems for new, additional or different facilities data necessary 73.153 Field strength measurements in support of AM applications 73.154 Proof of performance AM directional antennas.
1.6 Application for Call Sign Apply with application for TC & DC See General Rules Section 7 "Guidelines for the Assignment of Call Signs to AM, FM and TV Broadcasting Stations"	73.3550 Call signs - new or modified - basis for assignment

1.7 Classification and maximum power

Class	Max. Power	Class	Max. Power
A	50 kW	I	50 kW
B	50 kW	II	50 kW
C	1 kW	III	5 kW
Low power	.05 kW	IV	.25 kW

1.8.5 Carrier current station Service in limited area via power line or leaky cable. No protection from interference, must take action if interfering with others.	90.242 Traveller's Information Service, 530 and 1610kHz. Site, interference, output power, frequency tolerance maximum field strengths, antenna height and characteristics polarization etc.

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
2. Content of Brief		
2.3.2 Discussion of: - choice of frequency - location of site - prospect of interference - maximum and minimum field strengths for metropolitan areas - daytime rural service - night time service	73.183 73.185 73.186 73.187	Groundwave determining interference. Computation of interference Establishment of field at 1 mile. Limitation on daytime radiation.
2.3.3 Assumptions and source of information - ground conductivity - existing limitations - combination of interfering signals	73.190 Fig. R3	Ground conductivity
2.3.4 Groundwave interference analysis General analysis Summary of detailed study	73.184 73.183	Groundwave field strength charts Groundwave interference
2.3.5 Skywave interference - General analysis - Summary of detailed study	73.189 73.190	Field strength requirements Engineering charts
2.3.6 Image interference Locations and frequencies with potential for image interference to be avoided or - Choice of frequency to be justified - Probable number of receivers - Commitment to remedy problems	Image interference is not considered under FCC rules.	

Part II - B cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
2.3.7 Intermodulation/cross modulation Assess probability of interference from these sources	90.242	Intermodulation and cross modulation to be considered with respect to Traveller's Information Stations.
2.3.8 Other significant information - Transmitter type approved - Audio feed - Re-broadcast operations	73.182	Engineering standards of allocation (Classification of stations.)
	73.1207	Rebroadcasts
2.3.9 Qualification of engineers - At least one to have considerable experience.	No requirement specified.	
2.4 Description of Antenna System and Array - data per Canada/USA Agreement - type of each element.	73.45	AM Antenna systems, new, additional or different.
	73.150	Directional antenna systems
	Part 17	Construction, Marking and Lighting of Antenna Structures
2.5 Horizontal Field Strength Patterns - methods for calculating patterns, expanded, modified.	73.183	Groundwave signals, interference.
	73.184	Groundwave field strength charts
	73.150	Pattern formulae
2.8 Factors distorting pattern - anticipated abnormalities - proposed corrective measures.	73.152	Modification after construction of directional antenna data

Part II - B cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
2.9 Interference Analysis		
2.9.1 Groundwave interference analysis - protection rules, ground conductivity curves, methods of calculation.	73.185 73.184	Computation of interfering signal Groundwave field strength charts
2.9.2 Skywave Interference Analysis - protection rules - skywave curves - methods of calculating	73.185 73.190	Computation of interfering signal Engineering charts
3. Final Proof of Performance for Directional Antennas		
3.2 Field strength at 1 km readings on eight or more radials at spacing of: 200 m - up to 3 km 1 km - 3 km to 10 km 3 km - beyond 10 km Determine effective field. Compute antenna pattern and operating impedances at carrier ± 30 kHz Record antenna currents.	73.186	Establishment of field strength at one mile, eight or more radials at spacing of: 0.1 miles - up to 2 miles 0.5 miles - 2 to 6 miles 2.0 miles - 6 to 15 or 20 miles and more if needed. Provision for other spacing in congested areas. Determine effective field as defined in 73.14.

Part II - B cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
3.3 Performance of directional antennas	73.150
3.3.1 Description of antenna array a. Number of elements b. Element type c. Details of top loading d. Overall height e. Orientation of array f. Phasing g. Ground system h. Antenna currents each element, current and impedance at common point i. Phase readings	(4) i. Number of elements ii. Element type iii. Details of top loading iv. Height of radiating portion v. Overall height each element vi. Sketch of site (5) i. Relative amplitudes of fields ii. Relative phasing iii. Phase spacing iv. Assumptions re. height, current distribution, ground conductivity. v. Formulas used. (6) Precision required. (7) Additional data
3.3.2 Horizontal field strength patterns to be plotted showing: a. Directional field strength at 1 km and effective from antenna b. True north at zero azimuth c. Direction and field strength and call signs of stations to be protected.	73.150(1) Standard radiation pattern for proposed antenna based on theoretical radiation pattern (2) Required details 73.152 Modified standard radiation pattern based on field measurements shown per 73.150(2) 73.185 Computation of interfering signal (a)(2) Calculated values used to compute interference with domestic stations (a)(3) Notified radiation used to compute interference with foreign stations

Part II - B cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
4. Preliminary proof of performance for directional antennas	
4.2 Required field strength data 1. Field strength, 15 degree intervals, convenient distance from transmitter, compared with non-directional data 2. Pattern size from readings to 16 km along one radial in major lobe. 3. Antenna operating and self impedance.	73.154 Proof of performance for directional AM antennas at least 10 measurements on all radials within 2 to 10 miles
4.3 Showing of no-interference if protection required	
5. Final proof of performance non-directional antennas	There does not appear to be any requirement for Proof of Performance for non-directional antennas.
5.2 Class A & B stations, field strength measurements on eight radials at: 200 m - up to 3 km 1 km - 3 to 10 km 3 km - more than 10 km. Antenna impedance Antenna resistance and readiance Antenna current during tests	73.33(b) ". . . . If a station is using a directional antenna a proof of performance must also be filed." 73.151 Field strength measurements to establish the performance of AM antennas, minimum requirements.
5.3 Class C Stations, field strength measurements As in 5.2 except two radials to 0.5 mV/m contour	73.185(h) For non-directional antennas compute vertical distribution of field in accordance with 73.160.

Part II - B cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
5.5 Plot of field strength showing: Contours for 1000, 250, 25, 15, 5 and 0.5 mV/m Ev and 20% Ev.	Not required by FCC applications approved on the basis of computed data.
6. Preliminary proof, non-directional antennas	Not required by FCC applications approved on the basis of computed data.
6.2 Tabulate minimum of 10 readings of field strength on one radial Plot of data as in B 5.2	
7. Supplementary proof of performance (directional antennas only)	73.61(a) Field strength measurements at monitoring points each month
7.2.1 Shape of pattern from field strength at 15 degree intervals	(b) Partial proof of performance whenever a licensee suspects antenna not operating as authorized.
7.2.2 Size of pattern from field strength 200 m to 16 km in major lobe	(b)(2) Partial proof of performance may be required by the FCC.
7.2.3 Impedance characteristics	73.154 Directional antenna partial and skeleton proof of performance field strength measurements, at least 10 measurements of field strength on all radials within 2 to 10 miles of antenna
7.2.4 Plot of data	
7.3 Documentation	
7.4 Test equipment specifications	

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
8. Applications for low power and carrier current systems power up to 50W	73.182(a)(4) Approximate method for determining effective fields for Class IV stations.
8.1 Low power broadcast show: a. No interference b. Adequate signal c. Day and night service equivalent. Transmitter meets RSS 150.	Class IV stations do not have an area protected from interference.
8.2 Carrier current system a. Provide data on: - location - frequency - type of equipment b. Equipment meets CSA C22.2 No. 98 c. Performance adequate d. No interference expected e. Transmitter meets RSS 158	90.242 Traveller's information stations - outside 0.5 mV/m contour of adjacent AM channel - power, antenna, transmitter type
8.2.2 Proof of performance Show field strength outside property 15 uV/m max. at distance d metres where: $d=\frac{48000}{f}$ f=frequency in kHz	

Part II cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
Section C		
1. Antenna and Ground Systems		
1. Vertical radiators (mostly)		
2. 1/6 wavelength < 5/8 wavelength		
3. Top loading undesirable must be symetrical and < or = 1/8 wavelength equivalent		
4. Structural adequacy certified		
5. Antennas painted and lighted.	73.1213	Refers to 17.47-56 re. structure, marking and lighting
6. RF components protected against accidental contact	73.49	AM transmission system fencing requirements
7. Ground system 120 radial wires minimum 1/4 wavelength 10 guage buried < 20 cms	73.189(b)(5)	Not less than 90 radial wires (120 recommended)
8. Consider ground conductivity, choose flat site.		

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
2. Ground Conductivity	
2.1 Mapped in Canada as "Ground Conductivity Map for MF Broadcasting Band"	73.190 Figure R3 "Estimated Effective Ground Conductivity in the United States
2.2 Unmapped areas use adjacent or calculated values	
2.3 Mapped in U.S. as "Estimated Effective Ground Conductivity in the United States"	
2.4 International border is a conductivity boundary	
2.6 Determination of contours, use of other than map data resoluation of conflicts	

Part II - C cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted
3. Maximum and minimum field strengths - metropolitan areas	
3.1 Requirements Typical minimua: 25 - 50 mV/m business areas 5 - 10 mV/m residential	
Maximua: - prevent blanketing - avoid interference from non-linear contacts	73.24(g) Population within: IV/m contour maximum 1% of population within the 25 mV/m contour 73.88 Blanketing interference within IV/m contour, licensee responsible
3.2 Site selection	
1. 25 mV/m and night time RSS limitation contour to enclose metropolitan area if possible 2. Failing 1 at least 50% of area and if night-time RSS limitation less than 5mV/m, day and night 5 mV/m contours as close to coincident as possible 3. Night-time RSS limitation < 25 mV/m require supporting data 4. Population with 25 mV/m contour one person/watt max. and not to exceed one-third of total 5. Minimum buildings and population with IV/m contour.	73.4160 Night-time service areas

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
4. Skywave Protection In accordance with RAMFBC-RZ and Annex 2, Chapter 4 of Canada/USA bilateral agreement. Submissions must consider interference within the night-time groundwave contour as well as transmitter site protection	73.182	Engineering standards of allocation, daytime and nightime for all classes of stations.
5. Night-time protection of groundwave service area		
5.1 For domestic use protection from interference from adjacent channel need not exceed that from co-channel stations.	73.182	See above.
5.2 Night-time contour Class A - 0.5 mV/m Class B & C - smaller areas enclosed by 0.5 mV/m or 20% Ev contour		
5.3 Permissible interference Frequency Separation / Maximum Signal 10 kHz / 0.5 mV/m 20 kHz / 15 mV/m	73.37	Protection to be given, overlap of AM coverage contours.

Part II - C cont'd

DOC Requirement	Equivalent U.S. Rule, FCC Or NTIA As Noted	
6. Lock-in of groundwave service area of second adjacent channel stations		
6.1 Nature of potential problem		
6.2 Handling of applications where problems would occur		
7. Image interference		Image interference not taken into account in general in allocations of frequencies
7.1 Nature of potential problem		
7.2 Proposals predicated on image relationship		
8. Intermodulation and cross-modulation interference		
8.1 Nature of problem		
8.2 Special requirements on application for licence.		
9. Departures from RAMFBC-R2 and Canada/US Agreements for domestic use in Canada	73.183	Groundwave signals - Interference by a proposed station to an existing station to be based on measurements, etc.
Nature of problem Justification required for departure from agreed standards	73.184	Groundwave Field Strengths.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
3.1 FM	
3.1.1 Calculate all third order intermodulation products.	73.209 No protection from interference other than by required spacing of FM stations except for station licensed as commercial educational stations
3.1.2 If IM products fall within 200 kHz of FM channels allotted or received estimate and report population potentially affected (see Rule 19 for details)	73.509 Prohibited Overlap Protection from and to non-commercial educational FM stations. U.S. stations subject to provisions of Canada/US agreement of 1947 re. FM Broadcasting and NARBA.
3.2 TV	
3.2.1 Determine population within applicant station contours viz. Channels 2-6 105 and 120 Channels 7-69 115 dBu	
3.2.2 Check for overlap of Grade A & B contours of first and second adjacent VHF and first through fifth adjacent UHF channels	
3.2.3 If overlap area populated list assigned and allotted channels affected. Estimate population and map overlap per Rule 19 3.2.3.1 through 3.2.3.3(b).	
3.2.4 Provide rationale for station parameters	

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
4. Broadcaster's responsibility Outside: FM - 115 dBu contour TV Channels 2-6 outside 120 dBu contour Channels 7-69 outside 115 dBu contour Inside: Must correct for adverse effects.	

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Ghosting anticipated due to reflection of TV signal by a proposed tower to be considered by consultants for existing and proposed installation. If interference results onus in on new installation to correct.	Protection from ghosting interference is not specifically provided for but Rule 73.612(b) states: "When the commission determines that grant of an application would serve the public interest, convenience and necessity and the instrument of authorization specifies an antenna location in a designated antenna farm area which results in a mileage separation less than those specified in this subpart, TV broadcast station permittees and licencees shall be afforded protection from interference equivalent to the protection afforded under the minimum mileage separations specified in this subpart."

BP-4 - PREPARATION OF TECHNICAL SUBMISSION FOR FM STATIONS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
4. d. Transmitter and ancillary equipment type and characteristics	73.1665	Main transmitter must be type accepted.
e. Description of antenna system	73.316	FM Antenna systems, polarization, directivity
f. Service ara contours	73.311	Field strength contours 70 dBu and 60 dB7
g. Interference analysis	No provision except in 73.209(c)	
5. Particulars of site and antenna structure	73.312	Topographic data required
	73.316	Antenna systems, limitation on use of directional antennas
6. Drawing of tower, system block diag.	73.3514	Content of applications
7. Vertical radiation pattern	73.333	Engineering charts (FM)
8. Horizontal pattern	73.313	Prediction of FM station coverage
9. Profiles of ground elevation	73.312	Topographic data
10. Maps	73.3514	Content of applicatins

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
1.3.8 Service Contours Channels / Grade A / Grade B 2-6 / 68 dBu / 47 dBu 7-13 / 71 dBu / 56 dBu 14-69 / 74 dBu / 64 dBu	73.612 Protection from interference - none except as provided by frequency allocations and in (b) below
2.2 Permissible interfering signals VHF Ch 2-6 dBu / Ch 7-13 dBu No offset: 15 / 24 10 or 20 kHz offset: 43 / 41 Precision offset: 39 / 48	(b) "When the commission determines that grant of an application would serve the public interest, convenience and necessity and the instrument of authorization specifies an antenna location in a designated antenna farm area which results in a mileage separation less than those specified in this subpart, TV broadcast station permittees and licencees shall be afforded protection from interference equivalent to the protection afforded under the minimum mileage separations specified in this subpart."

BP-5 - cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
2.5 Canadian-US Separation kms	As for DOC
2.5.1 VHF	73.699 Figs. 9 through 10e. Field strength versus transmitting height and terrain roughness.

Frequency Relationship	Separation km
Co-channel	
Zone 1 or 2 Can.	275 Zone 1 USA
Zone 2 Can.	305 Zone 2 USA
Zone 1 Canadian	275 Zone 2 USA
1st adjacent	95

2.5.2 UHF

Frequency Relationship	Separation km
Co-channel	250 Zone 1 USA
Zone 1 or 2 Can.	280 Zone 2 USA
Zone 2 Can.	250 Zone 2 USA
1st adjacent (N±1)	90
Intermodulation (N±2,3,4,5)	30
Local Oscillator (N±7)	95
I.F. B t (N±8)	30
Sound Image (N±14)	95
Picture Image (N±15)	120

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
3. (a) Modulation for main channel L & R	
(b) Sub-carrier modulation of main 8-10% at 19 kHz	
(c) Stereo sub-carrier 2nd harmonic of pilot with coincident zero crossings	
(d) AM of stereo sub-carrier	
(e) Stereo sub-carrier suppressed to less than 1% of main	
(f) 50-15,000 Hz modulation stereo sub-carrier	
(g) Modulation signal of stereo sub-carrier (L-R)	
(h) Identical pre-emphasis stereo sub and main channel	
(i) Sum of side bands of stereo sub-carrier to cause 45% of total modulation for L (or R) alone: simultaneous deviation in main channel 45%	
(j) Total modulation meets all standards of good engineering practice for FM mod 88-108 mHz	
(k) With positive left signal only deviation of main carrier is upward stereo signal resulting from sum of side band signals in phase with sub-carrier causing an upward deviation of main carrier.	
(l) Ratio of peak main channel deviation to peak stereo sub-channel deviation unity ± 3.5% for left (or right) only at all levels and frequencies 50-15,000 Hz	
(m) Phase difference main and stereo ±3 degrees for left (or right) alone 50-15,000Hz	

BP-6 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
(n) Cross-talk into main sub-channel from stereo 40 dB below 90% modulation	
(o) Cross-talk into stereo from main 40dB below 90% modulation	
(p) For transmission performance the reference modulation shall be 90% rather than 100%	
(q) Electrical performance referred to 100% modulation	

BP-7 SUBSIDIARY COMMUNICATION MULTIPLEX ON FM BROADCAST

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
3.1 Any form of modulation may be used on SCMO sub-carrier	
3.2 More than one subsidiary communications (SCMO) sub-carrier provided that: - instantaneous frequencies of SCMO sub-carriers 53-99 kHz during transmission - for no transmission SCMO sub-carriers 20 to 99 kHz	73.319(a) FM Multiplex (SCO/SCMO) Sub-carrier Technical Standards. The technical specifications in this section apply to all transmissions of FM multiplex sub-carriers except those used for stereophonic sound. (For these see 73.322)
3.3 During stereo or mono transmission modulation due to sum of all SCMO below 76 kHz 10% (7.5 kHz peak) and modulation due to sum of SCMO above 76 kHz 10% and modulation due to sum of all SCMO 20%	Standards allow any form of modulation for sub-carrier operation, covers sidebands, sub-carrier injection suppression and spurious and harmonic radiation and sets out conditions governing installation of sub-carrier generators.
3.4 When no program modulation due to sum of SCMO above 76 kHz - 10% modulation due to sum of all SCMO 30%	
3.5 When SCMO subcarriers transmitted total peak modulation over 100%. For each 1% modulation produced by sub-carrier injection main channel modulation may be increased by 0.5%. Peak modulation of main 100% (82.5 kHz deviation).	
3.6 During program transmission cross-talk 50-15,000 Hz down 60 dB	

BP-10 REQUIREMENTS FOR ESTABLISHMENT OF MDS-TV BROADCAST, 2500-2686 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
3. Band shared with radar use by DND. EIRP limited to 32 dBW and maximum antenna height 200 m EHAAT.	Technical Standards FCC Rules Part 21, Subpart 'K'. FCC Rules and Regulations Part 25 applies together with agreements between Canada and the U.S.A.
3.2.1 C.O. of radar station to have remote control of TV transmitter for installations within 150 km radar sites specified.	
3.3.1.2 No assignments in band 2500-2554MHz within 200 km of radar site and stations outside this radius are secondary to DND on this band.	21.901(d) Frequency bands 21.905 Emissions and bandwidth
4. Assignment and protection criteria	
4.1 Max. EIRP 32 dBW for each 6 MHz channel.	21.904 Maximum transmitter power 10 watts except for special circumstances when 100 watts will be allowed.
4.2 Except in special cases maximum EHAAT 200 m over 200 m EIRP reduced 1 dB per 25 m to maximum of 5 dB at 325.	Antenna heights limited by Part 17.
4.3 Transmitter to meet TRC-71 except in areas of low spectrum demand other transmitters may be approved.	21.101 Transmitter Frequency Tolerance .005% for fixed stations 21.908 Sets out emissions splatter limitations.
4.4 Omnidirectional or directional antennas acceptable. Linear polarization and subject to constraints near U.S. border either vertical or horizontal, orthogonal emission down 22 dB or wanted.	21.906 Transmitting and receiving antenna requirements including directivity

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
4.5 Receiver characteristics Antenna gain -22 dBi Front to back -20 dB Orthogonal discrimination -16 dB main beam - 6 dB side lobes Down converter noise figure - 6 dB	21.906(d) Sets out receiving antenna requirements.
4.6 Protection criteria All other assignments to be protected. For channel designations see BP Table 1. Broadcast channels shared on secondary basis may be used when all primary best channels assigned. Protected contour 66 dB, 50 km or U.S. border.	21.902 Deals with interference and protection requirements.
4.6.2 C/I ratios Co-channel: No offset 45 dB; Offset 28 dB First adjacent: No offset -3 dB; Offset -3 dB	No specifications
4.6.3 Adjacent channel station within protected contour to use orthogonal polorization maintain field strength 20 dB down.	No specifications

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
5. International co-ordination	
5.1 Within about 80 km of U.S. border special conditions apply.	
6. Service contour and coverage predictions.	
6.1 Service contour 66 dBu normally line-of-sight.	
6.2 EIRP and antenna height to be selected to limit contour.	
(See BP for details of application, processing procedures.)	

BP 13 - PROTECTION AND COVERAGE FOR PRIMARY FM BROADCAST STATIONS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
3. Allotment principles	
3.1 Protected contours	
Station Class A: EIRP 3 kw, EHAAT 100 m; Distance 33 kms; Field Strength 0.5 mV/m Class B: EIRP 50 kw, EHAAT 150 m; Distance 65 kms; Field Strength 0.5 mV/m Class C1: EIRP 100 kw, EHAAT 300 m; Distance 86 kms; Field Strength 0.5 mV/m Class C: EIRP 100 kw, EHAAT 600 m; Distance 97 kms; Field Strength 0.5 mV/m	73.209 No protected contours. Protection based on assignment, separation, transmitted power and antenna heigths except protection from non-commercial educational FM per 73.509 and as specified below. "When the commission determines that grant of an application would serve the public interest, convenience and necessity and the instrument of authorization specifies an antenna location in a designated antenna farm area which results in a mileage separation less than those specified in this subpart, TV broadcast station permittees and licencees shall be afforded protection from interference equivalent to the protection afforded under the minimum mileage separations specified in this subpart." 73.210 Station classes authorized in Zones Class A, B1 & B - Zone I and IA Class A, C2, C1 and C in Zone II.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
3.2 Protection ratios and permissible interfering signals.	73.211 Power and antenna height and coverage requirements for the classes of stations in 710 above.
73.212 Specification of FM transmitter output power and effective radiated power on station authorizations	
73.213 Grandfathered short spacings.	

Channel Relationship	D/V Protection Ratio dB	Interfering Signal mV/m
Co-channel	20	0.05
First adjacent	6	0.25
Second adjacent	-20	5.0
Third adjacent	-40	50.0

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
3.3 Minimum separation Distances (in km) between Co-channel and Adj. Channel Assignments	73.202 Channel assignments tabulated by state and city. Communities within 10 miles of listed cities may apply.

Class			Class A	Class B	Class C1	Class C
CHANNEL	A	Co-channel	132	206	239	254
		200 kHz	85	132	164	182
		400 kHz	45	76	98	109
		600 kHz	37	69	90	101
		10.6/10.8 MHz	8	16	32	32
	B	Co-channel		237	271	286
		200 kHz		164	195	214
		400 kHz		94	115	126
		600 kHz		74	95	106
		10.6/10.8 MHz		24	40	40
RELATIONSHIP	C1	Co-channel			292	307
		200 kHz			217	235
		400 kHz			134	144
		600 kHz			101	111
		10.6/18.8 MHz			48	48
	C	Co-channel				318
		200 kHz				246
		400 kHz				155
		600 kHz				115
		10.6/10.8 MHz				48

73.207 Minimum separation (see Rule for full details). Three tables are given:

Table 1 gives separation distances for allocation and assignment purposes between FM stations in the United States.

Table B gives separation distances for the same purposes but between Canadian FM stations and U.S. FM stations.

Table C covers Mexican - U.S. station separations.

In some cases the distances in Table B are greater than in Table A.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
3.4 Short spaced allotments and assignments Where interference zones result from assignments following Plan limited parameters are to be used. See BP for details.	73.213 Stations at spacings below minimum separations, power and/or antenna height restricted. See Rule for details.
3.5 Channels separated by 800 kHz Co-location recommended.	
5. Directional antennas may be used	
6. Transmitter locations to be outside populated areas.	

BP - 22 LOW POWER TV BROADCAST STATIONS

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted	
1.2	International co-ordination Assignments within 32 kms of U.S. border require acceptance by FCC. Assignments within 40 kms of St. Pierre and Miquetor require acceptance by France.	74.701	A low power TV broadcast translator station retransmits programs and signals of a TV broadcast station.
2.1	Coverage Within Grade A or Grade B contour. Grade B contour limited to 12 km.	74.737	Antenna location preferably within 8 km of area to be served.
2.2	Power: To limit Grade B to 12 km with HAAT 30 m i.e. Channel 2-6-50W: 7-13-400W: 14-69-5000W	74.735	On channels listed for location (see 73.606(b)) up to .1 KW VHF except .2kW with circular polarization UHF stations 1kW peak except 2 kW with circular polarization.
2.4	Transmitter Peak visual output - 50 W - VHF 500 W - UHF Transmitter type approved per RSS 151 or 154 Translators per RSS 155 or 157.	74.750(a)	Transmitter to be type approved (See comparative requirements under RSS 151 and 154)

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
2.5 Broadcast relays Description required No protection from interference No interference with existing or future broadcast service (except subsequently authorized relay)	
2.6 Limitations of 2.2 and 2.3 may be relaxed in difficult terrain provided that: Grade B contour limtied to 12 km Existing stations and allotments protected	74.707 LPTV will be protected from interference from other LPTV and translator stations. See Rule for details.
3. Interference to and from	
3.1 No protection from and no interference with any other services except subsequently authorized LPRV.	
3.2 Interference deemed not to exist if technical criteria of section 4 met.	
3.3 LPTV may be required to take action to remedy interference including frequency change or cessation of operations.	74.703(f) Interference Involving TV Translators & Boosters Licensee of LPTV to correct any condition of interference at his expense. See Rule for details.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
4. Choice of channel	
4.1 Channel / Freq. MHz VHF 2-6 — 54-88 7-13 — 174-216 UHF 14-69 — 470-806	74.709 Land mobile stations sharing TV channels 14-20 inclusive are to be protected from LPTV caused interference. See rules for details.
4.3 Protection criteria	74.705 Protection Criteria

Channel Relationship	Protection Ratio: No offset of N/A dB	Protection Ratio: With Offset dB
VHF Co-channel	35	25
VHF 12 adj.	-16	-
UHF co-channel	28	18
UHF 1st adj.	-16	-
UHF ±2 ±3 ±4 adjacent	No overlap of 100 dBu contours*	
UHF ±7th adj.	No overlap of 74 dBu contours	
UHF ±14th adj.	-28 dB	
UHF ±15th adj.	-10 dB	

* Could be co-located with similar parameters.

Following sites not acceptable:

1. Within protected contour of co-channel or first adjacent channel of TV station except 4 and 5 and 13 and 14 and not considered adjacent.
2. Within protected contour of UHF TV station 14 or 15 channels below proposed channel.
3. Within 100 km of UHF TV station 7 channels below proposed.
4. Within 32 km of UHF TV station ±2, ±3, ±4 or ±5 channels from proposed.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

Protection Criteria cont'd

74.705 TV broadcast station protection

Channel Relationship	Protection Criteria No Offset or N/A dB	Protection Criteria With Offset dB
Co-channel	45	28
VHF TV Stn. one above LPTV	6	-
VHF TV Stn. one below LPTV	12	-
UHF TV station one below LPTV	15	
UHF TV St. 14 below LPTV	23	
UHF TV Stn. 15 below LPTV	6	

5. Quality of broadcast signal
   Provide S/N ratio of link

6. Coverage prediction

   Present coverage prediction in tabular form and by map.

   For additional details re. application procedure and data in brief see BP.

BP - 25 STEREO AND MULTIPLEX SUB-CARRIERS FOR TV STATION

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
1.2 Uses a. stereo, biphonic, quadraphonic etc. sound programs b. relaying broadcast, cueing order messages etc. c. pilot or control signals for noise reduction etc.	73.682(a) (21), (22) and (23) also (b) and (c) Cover control tones, cuing, stereo, biphonic and quadraphonics, pilot and control signals.
1.3 Operation to be on a non-interference basis and transmissions must comply with requirements of BP 15	
3. Application requirements	
4. Changes in equipment.	
4.1 Additions to approved equipment acceptable.	
4.2 Conditions a. Sub-carrier generator compatible b. Transmitter manufacturer accepts modification and work done by competent personnel c. Performance after modification meets this BP, BS15 and TRC70 d. Transmitter re-certified.	

BS 11 REQUIREMENTS FOR THE ESTABLISHMENT OF A TV STATION

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Required Data - Applicant - Location, station and antenna - Technical details on transmitter and associated monitors - Antenna, type, gain, e.r.p. - Radiation pattern, A & B contours - Topographic details - Engineering standards	73.3513	Signing of application
	2,1061	Submission of technical information for application reference . . . . An application for station authorization . . . . may refer to technical information so filed.
	73.3533	Application for construction permit per FCC form 301.
	73.607	Availability of channels
	73.614	Power and antenna height requirements.
	73.682	Transmission's standards
	73.683	Field strength contours
	73.684	Prediction of coverage
	73.685	Transmitter location and antenna system

BS 13 ANCILLARY SIGNALS IN THE VERTICAL BLANKING INTERVAL FOR TV BROADCAST

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Categories of signals	
1. Maintenance of signal quality.	73.646 Kinds of services that are permited in the vertical blanking interval. See Rule for list.
2. Monitoring and control.	73.682(a)(21) to (22) inclusive Set out the requirements for the use of the TV blanking interval from line 17 to 21.
3. Reception by general public.	73.682(a)(23) Covers the transmission of telecommunications signals and other purposes on lines 10-18 and 20 are of field 2 and 1.

BS 14 TELEVISION BROADCAST VIDEOTEXT

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Full technical details relevant to Videotex system.	For FCC requirements see the notes across from B.S. 13.

BS 15 MULTICHANNEL TV SOUND

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Transmission standards Instantaneous frequency 15kHz - 120kHz.		
Application of subcarriers 15.734Hz used for stereo	73.665	Use of TV aural baseband subcarriers for stereophonic (Liphonic, quadraphonic, etc.) sound programs.
	73.667	Subsidiary communication services. See Rule for allowable services.
Aural baseband Above 120kHz attenuated 40dB	73.669	TV stereophonic aural & multiplier carrier operation.
For MTS main aural transmission to meet M/NTSC	73.682(c)	Sets out the TV Multiplex subcarrier/stereophonic aural transmission standards for details. See the rule which is not so detailed as BS15.
Total modulation of main carrier ±25kHz		
Non-multiphonic audio not to exceed ±50kHz of aural carrier		
Total modulation of aural carrier ±75kHz max.		
Aural transmission down 25dB 120KHz to 240kHz off carrier and 35dB 240 to 600 kHz off.		

BS 15 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
BTSC - Stereo Sound Main channel modulation (L+R) Subcarrier modulation (L-R) DSB modulation of 2nd harmonic of horizontal line rate.	
BTSC - Second Audio Fifth harmonic of horizontal line rate frequency modulated, 10kHz peak, 50-10,000Hz modulates aural carrier ±15kHz.	
BTSC sound encoding to have fixed pre-emphasis, spectral compression and overmodulation protection (see details BS-15)	
BTSC subsidiary communications Max. modulation ±3kHz Subcarrier frequency 6.5 times line frequency if stereo and second audio transmitted, 47-120kHz if stereo only.	

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

Transmission system requirements

Stereo

- Must handle ±73kHz, 100kHz capability recommended
- Pilot subcarrier locked to horizontal line frequency
- Aural transmitter to handle 50 to 120,000Hz
- Stereo subcarrier phase locked to pilot
- Unmodulated subcarrier suppressed to ±.25kHz max. deviation of main carrier.
- Harmonic distortion

Frequency (Hz)	Distortion (%)
50- 100	3.5
100- 7,500	2.5
7,500-15,000	3.0

- L to R balance
  Either channel alone produces 50% modulation
- Separation of (L+R) and (L-R) at 10% modulation, 30dB from 100 to 8000Hz smoothly decreasing below to 26dB at 50Hz and above to 20dB at 14,000.
- Crosstalk into main channel from non-stereo signal down 60dB
  Crosstalk into stereo subchannel from main -40dB max.
  Crosstalk into stereo subchannel by another multiplex signal -60dB.
- Noise modulation of aural system -58dB below 100% modulation and -55 in stereo sub-channel.

BS 15 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Second Program - Aural transmitter to handle ±73kHz ±100kHz capacity recommended - Bandwidth 50-120,000Hz - Subcarrier fifth harmonic of line frequency locked when unmodulated within 500Hz other. - FM of subcarrier - Carrier off when no second audio - Total harmonic content 4% - Crosstalk into SAP sub from main or stereo sub -50dB - FM noise down 50dB	
Electrical performance - Video Per RSS 154 except min. attenuation 24dB at 4.5 MHz for stereo and/or second audio operation.	
Electrical performance - Sound Encoding Equivalent input noise of the sound encoder over 15kHz band down 70dB on 100Hz level.	

BS 15 cont'd

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted
Modulation level - Audio, frequent peaks		
Monophonic only	±25kHz	
Stereo sum	±25kHz	
Stereo sum plus stereo difference	±50kHz	
Pilot	± 5kHz	
SAP subcarrier	±15kHz	
Non-program carriers	± 3kHz	
Total	±75kHz	

NOTICES TO BROADCAST CONSULTANTS
NUMBERS 18, 37, 46 and 48A

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
These notices provide information to consultants with respect to matters of interest. They do not constitute standards and hence are not considered further.	There is no equivalent FCC rule.

RIC 4 RADIO EQUIPMENT ACCEPTED FOR LICENSING IN THE G.R. SERVICE

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
FCC approved equipment now may be used in Canada.	There is no corresponding acceptance of Canadian approved equipment in the U.S.

RIC 8 COMMON CARRIER SERVICE FOR RADIO PAGING

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Eligibility - Providers of general land mobile service extension of land telephone service - Restricted common carrier land mobile services - Other companies establishing capability.	90.490(a-c) Approximately equivalent eligibility criteria to DOC. 90.492 Frequencies Available frequencies listed are all above the bands assigned for Canadian use but 2(c) of RIC-8 suggests band 148-150.8 may have been added.
Frequencies MHz 35.22 35.58 43.22 43.58 152.48 157.74 163.44 167.10 454.10 454.35 459.10 459.35	**Frequencies** 22.501(1) Frequencies Available 35.26MHz 35.46MHz 35.30 35.50 35.34 35.54 35.38 35.62 35.42 35.66 22.501(2) Maximum EIRPs and power reduction table given. See Rule for details. (4) 43.26MHz 43.46MHz 43.30 43.50 43.34 43.54 43.38 43.62 43.42MHz 43.66MHZ (5) Interference study is required of applicants proposing 43MHz systems. For details see Rule.

RIC 8 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Other frequencies for one-way paging on a secondary basis to land mobile two-way service also available.	
Type of emission - A2, A3, F2, F3.	
Power - no more than 500W.	

RIC 10 INFORMATION RE. LAND AND MOBILE
138-144, 148-150.8MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
This circular gives information on the level of use of various frequency bands and make recommendations for shared use by allowing predominantly urban uses on a secondary basis in bands where the primary use is mainly rural. This is a purely internal document applicable to Canada only.	Part 2 Frequency Allocation Table by Footnote G30 - The bands 138-144, 148-149.9 and 150.05-150.8MHz. The fixed and mobile services are limited primarily to operations by the military services. The band 149.9-150.05MHz is allocated to the radio navigation satellite service.

RIC 12 REVISED MARITIME MOBILE BANDS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Table shows results of the ITU re-arrangement of the subdivision of the frequency bands between 4000 and 27,500kHz assigned exclusively to the Maritime Mobile Service.	An international arrangement implemented through Part 83 - Stations on Shipboard in the Maritime Services.

RIC 13 TRANSMITTING FREQUENCIES MARITIME MOBILE
158-174MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel designator, ship and coast transmitting frequencies, function and type of traffic in the band 158-174MHz.	Many frequencies assigned to equivalent traffic in U.S. and Canada. Both countries use frequencies in accordance with the Hague Plan brought up to date in ITU Appendix to the Radio Regulations. For U.S. usage see Part 83.

RIC 14 SHIP-SHORE AND INTERSHIP SSB
1605-23,000KHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
This document records the jointly prepared Can./U.S. allocation of maritime mobile frequencies in the 2MHz band.	Covered in Part 83 - Stations on Shipboard in the Maritime Services.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
RIC 20 GUIDE FOR EXAMINERS FOR OPERATORS CERTIFICATES Internal document with no international significance.	Part 13 Commercial Radio Operators Internal document with no international significance.
RIC 39 IMPLEMENTATION IN CANADA OF 25kHz CHANNELLING OF AERONAUTICAL MOBILE EN ROUTE BAND Information refers to the outcome of Canadian/U.S. negotiations adopting 25kHz channelling of the 128.8125-132.0125 MHz band.	Part 87 Aviation Services Implementation of 25KHz channelling covered in this section.

RIC 58 MANDATORY CHANGE FROM DSB TO SSB

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
This circular provides information on an international (ITU) agreement to change from double to single sideband modulation to conserve spectrum.	Similar information is spread throughout the FCC Rules for those services which are required to switch from DSB to SSB.

RIC 65 GENERAL RADIO SERVICE
EXTRACTS FROM GENERAL RADIO REGULATIONS

DOC Requirement	Equivalent FCC Rule
General Radio Service	
66 Period of licence - three years	95.404 Licence not required for C.B.
67 Location a. In any craft or vehicle b. At fixed location c. While carried.	94.406 Operation on premises controlled by Department of Defense or on land of environmental or historic importance (i.e. a park etc.). You may have to comply with some local regulations.
68 Frequencies 26.965-27.285MHz	
69 Communications permitted with: a. Other G.R. licensees b. U.S. citizen band Class D stations c. Exempt stations.	No limitatons specified.
Max. Power a. 5 watts to final stage b. 12 watts pep for SSB c. 4 watts carrier for other emissions.	94.410 4 watts AM 12 watts PEP SSB
Permitted Traffic Business and personal affairs of licensee.	

RIC 65 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Duration 5 consecutive minutes max. with 2 minutes or until channel clear.	95.416 5 consecutive minutes conversation max. 1 minute silence min.
Call sign at beginning and end of exchange of communication.	94.417 Encouraged but not required to transmit call sign.
Operation on a non-interference basis outside GR channel.	94.423 Must follow instruction of FCC if interference caused.
Useable for control of models.	95.412 Tone signals only when used to make contact or to continue communications. Audible tones 15 seconds at a time. 95.413(4) Not to be used for one-way communication.

RII 204 SUPPRESSION OF INDUCTIVE INTERFERENCE
- WIRELESS MICROPHONES

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Frequency stability ±01%	15.117(a) Permitted Frequencies 49.830, 49.845,49.860,49,875 and 49.890MHz.
Harmonic and spurious emissions Outside ISM band -30dB	15.118(a) ±.01% over temperature rante -20°C to +50°C (b) Emission to be confined within 20KHz
Spurious emissions from receiver 50 microvolts max. at power line or antenna.	15.118(c) Max. field 10,000 microvolts per meter at 3 meters. (d) Out of band emissions including harmonics on any frequency more than 10kHz removed from carrier shall not exceed 500 microvolts/meter at 3 meters. (e) Antenna to be permanently attached. (f) RF input to power line 100 microvolts.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
General Conditions	FCC	
- Certificates issued (in general) to manufacturers and distributors	2.963(c)	If applicant not manufacturer, statement from manfacturer required.
- Existence of maintenance facilities required		
- Maintenance of quality standards		
- Type-approval requires compliance with these procedures and applicable RSS	2.915	Application to be granted if equipment satisfactory and a grant would be in public interest.
- Appraisal based on technical brief		
- Type-approval possible subsequent to issue of RSS		
- Certification under Terminal Attachment Program required if equipment capable of connecting into phone network	Not specified as a requirement.	
- Material submitted to be held in confidence		
- Department may request additional data	2.917(c)	Additional data if requested to be submitted promptly.
- Equipment may be certified under more than one specification but separate application (and fees) required	2.925(b)	Device subject to more than one equipment authorization may be assigned single FCC identifier
- Certification of slightly different equipment possible on showing differences from certified equipment are minor	2.933	Procedures re. minor changes

RSP 100 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
- post certification tests may be made	2.936	FCC imspection of equipoment design data, testing procedures and manufacturing facilities
- certified equipment causing interference to be adjusted	2.937	Action required if complaint re. equipment found to be justified
- details of any changes to be notified	2.932(a)	New application required if changes made except when change minor (see 2.1001 b(1) or(2)) or as further specified in this rule (2.1001 c to h) or in 2.1043
- only provisional certification given under provisional RSS	2.967	Procedure re. changes.
Identification (name plate data) a. Manufacturer's name, trade or brand name b. Model no. c. Serial no. d. Type-approved or cerficate number e. Name of assignee	2.925(a)	Identification (name plate data) - FCC identifer - Grantee's name or trade name - Country of origin (if non-U.S.)
	2.925 (d-g)	Additional requirements re. nameplate
	2.926	FCC identifier, grantee's and manufacturer's codes.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Application for certification		
- completion of application form for each model	2.963(a)	Application form required
- engineering brief required except as noted below		
- test report may be submitted by applicant or prepared by DOC lab		
- certificate issued when all conditions met		
- DOC certification of aeronautical equipment covers compliance with its requirements only. Operational, technical or airworthiness subject to aproval by DOT	2.927(b)	. . . authorization not to be construed as finding . . . . with respect to matters not encompassed by Commission's rules.
- DOC certification may be withheld pending notice from DOT		
- certification comes from DOC but submission may precede or follow DOT approval		
- further data re. DOT available from that department		
- further details re. certification from DOC.		

RSP 100 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Content of engineering brief	2.963(d)	Technical data required for type acceptance
Technical data - instruction sheets or manual containing complete schematic and parts list	2.983	Technical data required for type approval
- specification sheet	2.985	Measurements required RF power output
- sales literature		
- photo		
Performance characteristics - Per RSS if one exists or per closest equivalent as advised by DOC including complete data (see standard for full details) on power frequency stability, modulation capability spurious emission, hum and noise, audio response, bandwidth, environmental capabilities, type of antenna etc. - For low power equipment as much of foregoing as is applicable	2.989	Measurements required; Occupied bandwidth
	2.991	Measurements required; Supurious emissions at antenna terminals
	2.993	Measurements required; Field strength of spurious radiation
- All to be certified by a registered professional engineer	2.947	Measurement procedures, acceptable standards (type approval)

RSP 100 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Submission of equipment - application to be made and accepted before equipment shipped	2.943	Submission of equipment for testing for type acceptance or certification
- in general equipment tested in Ottawa laboratories elsewhere in special cases	2.965	Submission of equipment for type approval testing.
Equipment preparation Equipment to be complete, in full working order and accompanied by any necessary special test equipment or tools		

RSP 101 APPLICATION PROCEDURES STATIONS
BELOW 960 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Part I - General requirements - Fixed stations BW 16kHz Appendix B data not required - Fixed station BW>16kHz Appendix B data required	The FCC rules are organized by service not by frequency, hence there is no one set of rules which correspond to RSP 101. For most services type acceptance of the transmitter is required and for fixed stations a construction permit is needed. The procedure related to these per Part 2 is shown in the comparison with RSP 100.
Part II - A. Requirement and use - B. Application on form appropriate to: Fixed station (land) Mobile - land Mobile (aircraft) Mobile maritime Mobile maritime (pleasure craft) - C. Antenna structures for land stations - D. Multi-coupling and filter devices - E. No. of paging units served. - F. Required coverage for mobile stations. - G. Details of any auto identificaton system	When a construction permit has been granted, and for most services when construction is complete, an operating licence can be applied for. Operating licenses are on a service by service basis and for the services covered in Canada by RSP 101 the application procedures for a licence are covered in the following parts of the FCC Rules and Regulations. Part 21 Domestic Public Fixed Radio Services 22 Public Mobile Radio Services 73 & 74 Broadcast, AM, Fm and TV 81 Stations on Land in the Maritime Services and Alaska-Public Fixed Stations

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
- H. Licence fees.	
Part III - Additional technical data needed in other than simple cases, e.g. use of novel or modified equipment multi-hop systems, simulcast paging, over 16kHz bandwidth.	Part 83 Stations on shipboard in the Maritime Services 87 Aviation Services 90 Private Land Mobile Service
- Functional description	The requirements under these various parts differ somewhat but follow a fairly standard pattern covering the following points: 1. Prior completion of construction of fixed stations in accordance with a permit granted under Part 2.
- Equipment requirements	2. Compliance with elegibility criteria
- System performance	3. Technical details typically including data on antenna structures to ensure compliance with FAA regulations, radiation pattern, interference considerations, personnel available and maintenance procedures planned etc.

RSP 101 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
	Public Notice In any case where a construction permit is required particularly in the case of broadcast services covered under Part 73, a formal procedure for public hearings and provision for intervention is provided under various sections of the rules including
	73.3580 Local public notice of filing of broadcast application
	73.3584 Petitions to deny
	73.3587 Procedure for filing informal objections
	73.3593 Designation for hearings
	73.3594 Local public notice of designation for hearing
	The procedure for the hearing is set out in detail in Part 1 and following the hearing a decision as to the application will be reached by the Commission. If the applicant or any person in opposition is in disagreement with the decision reached there is a further procedure for filing a Petition to Reconsider.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Appendix B to include the following: General - frequency allocations, growth pattern, channel loading Transmitters - manufacturer, type and model, frequency, modulation, operating characteristics Receivers - manufacturer, type and model, frequency range, operating characteristics Antennas - manufacturer, type and model, pattern, back to front ratio, gain. Multi-plex equipment - manufacturer, type and model, capacity, operating characteristics Equipment manuals Transmission lines and filters, frequency versus loss etc.	

RSP 110 PROVISION OF SPECTRUM MEASUREMENT SERVICE BY DOC

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
This procedure describes the services which can be made available to other Federal and Provincial departments and agencies and to the private sector is carrying out various spectrum measurement services.	No spectrum measurement services are offered by FCC.

RSP 112 MEASUREMENT OF NOISE FIGURE TV RECEIVER

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Procedure for measuring the noise output at the terminals of a TV receiver. For requirements see GRR II, Sec. 133.	15.63 Radiation interference limits (b) Frequency — Noise level at Power Line Input 145kHz-25Mhz — 100 microvolts at any frequency 470-1000MHz — 350 microvolts average over 10 spot frequencies 470-1000MHz — 750 microvolts at any one frequency

RSP 113 APPLICATION PROCEDURES FOR PLANNED STATION ABOVE 890MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Submission Procedure Phase I Letter of intent with respect to: - Telecommunication - Carrier Applications or Electric Power Utility Applications or Broadcaster or Cable TV Operator Microwave application or Other applicants Each of the above will provide the name of the applicant details of the service or extension proposed, geographical data, traffic, system design details. When the application has been approved in principle further details are provided.	FCC Rules and Regulations are arranged by service not frequency. The application procedure for a new sation or a modification to an existing one follows first the general procedure set out in Part 2, details of which are shown in the comparison with RSP 100. Telecommunication carriers operate under the rules of: Part 21 Domestic Public Fixed Radio Service or, Part 22 Public Mobile Radio Services Part 25 Satellite Communications Any of these services have frequencies assigned in the bands above 890MHz.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Phase II This is the application proper and includes the appropriate application form and the technical details in the form of an Engineering Brief or in the case of an extension to an existing service an Addendum to the Engineering Brief.	Electric power utilities fall into the Industrial Radio Service category covered by Subpart D of Part 90 and under Part 94, Private Operational Fixed Microwave Service. Broadcast licensees have frequencies above 890MHz available for intercity relay covered by Subpart E of Part 74.
Public Announcement In the case of broadcast licenses submitting applications for the microwave delivery of program signals public notice is required. For 30 days following publication of the notice written interventions may be submitted in support of, or opposition to, the application. The proponent may reply to any intervention after which the Department will render a decision or initiate further investigation action as appropriate.	Applicants in other categories outside the federal government would include other industrial services, safety (fire and police), municipal and state governments, land transportation and marine and aeronautical services. Applicants in any of the above categories would be required to obtain a construction permit for any fixed station and in general type acceptance of the transmitting equipment to be used. With these requirements taken care of, the application procedure while differing in detail from service to service would require the submission of data establishing eligibility, name of actual owners of the proposed facility, data on fixed antenna if any, radiation pattern etc. For further details on the formal application procedure see notes on RSP 101.

RSP 114 LICENSE APPLICATION PROCEDURE EARTH STATIONS SPACE RADIO

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Scope Earth stations other than amateur, broadcast (including receive only stations)	
	Except for developmental purposes no licenses for satellite stations will be granted to other than the Communications Satellite Corporation.

RSP 116 APPLICATION PROCEDURE FOR TV AND RADIO RECEIVERS ONLY

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
This document outlines the procedure for applying for a license for a TVRO earth station.	There is no provision in the U.S. for satellite communication except by the Communication Satellite Corporation.

RSS 117 LAND AND COAST STATION TRANSMITTERS
200-535 kHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Use This service includes radiotelephone communication service to ship stations and radio-beacons in the radio-navigation service.	No non-government services in this band. NTIA Table 5.1 Fixed Stations 50-535 kHz Radio navigation stations.
4.0 Equipment Requirements	
4.1 Power output limitations	
4.1.1 For SSB max. output manufacturers rated PEP+1dB 4.1.2 Limiting of A3H emissions not to reduce carrier more than 6 dB relative to PEP	
4.2 Beacon transmitters to be modulated at either 1020 or 400 Hz ± 5%	
4.3 Nameplate requirements a. Type-approval number b. Serial number c. Applicant's name d. Model identification.	

RSS 117 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
5.11 Necessary bandwidth (BW)	No specification

Emission	BW
A2	Twice highest audio
A3	6000 Hz
A2H	Highest audio
A3H	3000 Hz

Power

Under test conditions recorded power must equal or exceed manufacturers rating.

Spurious emissions

50%BW<fd<150%BW -25 dB
150%BW<fd<250%BW -32 dB
250%BW<fd 25 mW max.

NTIA Table 5.1, Footnote A

100%BW<fd<150%BW -25dB
150%BW<fd<300%BW -35dB
300%BW<fd
for transmitters with power 5kw or greater
-80 dB
For under 5kW -43+10 log P dB
except
(a) 50 kw or greater with frequency range an octave or greater 60 dB acceptable

RSS 117 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Audio response (A3 and A3H only) Flat ±3 dB 400-1500 Hz		No specification.
Roll off below 400 Hz to min. of 10 dB at 100		
High frequency -10 dB at 3300 Hz to -40 dB at 4000 Hz and beyond.		
Hum and noise -40 dB referred to modulated output		
Operational Stability Allowable degradation of performance under line voltage and environmental extremes.		
Temperature ranges A - -40° to +55°C B - -10° to +55°C C - 0° to +55°C		
Voltage range ±10% nominal		
Humidity soak 95% at 40°C eight hours	NTIA	Table 5.1 Tolerance 100 PPM
Max. frequency departure 0.01%		
Output within 3dB of standard		

RSS 118 LAND AND MOBILE - CELLULAR RADIO
825-845 and 870-890 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Type acceptance requirements.	No government service in these bands.
Channel allocation Mobile transmit - 825-845 Base transmit - 870-890 Channel 1 825.030-870.030 Channel spacing 30 kHz	FCC Part 22, Subpart K 22.902(b) (1) System A - mobile transmit - 825-835 - base transit m - 870-880 (2) System B - mobile transmit - 835-845 - base transmit - 880-890 Channel spacing 30 kHz.
Modulation FM maximum deviation ±12 KHz voice ± 8 KHz data	Modulation 22.906(a) FM modulation F3E for voice ±12kHz (a)(5) data transmissions conforming to technical requirements for F3E operation. (c) Data transmission F9Y, ±8kHz
Power output Manufacturers rating +2 dB maximum.	22.904(a) Base stations 100W (except 500W for Rural Service Areas) Mobile stations 7W Auxiliary test stations 7W 22.904(c) and 22.905(a) and (b) For antenna heights above 500 feet power output is to be reduced and non-interference restrictions on Rural Service Areas with power above 100W apply.

RSS 118 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Out of band emission Voice modulation fc+20kHz<fd<fc+45 kHz - 25dB fc+45kHz<fd lesser of -60dB or 43+10 log P	22.907(b) In F3 telephony mode (1) fc+20kHz<fd<fc+45 kHz - 26 (2) fc+45 kHz<fd<2fc lesser of 60dB or 43+10 log P
Data modulation fc+20kHz<fd<fc+45kHz -25dB fc+45kHz<fd<fc+90kHz -45dB fc+90kHz<fd less of 60dB or 43+10 log P dB	(d) In F9Y wideband data mode (1) fc+20kHz<fd<fc<45kHz -26dB (2) fc+45kHz<fd<fc+90kHz -45dB (3) fc+90kHz<fd<2fc lesser of 60 dB or 43+10 log P dB
Hum and noise -32dB relative to standard modulation	22.907(g) Out of band emissions supervisory see re. F3 above.
Carrier on/off Carrier-on time 2 m sec max. Carrier-off time 2 m sec max. Carrier inhibit level -60dBm	Not specified.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Spurious emission a. Less than lesser of 60dB or 43+10 log P below carrier. b. Mobile - in 870-890 band 10 picowatts max.	22.907(e) Probably should limit based transmitter emissions in mobile band to -43+10 log P 22.907(f) Emissions from mobile in base frequency band -80dB/m
Modulation distortion -26dB relative to modulating tone	Not specified.
Audio response Below 3000 Hz - 6dB/octave 3000-6000 Hz - 6dB/actave above 6000 Hz - 2dB/octave	Not specified.
Transmitter operative under environmental conditions. Test Conditions Temperature Self-contained - -10° to +40° Portable with external power - -30° to +60°C Base station +4°C to +40°C or as specified by manufacturer	2.995 All operating requirements to be met at temperatures from -30° to +50°C.

RSS 118 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Supply voltage 90 to 110% nominal except portable with external power 80 to 110%	Not specified.
Frequency stability Base ±1.5 ppm Mobile and portable ±2.5 ppm	22.101 Frequency stability Base: 1.5 ppm Mobile: 1.5 ppm
Power output Power in normal environmental condition tests -4dB min.	
Receiver tests Sensitivity Minimum signal for SINAD 12dB and min. 50% reference output - -113dBm with C message weighting	Not specified.
Selectivity Two signal selectivity and desensitization - 65dB min.	Not specified.
Spurious response attenuation 60dB 50dB for portables	Not specified.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Intermodulation spurious response attenuation Attenuation of third order intermodulation products -55dB min.	Not specified.
Antenna conducted spurious emissions Mobile stn. receiver 20 nW Mobile receiver 10 pw	Not specified.

RSS 118 ANNEX A CELLULAR SYSTEM
COMPATABILITY STANDARD

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
This is the American document "Cellular System Mobile Station - Land Station Compatability Specification" which was Appendix D to the Report and Order in CC Docket 79-318.	Identical to DOC

RSS 119 LAND AND MOBILE
27.41 to 866 MHz.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

Type acceptance requirements for transmitters and receivers for voice and data communications frequency or pulse modulated.

Allocated bands and channel spacing.

Band (MHz)	Spacing (kHz)
24.41 - 50	20
138 - 174	30
406.1 - 430	25
450 - 470	25
806 - 821	25
851 - 866	25

Power output limits
Not specified but must not exceed manufacturers rating in test by more than 1dB.

90.209(b) For F3E or F3E

Band MHz	Authorized Bandwidth
896-901	13.6kHz
935-940	13.6kHz
All others below 947	20kHz

NTIA 5.6.1A (except as specified)

Footnote 23

Band (MHz)	Spacing (kHz)
30- 50	20
162-174	25
406-420	

FCC
90.205(b)

Band (MHz)	Power (Watts)
25-100	300
100-216 and 220-470	350 except 75 for land transportation
806-821	1000
851-866	1000

RSS 119 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

NTIA 5.6 footnote 22

Band	Power
406.1-410	7W/kHz bandwidth

Frequency tolerance
Under environmental extremes specified

Band (MHz)	Tolerance(HZ or PPM)
27.41 - 50	545 to 1000
406.1 - 430	1740
450 - 470	2350
806 - 821	2.5 ppm
851 - 866	2.5 ppm

FCC 90.213(a)

Band (MHz)	Tolerance (per cent)			
	Fixed		Mobile	
	Over 200W	200W Or less	Over 2W	2W Or Less
25- 50	.002	.002	.005	.005
50-450	.0005	.0005	.0005	.005
450-570	.00025	.00025	.0005	.0005
806-821	.00015	.00015	.00025	.00025
821-824	.0001	.0001	.00015	.00015
851-866	.00015	.00015	.00025	.00025

RSS 119 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
	NTIA 5.1 Band & Station Type — Tolerance ppm or Hz 4-29.7 MHz fixed 500W or less — 220 ppm Over 500W mobile — 10 ppm 30 ppm 29.7 - 100 MHz - Fixed 10W or less — 20 ppm - Over 10W — 5 ppm - Mobile 10W or less — 20 ppm - Over 10W — 5 ppm
Modulation Frequency or pulse Maximum deviation 5kHz Automatic modulation limiting	90.209(4) F3 maximum deviation 5kHz, except 821-824 and 866-869mHz 4kHz 90.211(c) Automatic modulation limiting except for mobile station 2W or less output NTIA FM, PM in bands 30-50, 162-174,406.1-420MHz with necessary bandwidths 16kHz

RSS 119 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Out of band emissions	90.209(c)(1-3) See also (d), (f), (g), (h), (i) for exceptions

Voice modulation 27-174Mz

Frequency	Attenuation Below Carrier
fd>10kHz falling linearly to	28dB
fd=24kHz	50dB
fd>24kHz	50dB

Frequency	Attenuation dB
50%BW<fd<100%BW	25
100%BW<fd<250%BW	35
250%BW<fd lesser	lesser of 43+10 log P or 80dB

NTIA

5kHz<fd<10kHz 80 logf/5
10kHz<fd<250%BW
For 30-50 & 162-174 MHz
lesser of 29 log $f^2/11$
or
50 dB for 406-420 MHz
Least of
116 log fd/6.1
or
116 log fd/6.1
or 50+10 log P or 70 dB

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
	92.209(h) Not relevent; relates to bands above 866MHz
	90.209(i) Operation with low pass filter bands 821-824 (and 866-869)MHz.

Frequency Band	Attenuation
fd<4kHz off carrier	0dB
fd from 4 to 8.5kHz off carrier	107 log f/4
fd from 8.5 to 15kHz off carrier	40.5 log f/1.16

Data modulation 27-174 MHz

Frequency	Attenuation dB
fd=5kHz	0
falling linearly to fd=10khz	25
fd>10kHz	28
falling linearly to fd>or=24kHz	50

FCC
90.209(f)(1-3)
For operation without low pass filter in bands from 25 to 174 MHz

Frequency	Attenuation
fd 5-10 kHz	83 log fd/5
fd 10kHz-250%BW	29 log $fa^2/11$
250%BW<fd	43+10 log P or 80dB whichever is the lesser

RSS 119 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
	90.209(f)(1-3) Operation without low pass filter in bands 25-50, 72-73, 75.4-76, 150.8-174MHz Frequency Band / Attenuation fd>5 to 10kHz off carrier: 83 log f/5 fd>10kHz to 250%BW off carrier: 29log f^2/11 or 50dB fd>250%BW off carrier: 43+10 log P or 80dB
	90.209(g) Operation without low pass filter bands 450-512, 806-821, 851-877 and 929-930MHz Frequency Band / Attenuation f>5 to 10kHz off carrier: 83 log f/5dB f>10 to 250%B off carrier: 116 log f/64 or 50+10 log P or 70dB
Data modulation 406.1-866MHz for fd 10-50 kHz least of 116 log fd/6.1 or 50+10 log P or 70 dB	

RSS 119 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Spurious emissions 25 microwatts max.	NTIA	Included in out of band emissions.
Modulation and distortion Deviation when 10% distortion reached ±3kHz i.e. 60% modulation	FCC	No specifications
	NTIA	No specifications
Audio response 6dB per actave relative to 1000 Hz 300-3000 Hz High frequency roll-off not less than 6 dB/octave	FCC	90.211(d)(1) Low pass filter or transmitter Bands several between 25-174MHz for 3-15kHz Attenuation greater than at 1kHz by 40 log f/3dB and 28 dB above 15 kHz Bands 450-866MHz for 3-20kHz attenuation greater than at 1kHz by 60 log f/3dB and 50 dB above 20 kHz
	NTIA	No specifications
Hum and noise -37dB relative to nominal output	FCC	No specifications
	NTIA	No specifications

RSS 119 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Receiver tests Audio response 300-3000Hz within +1 and -3dB of 6dB per octave up to 10,000 level not to exceed 6dB per octave de-emphasis	FCC No specifications NTIA No specifications
Sensitivity Input for 50% reference Output at 12% SINAD 0.75 microwatts (50 ohm input impedence)	FCC No specifications NTIA No specifications
Selectivity Adjacent channel 806-821 and 851-866 65dB All other bands 70dB Offset channel 138-174, 106.1-430 and 450-470 MHz receivers only	FCC No specifications NTIA 5.6.1 B(1) Receiver frequency tolerance ppm

Band	Offset	Selectivity
138-174	15 kHz	16 dB (avg. high & low sige)
All others	12.5 kHz	16 dB ave.

	Band		
Station Class	30-50	162-174	406-420
Land	5	5	2.5
Mobile	5	5	5
Portable	20	25	5

NTIA 5.6.1 B(3) Adjacent channel selectivity

	Band MHz		
Station Class	30-50	162-174	406-420
Land Fx, mobile	80dB	80dB	80dB
Portable	50dB	70dB	60dB

RSS 119 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Spurious response attenuation from lowest 1F to 1000Mhz Band — Attenuation 806-821 — 65dB 851-866 — 65dB Other — 70dB	FCC — No specification NTIA — 5.6.1 B (2) Band (MHz) Station Class — 30-50 — 162-174 — 406-420 Fixed & mobile — 85 — 85 — 85 Portable — 60 — 60 — 50
Intermodulation response attenuation Band — Attenuation 806-821 851-866 — 55dB Others — 60dB	NTIA — 5.6.1 B (4) Band (MHz) Station Class — 30-50 — 162-174 — 406-420 Fixed & mobile — 60 — 70 — 70 Portable — 50 — 50 — 50
Spurious emissions Band & Type — Max. Output 806-821 851-866 — 20 nanowatts All others except hand held — 2000 picowatts Hand held — 5000 picowatts	FCC — No specifications NTIA — 5.6.1 B(5) -80dB all station classes and all bands

RSS 119 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Other requirements		
Nameplate showing specified data	FCC 2.969	Information required on label
Controls inaccessible to operator for power, modulation limiting	NTIA	No specification
Internally preset to operate on discrete frequencies.		

RSS 120 PORTABLE VOICE AND DATA MODULATED AM OR FM TRANSCIEVERS
27.41-866MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Type acceptance requirements		
Power output within 1dB of manufacturers rating	FCC and NTIA	No specifications with respect to transceivers as such. 90.205(a) would probably apply limiting power to that necessary for other requirements. See under RSS 119.
Out of band emission		
Spurious emissions 25 microwatts max.		
Modulation limiting Limit operative at ±5kHz		
Frequency stability		

Band MHz	Frequency Tolerance
27.41- 50	±1500
138 -174	+3500
406.1 -430	+5000
450-470	+5000
806-821 and 851-866	+2.5 ppm

RSS 120 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Antenna conducted spurious emissions	
Band / Output	NTIA -80dB
806-821 851-866 20 nanowatts Other 5 nanowatts	

RSS 120 APPENDIX
MINIMUM REQUIREMENTS FOR AM TRANSCEIVERS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
As only the test procedures differ and as only the out-of-band emission and spurious emissions requirements are dealt with in either FCC or NTIA specifications, no comparison of Canadian and U.S. standards was attempted.	

RSS 121 VOICE AND DATA MODULATED RADIOTELEPHONE TRANSCEIVERS 27.41-866MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Type approval requirements for radiotelephone transceivers FM or PM 10W max. power output.	See under RSS 119.
Power output controls Only a low power switch to be accessible to operator.	
Modulation limiting Inaccessible to operator to automatically limit deviation to ±5kHz	
Environmental test conditions Self-contained Temperature range -10 to +40°C Equipment with external power Temperature range -30° to +60°C Supply voltage ±10%	

RSS 121 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power output Mafx. rating 10W Performance manufacturer's rating +1 dB max.	See under RSS 119.
Out of band emission	
Spurious emissions 25 microwatts	

RSS 121 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Modulation and distortion ±3.0 kilohertz deviation at 10% distortion	See under RSS 119.

Hum and noise
-37dB on nominal output

Frequency stability

Band (MHz)	Frequency Tolerance
27.41-50	545 to 1000
138 -174	1740
406.1 -430	2350
450 -470	2350
806 -821	
851 -866	2.3 ppm

RSS 121 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Receiver tests Sensitivity Input required for 50% reference audio at 12dB SINAD (or greater if necessary to achieve 50% power) - 1.5 microvolts across 50 ohms.	See under RSS 119.
Spurious response attenuation 45dB minimum	
Intermodulation spurious response -45dB	

RSS 121 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Antenna conducted spurious emissions Band — Output 806-821 — 20 nanowatts 851-866 — 2000 picowatts Others except hand held with batteries — 5000 picowatts	FCC NTIA -80dB See under RSS 119.

RSS 125 LAND AND MOBILE SSB TRANSCEIVERS AND RECEIVERS
1605 to 28,000 kHz 1Kw max.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Type-approval requirementse for radio-telephone non-multiplex transmitters and receivers	
Equipment requirements Upper sideband emitted Automatic power limiting effective to 1dB Minimum cabinet radiation Speech clarifier not to change carrier frequency	FCC 90.207 Except for Traveller's Information Stations A3J upper sideband emissions only. NTIA No specifications
Power output 1kW max.	FCC 90.205(b) Power Output

Frequency MHz	Max. Output W
1.3 to 3	1500*
3 to 25	750**
25 to 100	300

* Disaster and long distance circuit operations PEP 1kW

** Up to 1500W, industrial and radio location 3-6MHz band.

RSS 125 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power Output Measured power must equal manufacturer's rating.	FCC No specification NTIA No specification
Carrier Level -46dB relative to PEP (A3J emission)	FCC -40dB relative to DEP below 10MHz NTIA -40dB relative to PEP
Spurious Emission 50%BW<fd<150%BW -30dB 150%BW<fd<250%BW -37dB 250%BW<fd -46dB and all single frequency outputs of 48dB below PEP	FCC 50%BW<f<150%BW 25dB 150%BW<f<250%BW 35dB 250%B <f 43 + 10 log P dB NTIA 5.5.1(2) Frequency / Attenuation 1.75kHz<fd<5.25kHz -25dB 5.25kHz<fd<8.75kHz 38dB fd>8.75kHz 43+10 log P

RSS 125 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Bandwidth Equal to nighest modulating frequency	FCC 80.205(a) 3kHz NITA Table 5.1 3kHz
Audio response Per Figure 2	FCC No specifications NTIA No specifications
Residual noise -37dB	FCC No specifications NTIA No specifications
Frequency stability	FCC 90.213(a) Below 25MHz

Station Type	Frequency Tolerance
Land	±20Hz
Mobile	±40Hz

	Fixed		Mobile	
	Over 200W	200W & Less	Over 2W	2W & Less
	.005	.01	.01	.02
25 to 50 MHz	.002	.002	.002	.005

RSS 125 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
	NTIA	Table 5.1
		Frequency: 1.605-29.7Mhz; Tolerance: ±20Hz
Power output variation 3dB max. under extreme environmental conditions viz. Land - 0 - +50°C Mobile - 30 - +60°C Line voltage - ±10%	FCC	Not specified
	NTIA	Not specified
Receiver performance Audio output Not less than manufacturer's rating	FCC	Not specified
	NTIA	Not specified
Sensitivity Input for 50% reference audio at 12dB SINAD 1.5 microvolts across 50 ohms	FCC	Not specified
	NTIA	Not specified

RSS 125 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Two signal selectivity and desensitization characteristics Per Figure 3	FCC	Not specified
	NTIA	5.6.2 Slope of selectivity characteristics outside passband 100dB/kHz
Spurious response attenuation 60dB at frequencies up to 10MHz 50dB above 10MHz	FCC	No specifications
	NTIA	No specifications
Automatic gain control Audio output shall not very more than 10dB Inputs 10 microvolt to 100 mV and 20dB to 1 volt	FCC	No specifications
	NTIA	No specifications
Intermodulation distortion Intermodulation Products - Down 20dB on either fundamental for inputs - 5 microvolts to 50 millivolts and 10dB with both inputs at 500 mV	FCC	No specifications
	NTIA	No specifications

RSS 125 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Spurious output from receivers	FCC	Part 15, Subpart C. See 15.63 for details.
	NTIA	No specifications
Receiver performance under extreme environmental conditions. Max. sensitivity degradation 3dB Audio frequency shift 40Hz - mobile 20Hz - fixed.	FCC	No specifications
	NTIA	No specifications

SUPPLEMENT TO RSS 125 AERONAUTICAL MOBILE

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Class of emission A1, F1, A2H, A3J, A7J, A9J	FCC 87.67 A1A, A2A, H2B, R3E1, H3E, J3E, J7B, XXA, J9W, F1B, PON subject to some constraints see rule. 87.299 With few exceptions frequencies in these bands are not available for domestic use in the U.S.A.
Power Class of Emission / Station / PEP A2H, A3J, A7J — Aeronautical — 6KW A9J 100% mod. — a/c — 0.4 KW A1F1 — Aeronautical — 1.5 KW A/C — 0.1 KW	FCC 87.63(d) No greater than minimum required for satisfactory operation.
Frequency tolerance SSB transmitters in 1605-4000kHz and 4-29.7MHz bands Aeronautical stations ±10Hz a/c stations ±20Hz Other classes of emissions ±.01 per cent	FCC 87.65(c) Ground stations ±10Hz Aircraft ±20Hz (except Civil Air Patrol ±50Hz) NTIA Table 5.1 Frequency / Tolerance 1.605-29.7MHz — 20Hz

RSS 136
GENERAL RADIO SERVICE EQUIPMENT REQUIREMENTS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel Allocation 40 ch.	95.625(a) Channel Frequencies 40 ch. (same)
External Controls - no external controls to cause equipment to operate in a manner violating this RSS.	95.643 Accessibility of Controls - similar to DOC.
Connection to Batteries (if used) - permits changing without causing improper operation.	95.661(c) Frequency Determining Circuitry - must be inaccessible to user.
Antenna - external connections for detachable antenna - portable units must have readily accessible circuitry to detach antenna.	95.665(a)(3) Antenna - antenna connector is permitted.
Microphone - input is allowed but shall be attached to input of amp of the mic.	95.665(a)(2) Microphone - connector is allowed.

RSS 136 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Frequency Determining Elements - not of plug-in nature - crystals, PLLICs and channel selector switches are included - only authorized channels are allowed.	95.649 Crystal Control - all TXs must be crystal controlled 95.661(a) Frequency Capability - can only transmit on CB channels
Equipment I.D. - manufacturer's name - model I.D. - serial no. - applicant's name - type approval no.	95.667 Serial No. 95.651 Instructions and Warnings 95.669 Copy of rules (Does not require approval no.)
Permissible Emissions - 6A3 (AM/DSB) - BW description 3A3J (sup. carrier SSB) (upper or lower)	95.627(c) Emission Types - AID (AM/DSB data) for establishing voice comm. - HID (AM/SSB full carrier) - RID (AM/SSB reduced or variable level carrier) - JID (AM/SSB suppressed carrier) - A3E (AM/DSB) - H3E (AM/SSB full carrier) - R3E (AM/SSB reduced or variable level carrier) - J3E (AM/SSB suppressed carrier)
Authorized BW - DSB 6KHz ± 500Hz = 7KHz - SSB 3KHz ± 250Hz = 3.5Khz	95.629 Emission BW DSB - AID, A3E = 8KHz SSB - HID, RID, JID, H3E, R3E, J3E = 4KHz

RSS 136 cont'd

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted	
Standard Test Voltage - ±2% of working voltage			
Standard Atmospheric Condition - +25°C ±5°			
Standard I/O Termination -equal to load specified			
Standard Test Frequencies (Fc) - using at least 3 allocated R.F. Freq. (high, med. low)			
Standard Two-Tone Test Signal - 2 sinusoidal tones: 625Hz ± 1% 2375Hz ± 1% - simultaneously applied to modulation input terminals of TX under test at levels which result in equal amplitudes of the principal frequeny component of the R.F. output signal at measured PEP		2.985	RF Power Output - 2 sinusoidal tones: 500Hz - same as RSS 136

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted
Standard Test Modulation - DSB: 2500Hz ± 1% sinusoidal input applied at the level required to produce 50% modulation of carrier - SSB: standard two-tone test signal applied at the level required to produce PEP=50% of measured PEP under 8.1		
Standard Test Duty Cycle - Tx operated at full rated output power 15 sec. ON and 45 sec. OFF.		
Transmitter Tests		
Power Output Method of Measurement SSB: TX modulated w/ Two frequency test signal Highest amplitude off-order difference RF frequency internal product=26dB below level of either of the 2 test tones or until limiting occurs. Measure PEP.	2.985	R.F. Power Output Method of Measurement SSB: See tech. requirements (2.985) different tones
DSB: No modulation applied Average carrier power output shall be measured.		DSB: power output shall be measured at RF output terminals, no modulation applied.
Min. standard SSB: RR. PEP output shall not 12W DSB: Carrier output shall not exceed 4W (Both not less than 1dB from manufacturer's rating.)	95.635	Max. Transmitter Power SSB: PEP < or = 12W DSB: Carrier Power < or = 4W

RSS 136 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Adjacent Ch. & Spurious Emission Limit	
Method of Measurement SSB: Modulated w/Two-Tone frequency test signal to produce 50% of ave. power in para. 7.1 Increase input level by 10dB Monitor output from lower IF to 1GHz DSB: Modulated w/2500Hz signal to produce 50% mod. increase input level by 16dB. Monitor output from lowest IF to 1GHz.	2.989 Occupied BW Method of measurement SSB: Two tone modulation applied 10dB higher than PEP (different tones than RSS's use) DSB: Same as for RSS 136.
Minimum Standards SSB: fc±(1.75-5.25)KHz: -23dB fc±(5.25-8.75)KHz: -32dB fc±(>8.75)KHz: -57dB > 1.5 fc: - 77dB DSB: fc±(3.5- 7)KHz: -26dB fc±(7-17.5)KHz: -35dB fc±(>17.5)KHz: -60dB >1.5fc: -80dB	95.631 Spurious Emissions SSB: fc±(2-6)KHz: -25dB fc±(6-10)KHz: -35dB fc±(<10)KHz: 53 + 10log(P) >2fc: -60dB DSB: fc±(4-8)KHz: -25dB fc±(8-20)KHz: -35dB fc±(<20KHz): 53 + 10 log (P) > 2fc: 60dB
Speech Clarifier or Freq. Netting Control Test Method of Measurement - TX output freq. measurement shall be recorded over the full range of this control Minimum Standard - TX frequency shall not vary by than 20Hz	

RSS 136 cont'd

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted
Power Output Limiting (SSB TX Only) Method of Measurement (See issue 6) Min. Standard - PEP output shall not exceed PEP measured in 8.1 by more than 0.5dB and shall not be more than 12W		
Over Modulation Transient Limiting (DSB TX Only) Method of Measurement (See issue 6) Minimum Standards Emissions in either adjacent channel shall be attenuated at least 35dB relative to unmodulated carrier or shall be of a time deviation not exceeding 100msec.		
Transmitter Frequency Stability Method of Measurement Monitor carrier freq. under the effects of temperature & voltage variations Temp. range: 0°C, +40°C Voltage: 90%, 110% of standard test voltage One test at ambient temp and standard voltage Four tests at extremes: low T-high V, low T-low V, high T-high V, high T-Low V.	2.995	Frequency Stability Method of Measurement Same as RSS 136 except: Temp. range: -30°C, +50°C Voltage: 85%, 115% of standard test voltages Measurement with Temp. variations have to be made 10°C apart Temperature & Voltage tests done separately.

RSS 136 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Min. Standards DSB: ±500Hz SSB: ±250Hz	95.625 Channel Frequency Tolerance ±0.005% (about = 1360Hz)
Antenna Conducted Radiation Method of Measurement Monitor emissions from lowest IF to 500MHz using spectrum analyzer or frequency selective voltmeter. Identify by frequency emissions within 10dB of permissible value. Minimum standard Output power (at antenna terminal of any emission shall not exceed 200pW	15.59(c) Method of Measurement With antenna terminals connected to resistor equal to manufacturer's rated input impedance, the power at antenna terminals in the range 25-500MHz shall be as below. Min. Standard Ouput power (at antenna terminal) after Jan. 1/77 - -2mW, after Jan. 1/78 - 20pW
Receiver Cabinet Radiation Method of Measurement Open field fest Receiver mounted on a non-conducting turntable 1m high. Search antenna placed 3m from nearest point on the equipment. Centre of dipole = 2.5m above ground. Monitor radiation by rotating receiver and searching from lower IF to 1000MHz. Deals with non-detachable antennae. Also details test setup for measurements. Monitor radiation from 25MHz to 500MHz.	15.59(d)(h) Emissions from Surface of RX Method of Measurement With antenna terminals of RX connected to shielded resistor equal to manufacturer's rated input impedance, the emission on any frequency in the range 25 to 500MHz shall be as below. In lieu of sections (c) & (d), a receiver with built in antenna may meet F/S limits as below.

RSS 136 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Minimum Standard Non-detachable antenna: 40mV/m at 3m All other: 5mV/m at 3m.	Minimum Standard Non-detachable antenna After Jan. 1/77 - 110mV/m at 3 metres After Jan. 1/78 - 40mV/m at 3 metres All other - 5mV/m at 3 metres.

RSS 140 AM LAND & MOBILE RADIOTELEPHONE
TRANSMITTERS AND RECEIVERS
27.28-50MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Power output Max. power within 1dB of manufacturer's rating	FCC	Not specified
	NTIA	Not specified
Spurious emissions At frequency close to fundamental Figure 1	FCC 90.209(f)	5kHz<fd<10kHz -83 log f/5 10kHz<fd<250%BW -29 log f^2/11 or 50dB 250%BW<fd<lesser of -43+10 log P or 80dB
	NTIA	75%BW<fd<150%BW -25dB 150%BW<fd<300% -35dB 300%BW<fd: transmitter power 5kW or more 80dB Less than 5kW 50 microwatts
Bandwidth 20kHz	FCC 90.209(b)(2)	8 kHz maximum A3E
	NTIA	Not specified
Modulation capability at 10% distortion 70% minimum	FCC	Not specified
	NTIA	Not specified

RSS 140 cont'd

DOC Requirement	Equivalent FCC Rule
Audio response See Figure 2	FCC Not specified NTIA Not specified
Hum and Noise -37dB	FCC Not specified NTIA Not specified
Carrier stability ±1000 Hz	FCC 90.213(a) Percentage

Fixed		Mobile	
Over 200W	200W Or Less	Over 2W	2W Or Less
.002	.002	.002	.005

NTIA Table 5.1

Tolerance parts/million

Land Stations		Mobile	
10W Or less	Over 10W	10W Or Less	Over 10W
20	5	20	5

RSS 140 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Receiver tests Audio Power output	FCC	No specifications
Minimum Stadards For loudspeaker output .9W distortion 15% max. Headphones 10mW distortion 10% max. Fed audio line 12mW 5% distortion For other devices level and distortion as required	NTIA	No specifications
Sensitivity Min. signal for 50% reference output at 12dB SINAD (or greater if necessary) 0.75 microvolts across 50 ohms	FCC	No specifications
	NTIA	No specifications
Adjacent channel selectivity and desensitization	FCC	No specifications
	NTIA	No specifications
Spurious response attenuation 70dB min.	FCC	No specifications
	NTIA	No specifications

RSS 140 cont'd

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted	
Intermodulation spurious response attenuation (see RSS 140 for test methods)		FCC	No specifications
Output Generator #1	Ratio of 2 (or 3) to 1	NTIA	No specifications
Reference level	45dB		
30 microvolts	35dB		
300 microvolts	25dB		
Audio frequency response (a) For use with speaker or headphones per Fig. 3. (b) For line feed per Figure 4. (c) Other applications as required.			
Hum and noise -40dB referred to reference output		FCC	No specifications
		NTIA	No specifications
Spurious output 200 microvolts max.		FCC	No specifications
		NTIA	No specifications

RSS 140 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Zone bandwidth 2.8kHz	FCC	No specifications
	NTIA	No specifications
Receiver frequency stability under extreme environmental conditions ±1000Hz		

RSS 147 EMERGENCY LOCATOR TRANSMITTER
121.5 MHz or 121.5 and 243.0 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Requirements for type-approval of radio locator beacons for aviation emergencies.	Emergency Locator Transmitters are required under FAA regulation and are covered under Technical Standard Order (TSO) C91a. This refers to the Radio Technical Commission for Aeronautics (RTCA) Document No. DO-183, "Minimum Operational Performance Standards for Emergency Locator Transmitters" which states the technical requirements.

Equipment Types

Type designator	Definition
A	Auto eject
AD	Auto deployable
F	Fixed
AF	Auto fixed
AP	Auto portable
P	Personal
W	Water activated
S	Survival

FAA TSO - C91a
Emergency Locator
Transmitter Equipment

Equipment Operation

ON-OFF switch guarded against inadvertent operation

Emission

Frequency 12.5MHz or 121.5 and 243.0MHz

Modulation A2A or A3X

Power (PERP) 75mW min., 1W/freq. max.

Bandwidth 25kHz

RSS 147 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Spurious radiation 50%BW<fd<100%BW -25dB 100%BW<fd<250%BW -35dB 250%BW<fd-(43+10 log P)dB	
Modulation Swept over range at least 700Hz downward to 300Hz; repetition rate 2-4Hz Modulation factor .85	
Test performance Radiated power 75mW min. 1W max. on each carrier frequency	
Carrier tolerance 50 ppm	
Occupied bandwidth 25kHz max.	

RSS 147 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Spurious radiation 50%BW<fd<100%BW -25dB 100%BW<fd<250%BW -35dB 250%BW<fd - (43+10 log P)dB	
Modulation factor 0.85	
Modulation characteristics Audio tone sweeps downward over at least 700Hz within range 1600 to 300Hz. Sweep rate 2 SPS min., 4 max.	

RSS 150 AM TRANSMITTERS
535-1705kHz
10kHz spacing

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power output Below 10kW Manufacturers rating + 10% 10kW and above Manufacturers rating + 60%	73.1560 Antenna input not less than90 nor more than 105% of authorized power.
Modulation capability	73.1570(a) Capability 85% or frequent peaks (b) Maximum 100% or frequent negative peaks 125% or any positive peak.
Carrier stability 10Hz	±20Hz
Carrier shift 5% at 95% modulation	73.1590(c)(2) Requires regular measurement of shift at various levels of modulation but no standard given.
Spurious emission 15-30kHz off -25dB 30-75kHz off -35dB Over 75 KHz -(43+10 log P) or -80dB	73.44 15-30kHz off carrier -25dB 30-75kHz off carrier -35dB Over 75Hz off carrier -43+10 log P or 80 dB

RSS 150 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Cabinet radiation Reference field strength at all frequencies $E=7\sqrt{P}/r$ volts per metre -54dB below reference	2.993 Field strength of spurious radiation. Measurement required of level of harmonic and other spurious emission (excludes fundamental).
Audio input impedence 600 ohms balanced at all audio frequencies	
Audio input for 95% modulation 10dBm ± 2dBm	
Audio frequency response Per Appendix A	
Harmonic distortion 3% 50-10,000Hz	
Audio Intermodulation distortion 4 per cent of larger of test signals specified	

RSS 150 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Carrier Hum and Noise -55dB relative to 100 per cent modulation		
Nameplate Type-approval Manufacturers name Name and rating of unit Serial number	2.969	Information on identification label Name of grantee Type or model number FCC approval no. Any other data required.

RSS 150 SUPPLEMENT FOR AM STEREO

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Modulation capability Amplitude modulation to 85% Phase modulation to 1.25 radians	
Occupied Bandwidth Carrier frequency ±15kHz emissions 15 to 30kHz Off carrier down 25dB minimum	73.128(b)(1) No existing standard but required that any AM stereo system comply with bandwidth limitations of 73.44.
Unwanted emissions 30kHz<fd<75kHz -35dB 75kHz<fd -(43+10 log P) or 80 dB	
Audio Input 10 ± 2dBm for 85% modulation	
Audio Response Either left of right channel to track 1000Hz response within 2dB from 50 to 10000Hz at all modulation levels up to 85%	

RSS 150 Supplement for AM Stereo cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Harmonic distortion 5% max. either channel	
Channel balance Within 1dB 50-10000Hz up to 85% modulation	
Intermodulation distortion (no standard given)	
Carrier hum and noise -48dB in either channel referred to 100% modulation at 1000 Hz.	
Stereo separation 20dB min. 400-10,000Hz	
Crosstalk (L+R) to (L-R) and (L-R) to (L+R) 30dB down on reference at 1000Hz	

RSS 150 Supplement for AM Stereo cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Monophonic compatibility Audio frequency response wthin 2dB of 1000Hz, response 50-10000Hz Harmonic distortion 5% max. Hum and noise -55dB referred to 100% modulation	Not specified.

RSS 151 LOW POWER TV BROADCAST TRANSMITTERS
55-88, 174-216 470-890 MHz

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted
Transmitter standards Type of emission - Visual A5C - Aural F3 Audio pre-emphasis 75 microsecond		
Visual power Up to 10W VHF nominal 100W UHF Test power to be within 1dB	74.735	VHF low power TV 0.01kW max. UHF low power TV 1.0kW max. See rule for exceptions.
Aural power 5 to 20 per cent of visual power		Not specified
Carrier frequency stability ±.003 per cent of mean test frequency	74.761	Aural and Visual carriers, Frequency Stabilities: .02% for transmitters rated at no more than 100 watts; .002% for transmitters rated at more than 100 watts aural carrier to be maintained within 1MHz of visual carrier.
Spurious emissions Each emission -60dB relative to rated Tx power or -16dBm whichever is greater except 30dB at 3.58 MHz and 4.5 Hz below visual carrier and 8.08 and 9.0 MHz above.	74.736	Spurious emissions on frequencies more than 3MHz above or below the upper and lower edges of the assigned channel shall be attenuated no less than: 30dB for transmitters no more than 1 watt 50dB for transmitters more than 1 watt 60dB for fransmitters more than 100

RSS 151 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Intermodulation Level of IM products 50dB below reference	
Visual performance Input impedance 70 ohms, unbalanced, return loss 26dB min.	Not specified (See below)
Modulation Max. carrier level ±2% of original, reference white 12.5 ± 2.5 per cent modulation	Not specified (See below)
Modulation stability Maximum carrier level variation 5 per cent max. Blanking level variation 1.5 per cent max.	Not specified (See below)
Field time distortion 2 per cent tilt of window signal	Not specified (See below)
Modulation Hum Peak to peak ripple and hum -40dB referenced to max. carrier	Not specified (See below)
	74.750(d)(1) The equipment shall meet the requirements of Rule 73.687. Paragraph (a)(1) Transmission requirements for visual transmitters, and paragraph (b)(3) aural modulation levels for for aural transmitters i.e. 73.1570. Generally these are less demanding than the equipment requirements for higher powered transmitters and much less detailed than for RSS151 LPTV transmitters.

RSS 151 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Modulation noise Peak to peak video to rms noise 50dB min.	Not specified
RF Linearity 20 per cent max. difference in relative amplitude of any two steps.	Not specified
Differential gain 15 per cent max.	Not specified
Differential phase Within 7° of colour burst 10° overall	Not specified
Group delay Per Appendix C	Not specified Not specified
Amplitude/frequency characteristics Per Appendix E	Not specified

RSS 151 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Aural performance	
Input for 100 per cent modulation 8 ± 2dBm	
Audio response 75 microsecond pre-emphasis per Appendix E	
Harmonic distortion 5 per cent max.	
FM noise level on carrier 50dB below 100% modulation	

RSS 153 FM BROADCAST TRANSMITTERS
88-108 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power output Adjustable over a range of at least 50-100%	FCC Not specified
Carrier frequency stability 1000 Hz	73.154(b) -2000Hz
Spurious emission 120-240kHz off carrier -25dB 240-600 -35dB Over 600 -(43+10 log P)dB	73.317(a) Spurious Emissions. Same as Canada RSS 153.
Cabinet radiation -54dB below free space fiefld	FCC Not specified
Audio input for 100% modulation 10 ±1dBm	FCC Not specified

RSS 153 cont'd

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted
Harmonic distortion 1% 50 to 15,000		Not specified
FM noise on carrier -60dB relative to 100% modulation		Not specified
AM modulation noise on carrier -50dB relative to 100% modulation		Not specified
Multiplex operation L + R channel with only L (or R) signal FD 45% max.	73.322(i)	As for DOC
Pilot subcarrier 19,000Hz Modulation of main carrier 8-10% of max.	73.322	Pilot and sub-carrier modulates main carrier 8-10%
L-R channel with only L(or R) signal FD 45%	73.322(i)	As for DOC

RSS 153 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
SCMO channel During periods of no program multiplex subcarriers and significant side bands within range 20-99kHz with program 53-99kHz	73.319(c)	As for DOC except 20-99kHz and 53-99kHz
With no program modulation due to all subcarriers above 75kHz-10% and to all subcarriers 30%	73.319(d)(1)	As for DOC except during program sum of all subcarriers produce 10% modulation
During program all subcarriers above 75kHz cause 10%, those below 10% and all 20%	73.319(d)(4)	Total modulation of the main carrier including SCA subcarriers shall meet the requirements of 73.1570.
Total modulation by baseband signals 100% but with subcarriers peak modulation may be increased: 1. By 0.5% for each 1% subcarrier injection modulation. 2. 110% max. allowable (82.5 kHz deviation)		
Audio frequency response Pre-emphasis curve - time constant 75 microseconds	73.317(e)	Pre-emphasis curve - time constant 75 microseconds per 73.333, Figure 2.
Harmonic distortion L and R channels 1% 50 to 15,000 at 90% modulation	73.322(q)	No standard.

RSS 153 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
FM noise on carrier -60dB relative to 90% modulation	Not specified
AM noise -50dB relative to 90% modulation	Not specified
Cross-talk Stereo crosstalk Into either channel 40dB down on 90% modulation	Not specified
SCMO crosstalk From SCMO into L+R or L-R -60dB referred to max. modulation	Not specified
Stereo separation 30dB minimum	Not specified

RSS 153 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Frequency stability of subcarriers Pilot 19,000Hz ± 2Hz	73.322(a)	19,000 ± 2.0Hz
SCMO within 500Hz of manufacturers operating frequency		Not specified
Stereo sub-carrier suppression 40dB below total modulation	73.322(e)	The stereophonic subcarrier shall be suppressed to a level less than one per cent modulation of the main carrier.

RSS 154 TV BROADCAST TRANSMITTERS
54-88, 174-216, 470-806 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Visual power output rating Per manufacturers rating Tx must achieve full power with AC input 5% above or below rated.	Not specified	
Aural Power output 10% min., 20% max. of visual power	73.1560	Aural power output not to exceed 22% of peak authorized visual ERP
Carrier frequency stability ± 500 Hz	73.1550(c)(1)	Visual carrier stability ±1000Hz Aural carrier stability ±1000Hz from visual carrier plus exactly 4.5MHz.
Intermod distortion Adjust with respect to reference Visual carrier -8dB 3.58 MHz mub -17dB aural carrier -10dB* * or -7dB if aural carrier 10% or visual	Not specified	
Level of predominent 1M products 51dB below reference and level at +7.16 MHz 60dB	Not specified	

RSS 154 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

Spurious emissions

Transmitter Power	Emission	Max. Value
Any	at -4.5 MHz and 9.0 MHz from visual carrier	-40dB*
Below 25W	All others	-46dBW
Above 25W	At all harmonies	-(43+10 Log P) or -60dB whichever is the stronger
Above 25W	All other spurious	-60dB*

* Referred to PEP of Tx

Cabinet radiation $E=7\sqrt{P}/r$ volts per metre Emissions -54dB referred to E	73.687	Construction requirements specified. No radiation limits specified.

RSS 154 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Video input impedence 75 ohm return loss up to 4.5MHz 26dB min.	Not specified	
Modulation Capability Blanking at 75% max. Carrier 98 to 102 per cent of original, reference white 12.5% ±2.5	73.687(a)(4)	Requires radiated signal to have an envelope as specified in 73.682 and Figure 6 or 7 or 73.699 (i.e. as in RSS 154).
Modulation stability Tilt on window signal 2% of the overall amplitude	Not specified	
Modulation Hum Peak to peak ripple and hum -46dB referred to carrier	Not specified	
Modulation Noise Ratio peak to peak video versus RMS noise 50dB min.	Not specified	

RSS 154 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
RF Linearity Difference between adjacent steps 7% max., smallest at least 90% of largest	Not specified
Differential Gain 7 per cent max.	Not specified
Differential phase ±4° of colour burst 5° overall max.	
Group delay As shown in Appendix E	73.687(a)(3) Envelope delay relative to average envelope delay
Amplitude/Frequency characteristic Limits for carrier ±7.75MHz per Appendix F Response with pedistat 50 ± 30, IRE units constant ±0.75dB At visual +4.18MHz max. attenuation of response 1.5dB internally diplexed 1.5dB externally diplexed, Tx without diplexer 3.0dB externally diplexed Tx with diplexer	Not specified

RSS 154 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Aural performance Input 600 ohms balanced	Not specified
Input for 100% modulation either 0 or +10dBm	Not specified
Audio Frequency response Per Appendix C (Standard 75 microsecond pre-emphasis)	73.687(b)(1) Pre-emphasis network curve in Fig. 12 of 73.699 identical with Appendix C RSS 154.
Harmonic distortion at 100% modulation	Not specified
FM noise on carrier 54dB down on 100%	Not specified

Frequency Range (Hz)	Distortion %
5- 100	1.5
100- 7,500	1.0
7,500-15,000	1.5

RSS 154 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Intercarrier FM 45dB down	Not specified
AM noise on carrier 50Hz-15kHz -40dB externally diplexed, -26dB internally diplexed	Not specified

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Visual power output rating - average power during a synchronizing pulse to be as specified with line voltage variation ±5%	Not specified
Power output adjustment Adjustable down by 3dB at least	Not specified
Carrier frequency stability ±500Hz	74.761 Video Carriers (a) 0.02% rated Tx power not more than 100W peak visual power (b) 0.002% rated power peak visual power (c) 1kHz for offset carrier Aural carriers 4.5MHz ±1kHz above visual carrier
Intermodulation all including the following 51dB below reference a. Picture + 920kHz b. Picture + 2.66Mhz c. Picture + 3.58MHz d. Picture + 5.42MHz e. Picture + 7.16MHz f. Picture + 8.08MHz	Not specified

RSS 155 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Spurious emissions Translator Power W: Any; <25W; >25W Spurious Emission MHz: At -4.5 and 9.0; All others; At all harmonies Maximum Value dB: -40; -46dBW; -(43+10 log P) or -60	74.750(c) RF harmonics attenuated 60dB below peak visual output within assigned channel all other emissions or frequencies more than 3MHz from channel edges attenuated no less than: 30dB for transmitters rated more than 1W 50dB for transmitters rated more than 1W 60dB for transmitters rated more than 100W
Cabinet radiation -49dB w.r.t. reference	Not specified
Input noise Channels 2-13 - 7dB 14-69 - 9dB	Not specified

RSS 155 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Automatic gain control Hold output within 0.5dB of rating	74.750(4) Hold output within 2dB
RF Amplitude versus Frequency response With 0dB mV input, output per Appendix B. At +16dB mV and -16dB mV variation 1dB max.	Not specified
Visual to aural cross modulation 10% peak	Not specified
Aural to visual cross modulation Aural to visual cross modulation 50dB below peak to peak video	Not specified
Syne amplitude 40 ± 3 IRE units	Not specified
Field Time distortion Tilt 2% max.	Not specified

RSS 155 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Modulation Hum Peak to peak 46dB below carrier	Not specified
Modulation Noise Channel / Noise dB Below p to p Video 2-13: 46 14-69: 44	Not specified
RF Linearity 7% difference between relative amplitude of any two steps	Not specified
Differential gain 7 per cent max.	Not specified
Differential phase Within ±4° of colour burst, 5° overall	Not specified
Group delay Within limits shown in Appendix C	Not specified

RSS 156 AM LAND STATIONS POWER LINE CARRIER
1580KHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
	There is no equivalent type of system licensed by FCC

RSS 157 LOW POWER TV BROADCAST

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Automatic gain control Loss in visual power during synch pulse 3dB max variation in level difference between sych tip and blanking 10 per cent max.	74.750(4) Hold output within 2dB
Power output Average power during synch pulse Max. 10W VHF 100W UHF Manufacturer's rating to be held with 1dB	Not specified
Frequency stability 0.003% visual ad if demodulation used aural carrier to remain within 1500Hz of the 4.5 MHz spacing.	74.761 Video carrier frequency stability (a) .02% rated Tx power not more than 100W peak visual power (b) .002% rated Tx power over 100W peak visual power (c) 4.5MHz ±1kHz above visual carrier.
Spurious emissions Each spurious emission not be exceed greater of 60dB below rated power or 16dBm except emissions at carrier minus 3.58 or 4.5MHz or plus 8.08 or 9.0 MHz 30dB below rated	74.750(c) RF Harnomics attenuated 60dB below peak visual output within assigned channel. All other emissions or frequencies more than 3MHz from channel edges attenuated no less than: 30dB for transmitters rated no more than 1W 50dB for transmitters rated more than 1W 60dB for transmitters rated more than 100W

RSS 157 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
RF Linearity Max. difference between two steps 20 per cent.	Not specified
Differential Gain 15% max.	Not specified
Differential Phase ±7° of colour burst, 10° overall	Not specified
Transient response Max. K factor 4%	Not specified
Intermodulation Test by Method A acceptable if no beats observable in monitor. If beats use method B. all intermod products to be down 50dB	Not specified
Sensitivity -55dBm UHF -52dBM UHF.	Not specified

RSS 157 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Amplitude/Frequency characteristics Between visual carrier minus 0.75 and carrier plus 4.0 MHz at 58dBm and 68dBm to match response at 43dBm (with gain adjustment) within 1dB.	Not specififed

RSS 158 AM CARRIER CURRENT BROADCAST
535-1605kHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
	There is no standard covering this class of equipment in the United States.

RSS 159 AM RECEIVERS FOR USE IN NATIONAL EMERGENCY

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Construction - transistor circuit - simple as possible - easily serviced - special controls such as lone or selectivity are not required	No U.S. standard
Power source - Battery powered using standard flashlight cells, D or AA or other types easily available - Battery replacement to be simple without the use of tools	
Mechanical construction All parts are to be assembled and mounted securely. If printed circuits are used the circuit board must be rigid enough not to bend with light shock.	
Frequency Range - 525-1605kHz	
External antenna - readily connectable	

RSS 159 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Care - capable of witnstanding normal handling and shocks in shipment	
Sensitivity Highest noted on tests on three different frequencies in the band 300 microvolts/m with ferrite antenna 1200 microvolts/m for vertical antenna Min. SINAD 6dB	
Selectivity: 5kHz<fd<30kHz — Attenuation: Larger of 6dB or 90 log fd/6.47	
Minimum output without distortion 50mW	
Battery life test 14 day test 12 hours on, 12 off Output down 3dB max.	

RSS 159 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Performance at temperature extremes Using only the vertical antenna repeat the tests for sensitivity, selectivity and power output. At temperatures from 0 to -45°C. Note any difference in performance fro original test results.	
Drop test With the receiver tuned to a local station drop it once on each of six sides from a height of 8 inches onto a sponge rubber pad, one inch thick on a solid surface.	

RSS 180 LAND AND MOBILE
SSB TRANSCEIVERS
1605-28,000kHz 10W

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Max. PEP 10W	For comparison with this standard, see data under RSS 125.
Carrier Frequency Stability 100Hz	
Bandwidth Emissions within 1.6kHz of occupied band -20dB outside -38dB min.	

RSS 180 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Spurious and harmonic outputs -43dB min. ref. PEP	See comparative data under RSS 125.
Audio response Within unhatched area of Figure 2	
Receiver standards Sensitivity 2 microvolts across 50 ohms	
Spurious output Max. 200 microvolts	

RSS 180 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Operation at temp and voltage extremes Transmitter - within 100Hz Receiver - within 100 Hz	FCC	Not specified
	NTIA	Not specified

RSS 181 COAST AND SHIP STATION AM - SSB
1605-28,000kHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

Rated PEP
PEP=2 X Paug.

Category C - 100W min.
V - 30W min.
Y - < 30W.

FCC
80.215(b) Coast station below 27.5MHz

Frequency MHz	Power Watts
2-4	800 day 400 night
4-27.5	10000

(d) Ship Stations

Location & Freq.	Power (Watts)
Inland waters	150
Other except passenger ships	
under 4MHz	400
Over 4MHz	1500
Passenger ships	
under 4MHz	1000
Over 4MHz	300

(f) Fixed stations (Alaska)

Frequency	Power (Watts)	
	Private	Public
1.605-12Mhz	150	1000

RSS 181 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Carrier level See standard for test conditions Class of Emission / Output Relative To PEP A3J: -46dB min. A3H: -6dB max. A3A: -16 ±2dB	FCC: Not specified NTIA: Not specified
Frequency stability Category L ± 20Hz C, V, Y ± 40Hz	FCC 80.209(a) Tolerance (Hz or ppm) Frequency / Coast Stations / Ship Stations / Ship Stn. Approved Before Nov. 1977 1.6-4MHz: 20Hz / 50Hz / 200ppm 4-27.5MHz: 20Hz / 20Hz / 50Hz
Spurious emission Sideband splatter 50%BW<fd<150%BW -28dB 150%BW<fd<250%BW -38dB 250%BW<fd 25mw max.	80.211(a) 50%BW<f<150%BW -25dB 150%BW<f<250%BW -35dB 250%BW<f -43+10 log P dB
Remote from band ~~Single frequencies -43dB relative to PEP in no~~ case > 25mW	-43+10 log P dB

RSS 181 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Audio Response Categories L, C, V - per Figure 2 Y - per Figure 3	No specification	
Residual noise, relative to PEP -43dB either A3H or A3J		
Performance under extreme environmental conditions Frequency stability - Category L ± 20Hz - E,V,Y ± 60Hz Power output - -3dB max.	2.995	Stability required to be maintained on equipment licensed for use in Naritime Services (Part 80) form -20° to +50°C

RSS 181 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Sensitivity A3J 1.5 microvolts across 50 ohms max. A3/A3H 3 microvolts across 50 ohms max.	FCC	Not specified
	NTIA	Not specified
Frequency stability (receiver) Category L ± 2Hz CV ± 60 Hz Y ± 100 Hz	FCC	Not specified
	NTIA	Not specified
Two signal selectivity and desensitization A3J - per Fig. 4 A3/A3H - per Fig. 5	FCC	Not specified
	NTIA	5.5.1 B(2) Slope of selectivity characteristic outside passband 100dB/kHz
Spurious response attenuation Category L, C. V 60dB to 10MHz Y 40dB to 10MHz	FCC	Not specified
	NTIA	Not specified

RSS 181 cont'd

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted	
Automatic Volume Control		FCC	Not specified
Category L, C, V	Audio power variation 10dB max. distortion 15%, readable at 1 volt	NTIA	Not specified
Category	Audio variation not spec. distortion 25% readable at 1 volt.		
Audio Power Output		FCC	No specifications
Categories L, C, V - Use with speaker 2W 15% distortion phones 10mW 10% distortion line feed 12mW 5% distortion		NTIA	No specifications
Category Y - per manufacturer's rating			
Intermodulation Distortion		FCC	No specifications
Categories L, C & V only 20dB below audio input 5 microvolts to 5 millivolts, 15dB at 50mV		NTIA	No specifications

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Spurious output 400 picowatts at any discrete frequency	FCC	Not specified
	NTIA	Not specified
Environmental tests Frequency stability - Category L ± 20 Hz C,V ± 60 Y ± 100	FCC	Not specified
	NTIA	Not specified
Sensitivity - within 3dB of standard	FCC	Not specified
	NTIA	Not specified
Operation at 2182kHz Capable of full carrier operation H3E at 2182kHz	FC	80
	NTIA	Not specified
Change in emission designations Old / New A3J / J3E A3H / H3E A3A / R3E A3/A3H / A3E/H3E	80.369(a)	Ship, coast and survival craft stations must use J3E when operating on 2182kHz.

RSS 182 COAST AND SHIP STATION FM OR AM
156-162.5MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power output Measured power 0 - +1dB relative to manufacturers rating.	FCC 80.215(a) Power is equivalent isotropic radiated power.
Power (rating and measured) Ship station - 25 watt max. rating - 30 watt max. measured at high power - 1.2 watt at low power Category Y - 1 watt max. rating - 1.2 max. measured	FCC 80.215(c) Coast stations 50W except 156.375 to 156.050MHz 10W max. normally 1W Marine utility 10W (e) Ship stations 25W
Spurious emission Close to pass band per Figure 1 10KHz<f<25kHz lesser of 26dB or 95 log $f^2/5.34$	80.211(f) 50%BW<f<100%BW 25dB 100%BW<f<250%BW 35dB 250%BW<f<f 43+10 log P

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
	NTIA	75%BW<f<150%BW 25dB 100%BW<f<300%BW 35dB 300%BW<f Tx power 5kw or more 80 Tx power 20W or less 10 microwatts modulation product, 2.5 microwatts other unwanted in any international maritime mobile band. For maritime mobile above 20 watts increase allowable levels in proportion to increase of power.
At frequencies remote No frequency in band 150-162.5 MHz>2.5 microwatts On all other frequencies 25 microwatts max.		
Modulation capability ± 3kHz deviation at 1000Hz 10% distortion or less ± 5kHz at some frequencies 1000-3000 with 10% distortion or less	80.213	For phase or frequency modulation 156-162MHz peak modulation must be 75-100% Frequency deviation for 100% modulation ±5kHz

RSS 182 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Audio Response Outside cross hatched area of Figure 2.	80.213(e) Audio low pass filter required for coast stations. Attenuation 3-30kHz greater than at 1kHz by at least 60 log f/3 dB. Over 20kHz at least 50dB
Noise level -37dB	Not specified
Transmitter tests environmental extremes Frequency Departure Category C, V, Y ± 1560Hz R.F. ouput L ± 780 Max. degradation 3dB	FCC 80.209

	Coast	Ship
Below 3W	10 ppm	10 ppm
3-10	5	10 ppm
Over 100	2.5	-

NTIA Table 5.1

Transmitter Power W	Station Type	Freq. Tol. ppm
p<3	Coast	100
3<p<50	Coast	50
p<25	Ship	100

RSS 182 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Receiver Tests Power output - Category L & C to drive speaker 2W min. 15% distortion - Drive headphones 10mW, 10% distortion - Line Feed 12mW, .5% distortion Category V & Y attenuation - manufacturer's rating at 15% distortion	Not specified
Sensitivity - 1.0 microvolt across 50 ohms	Not specified
Adjacent channel selectivity and desensitization Minimum of 1 mv on an adjacent channel to degrade SINAD by 6dB	Not specified
Spurious response level Level to produce 20dB of quieting min. 10 mv for categories L & C and 316 microvolts for V and Y.	Not specified

RSS 182 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Intermodulation spurious response attenuation	Not specified

Output of Generator #1	Ratio of 2 or 3 to #1 dB L & C	V & Y
Level for 12dB SINAD 2 & 3 at P	70	50
30 microvolts	45	35
300 microvolts	30	25

Audio response
Outside cross hatched area of Figure 3.

Not specified except as noted above from 80.213(e) re. low pass filter

Noise level (relative to rated power)
L & C -40dB
V & Y -34dB

Not specified

Spurious output
200 microvolts

FCC
80.217(b) Max. allowable electrical field

Frequency MHz	Field Intensity Microvolts/m
<30	0.1
30-100	0.3
100-300	1.0
>300	3.0

RSS 182 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Receiver tests under environmental extremes Increased signal required to meet output 12dB max. Degradation of output 3dB max.	Not specified

RSS 187 MARINE EMERGENCY POSITION INDICATING RADIO BEACON TRANSMITTERS

DOC Requirement

Operating Switch
To be guarded against inadvertent operation.

Emission

Class	Operating Freq. MHz	Stability %	Class of Emission	PERP W	Bandwidth kHz
1	121.5 & 243	.005	A3X	.1 min. 1 max.	25
2	121.5 & 243	.005	A3X	.1 min. 1 max.	25
3	156.75 & sequent. 156.80	.001	FXX	1 min. 10 max.	20

Spurious Radiation
50%BW<f<100%BW 25dB
100%BW<f<250%BW 35dB
250%BW<f 43+10 log P dB

Modulation
Class 1 & 2
Swept 700Hz min. in range 1600-300Hz at 2-4 sweeps/sec.

Equivalent FCC Rule

FCC 80.1053, 1055, 1057
On-off switch may be automatic, turn-off means, protection against inadvertent operation required.

Class	Operating Freq. MHz	Stability %	Class of Emission	PERP W	Bandwidth kHz
80.1053					
A	121.5 & 243	.005	A3N (A3E & Non-optional)	.075 min.	30% power within
80.1055					
B	121.5 & 243	.005	A3N (A3E & Non-optional)	.075 min.	30% power within
80.1057					
C	156.75 & 156.8	.001	G3N	1W min.	

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Signal Format Class 3 Class 3 EPIRB transmits sequentially on Channels 15 and 16 in accordance with an internationally accepted program.	FCC 80.1057(a)	As for DOC.
Operational and seaworthiness tests are under control of the Department of Transport.	80.1053(c)	Power and modulation requirements to be met under environmental conditions per TRCA Document Number DO-183.

RSS 201 RADIO PAGING RECEIVERS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Limit on spurious emission only test specified. Field intensity in microvolts/m. Above 1000MHz 200 microvolts/metre falling linearly (on log-log paper) to 30 microvolts/m at 30MHz.	No FCC or NTIA standards on paging receivers.

RSS 202 BURGLAR ALARM EQUIPMENT

DOC Requirement				Equivalent U.S. Rule, FCC or NTIA As Noted

Frequencies available and limits

	Lower Limit MHz	Centre MHz	Upper Limit MHz
1	421	422	423
2	890	915	940
3	2,400	2,450	2,500
4	5,725	5,800	5,875
5	22,000	22,125	22,250

FCC

15.305(a) Operation allowed on any frequency provided that field strength limited to 15 microvolts/m at a distance of sensor or per 15.307.

15.307

	Band Limits MHz
915MHz	±13
2,450MHz	±15
5,800MHz	±15
10,525MHz	±15
24,125MHz	±50

15.305(c) Band swept field disturbance sensors may be operated on frequencies listed.

Centre Freq. MHz	Limits
2	1.7 -2.3
4.5	4.05-4.955
8.2	7.4 -9.0

NTIA No specification on this equipment

RSS 202 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

Output signal

Band	Radiation Limit mV/m
1	1
2	1,000
3	1,000
4	1,000
5	1,000

15.309(a)

Frequency	Field Strength 50mV/m
915	50mV/m at 30m
2,450	50mV/m at 30m
5,800	50mV/m at 30m
10,525	250mV/m at 30m
24,125	250mV/m at 30m

Spurious emissions

Operating Frequency	Limit
421-423MHz	200 microvolts/m
Assigned ISM band	600 microvolts/m

15.309(b) Harmonic emissions 160 microvolts/m at 30m max. on 915, 2450 and 5800MHz bands. Other emissions 50dB down except 15 microvolts/m at 30m acceptable.

(c) For other bands as above except 2500 microvolts/m at 30 meters OK.

15.311(a) Operation subject to non-interference conditions of 15.3.

15.321 Swept field sensors
- max. in band field strength 1/mV/m at 30m
- out-of-band -40dB
- minimum frequency deviation of half range required
- minimum frequency modulation 40Hz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Tests under environmental conditions Frequency drift less than 2% of frequency band in use.	

RSS 209 CORDLESS TELEPHONES
46 and 49MHz BANDS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

Frequencies

Base	Handset
46.610	49.670
46.630	49.845
46.670	49.860

FCC
15.232 Within 10kHz of any frequency listed.

Base	?
46.610	49.670
46.630	49.845
46.670	49.860
46.710	49.770
46.730	49.875
46.770	49.830
46.830	49.890
46.870	49.930
46.930	49.990
46.970	49.970

Field strength (Max.)
20mV/m at 3m.

Out-of-band emissions
Within 20kHz band centred on authorized frequency.
No emissions in cross hatched area of Fig. 2

15.233
a. Frequency tolerance 0.01%
b. Emissions within 20kHz band centred on authorized frequency 26dB down outside
c. Field strength 10mV/m at 3m.
d. Out of band emissions.

Spurious emissions

Frequency MHz	Field Strength* at 3m
25- 88	40
88- 216	43.5
216-1000	46

* Decibels above one microvolt/m

Band	Field Strengths at .3m Microvolts/metre
25- 88	100
88- 216	150
216-1000	200

RSS 209 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Line conducted spurious emissions Less than 100 microvolts on any frequency from 0.45 to 30MHz	As for DOC.
Environmental Tests Carrier frequency to remain with .01% of standard test frequency.	As for DOC.

RSS 214 WIRELESS MICROPHONE & TELEMETERING
88-108MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Wireless microphone RF output 50 microvolts/metre at 15m or 250 microvolts/metre at 3m	15.162(b) 50 microvolts/m at 15m
Spurious output (max.) (Any) 40 microvolts/m at 3m	As for DOC
Tuning range 88.1-107.9MHz	15.162(a) 200kHz band in range 88-108.
Telemetering Device Same as for wireless microphone.	15.174 Conditions for operation as for wireless microphone 15.163.

SRSP 301.70 LINE OF SIGHT RADIO SYSTEMS FIXED SERVICE
1700-1710MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
4. RF channel spacing 125khz	74.501	STL service is provided on other frequencies in the U.S. 947-952MHz.
5. Transmitter characteristics Power 5 watts per RF carrier Frequency stability ±.0005% Modulation - main carrier FM - sub-carriers - any.		No engineering standards established for these stations (as of 1981).
6. Antenna characteristics Directive - Main lobe 15° between 14dB pts. Back to front 34 dB.	2.106	1700-1710MHz assigned to space research, meteorological satellite in U.S.
	NTIA	

SRSP 301.9 LINE OF SIGHT RADIO SYSTEMS
1900-2290 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel assignment for multi-hop radio systems See also RSP 113.	94.189 Frequency assignments 17,700-19,700 MHz for private operational fixed microwave for channel sharing in remainder of band see 94.61(b) and footnotes. See also 21.502 h re. Digital Termination System assignments.
Transmitter characteristic Power 5W per channel Stability ±0.01%	21.107 Transmitter power Fixed stns. 10W
	21.101 Freq. MHz / Tolerance 18,920-19,700 / .003* 19,700-40,000 / .03 * See rule for grandfather clause.

SRSP 302.5 STATIONS IN FIXED SERVICE
2500 to 2686 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
6. Transmission characteristics	74 Subpart I Instructional TV Service
6.1 EIRP 32dBW per hMHz channel and adjusted for field strength at edge of intended service area of 66dBuV/m.	74.935(a) Power limited by need. Use of directional antennas expected for transmitting and receiving. (b) Power levels above 10W require justification.
6.2 EHAAT $H=R^2/12.6$ r=radius of coverage area (approx. 50km max.)	74.937 Antennas - No height requirement but (c) proposes elevated receiving antennas instead of higher power or elevated transmitting antennas but rule deals at length with use of directional antennas, polarization. Radiation pattern for receive antennas given.
6.3 More power, greater height may be considered to provide adequate coverage. Max. 32dBW EIRP at EHAAT of 200m. If EHAAT increased 25m EIRP reduced 1dB up to 5dB at height of 325m.	
6.4 Polarization - linear orthogonal down 22dB on wanted	74.937(d) Linear or circular polarization acceptable.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
6.5 Spurious emissions relative to visual carrier Carrier harmonies - 60dB 0-.5MHz from band edge - 40dB .5-1.0MHz from band edge - 50dB except intermodulation products at ±920kHz and +2.66MHz down by 46dB minimum.	74.936 Emissions and bandwidth Carrier harmonies - 60dB Other emissions 3MHz above or below upper and lower band edges - 30 dB if power < 10W 40 dB above 10W
6.6 Aural carrier 15±2dB below visual peak	74.935(d) Aural signal power not more than 70 nor less than 10% or visual
6.7 Modulation Visual - vestigal S.G. AM (C3F) Audio - FM (F3E) centre frequency 4.5MHz above visual.	74.936(a) Visual modulation - C3F Aural - F3E or G3E
6.8 Frequency stability Visual carrier ± 500Hz	74.938 Transmission standards (a) Width of IFTS channel -6MHz (b) Attenuation of lower sideband not required to meet any standard but must not cause interference in which case limits of 73.687(a)(3) will apply.
7. Receiver characteristics Antenna gain 22dB Back to front 20dB Orthogonal discrimination 19dB main lobe 6dB side lobes Down converter noise 6dB	

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
	Note: 74.939 sets out requirements to be met by IFTS response stations operating in this band, i.e. 250 mW except 2 watts on showing of need - channel 125Hz wide - emissions outside channel 60dB down.
8. Channelling See BP for distribution of the 31 channels between Fixed and Broadcasting services.	

SRSP 303 LINE OF SIGHT RADIO-RELAY
1710-1900

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel arrangements to make optimum use of band. For details see SRSP. See also RSP 113.	Part 94 Subpart C Covers use of frequencies 1850-1990 and shows paired frequency assignments with 5MHz bandwidths. NTIA standards which apply to the band 1710MHz to 15.35GHz do not include similar assignments.

SRSP 303.5 LINE OF SIGHT FIXED SERVICE
3500-4200 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel assignments for frequencies between 3500 and 4200MHz. See also RSP-113 TRC-43.	No equivalent FCC or NTIA document. This band used for radio location (3500-3700MHz) and fixed and fixed-satellite service (3700-4200MHz) in the U.S. 21.703(a) Max. bandwidth 20MHz 3700-4200MHz 21.710(a) Minimum path 17km. for frequencies in this band. 25.202 3700-4200 MHz used for space-to-earth satellite communication shared co-equally with terrestrial radiocommunication services.

SRSP 305.9 LINE OF SIGHT RADIO SYSTEMS, FIXED SERVICE
5915-6425 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel assignments for multi-hop radio systems.	No equivalent FCC or NTIA standard. 25.202(a) 5117-5183MHz satellite to control centre link 6525-6541.5MHz control centre to satellite Precise frequencies and bandwidths assigned case-by-case. 21.710(a) Minimum path length 17km for domestic fixed radio service. (c) Anticipated loading 900 voice channels within 5 years.

SRSP 307 LINE OF SIGHT
6425-6550 and 6770-6930MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel assignments for radio-relay systems in the co-ordination zone of earth stations in the Communication Satellite Service.	There are no equivalent standards in either FCC or NTIA rules. 94.93(d) Transmit and receive channels in 6525-6875MHz band. 94.92 Technical Standards Table

Frequency MHz	Power W	Tolerance %	Band-width	Beam-width degrees
6525-6575	7	.02	25MHz	7
6575-6875	7	.02	10HMz	5

SRSP 307.1 LINE OF SIGHT SYSTEMS FIXED SERVICE
7125-7725 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel arrangements for band 7125-7725MHz.	No U.S. equivalent.
	2.106 Table of allocation shows frequencies in this band assigned for government use in the U.S. in accordance with international convention.

SRSP 307.7 LINE OF SIGHT SYSTEMS FIXED SERVICE
7725-8275

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel arrangements for band	No equivalent U.S. standard. See note re. SRSP 307.1.

SRSP 308 RADIO RELAY SYSTEMS FOR TV AUXILIARY SERVICES
6590-6770, 6930-7125

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
6590-6770 Band	FCC Part 74 Subpart F Total of 67 channels including 14 in band 6425-7125MHz
4.3 Selection of frequencies - channels assigned on an as available basis. More than one system in an area may use same channel.	74.661 Frequency tolerance (a) TV auxiliary broadcast 99% energy in band (b) STL station .005% of assigned freq. (c) TV translator .002% except FM .005% (d) TV pickup 36.6-40GHz, .005% except for transmitters within an output power of 50mW or less .05%
4.4 Transmitter characteristics (a) Power - maximum 1W (b) Freq. stability - .02% (c) For FM systems peak deviation - 8MHz (d) Total bandwidth - 20MHz	74.636 Power limitations Band / Power Limit Watts / Class of Station (1990-2110MHz) 20 Fixed (2450-2500MHz) 12 Mobile (6425-6525MHz) 20 Fixed (6875-7125MHz) 12 Mobile (12.7-13.25Ghz) 5 Fixed 1.5 Mobile 38.6-40GHz 1.5 Mobile
4.5 Receiver characteristicsl Spurious response - 60dB	
Antenna - Directive horizontal beamwidth 2 degrees between 3dB points	74.637(a) to (d) Emission and Emission Limitations Specified in detail for amplitude, digital and frequency modulation.
	74.637(g) Maximum bandwidths 6425-6525MHz - 25MHz 38.6-40GHz - unspecified.

SRSP 308 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
6930-7125 band 10 channels	
5.3 Some channels assigned to major users, others allotted on case by case basis. Temporary systems may make arrangements with prime users.	73.637 Emissions and limitations Any type suitable for purpose within band limits. Emissions up to 50%-100% of authorized bandwidth, width away from band edges down by 25dB; 50-150% by 35dB; over 150% 43+10 log P dB
5.4 Transmitter characteristics as in 4.4	74.641(a) Antenna systems Fixed stations requirements use directional antennas. For antenna standards see Rule and table. Periscope antennas will be authorized provided they meet above standards. Choice of receiving antennas left to discretion of licensee.
5.5 Receiver characteristics as in 4.5	
5.6 Antenna 4 degree horizontal beam.	74.643 Antenna may not be pointed at geostationary orbit.
	74.644 Minimum part length for band -6425-7125MHz -17km

SRSP 308.2 LINE OF SITE SYSTEMS
8275-8500 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel assignments in the band 8275-8500 MHz	No equivalent U.S. standard. Frequencies in the band 8215-8400MHz are allocated to government use in the U.S. for satellite service. 8400-8500MHz is shared government and non-government principally for space research.

SRSP 310 LINE OF SITE RADIO-RELAY SYSTEMS
890-960 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
	FCC Part 21	
	22.501(g)(1)	Frequencies in this band used paired or unpaired for paging services.
2.6 Band shared with: a. Radio location service b. Industrial Scientific and Medical c. FM Studio Transmitter Links		
4.2 Channel allocations Alternative plans for allocation on limited capacity (6 to 24 and 24 to 120 channel) microwave routes.	94.61(b)	928-929 Frequencies in this band are paired with the band 952-953MHz for multiple address remote stations. 952-960 Shared with International Fixed anc Control Services (For other limitations see footnote 20 to this rule).
5. Tranmitter characteristics	94.63	a through f. Interference criteria.
Power - 5 watts per channel except in special circumstances up to 20W	94.65	Frequency pairs, power and antenna height.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Frequency stability ± .01%	21.101	Stability ± .005%
	NTIA	± 5 parts/million
Spurious emissions - none outside licensed bandwidth	21.106	Out of band 50%BW<fd<100%BW - 25dB 100%BW<fd<250%BW - 35dB 250%BW<fd-43+10log 10 or -80dB
	NTIA	75%BW<fd<150%BW - 25dB 150% BW<fd<300%BW - 35dB Over 300% BW < 50 microwatts for transmitter power less than 5kW
6. Antenna	21.108	Antennas
Directive 60 degrees beamwidth between -20dB points 32 degrees between -13dB Back to front 24dB		Beamwidth 20 degrees between -13dB pt.

SRSP 311 LINE OF SITE FIXED SERVICE
1427-1525 MHz

DOC Requirement		Equivalent U.S. Rule, FCC or NTIA As Noted	
2.4	Two services covered (a) Low capacity point-to-point pulse modulation (b) Subscriber radio point to multi-point	FCC	This band is not used for non-government point to point service nor for rural radio service. No equivalent channel arrangement 1427-1429MHz space operation and land mobile government non-government. 1429-1435, fixed and mobile government and non-government 1435-1530, mobile (aeronautical telemetering).
4.	Channel arrangements as tabulated.	NTIA	Although Part 5.1 of the Manual shows fixed stations assigned to this band the only specification provided covers telemetry only.
6.	Transmitter characteristics		
6.1	Power 5 W/channel		
6.2	Stability ± .01%		
6.3	No significant out-of-band emissions		

SRSP 312.7 FIXED SERVICE
12.7-13.25 GHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Uses (a) Very high capacity microwave systems (VHCM) (12.7-13.2GHz) (b) TV pick-up 13.13-13.25GHz	Part 21 Subpart I Point to point microwave 13.2-13.25GHz Part 74 Subpart F 74.631 TV auxiliary broadcast (12.70-13.25) Part 21 Subpart J Local TV transmission service (TV pick up) 13.2GHz to 13.25
Modulation - UHCM - AM or FM - TV pickup - not specified	21.703(c) AM, FM or pulse 71.704 AM above 70% on peaks Not over 100% on negative
Power - 10 watts/RF channel	21.702 Quoting 21.107(b) 10 watts/RF channel 21.803 See 21.107(b) 74.636 5 watts

SRSP 312.7 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Frequency stability ±.01%	74.661(b) ±.005% except TV translator relay systems .002% 21.101(a) ±.03%
Out of band emissions - No significant out-of-band emissions	74.637(a) FM 50%BW<fd<100%BW -25dB 100%BW<f<150%BW -35dB 150%BW<f -43 log P 74.637(b) All other modulations See rule for formula. 74.661(a) 99% of energy within channel
Bandwidth - Set RSP-113	21.703(g) 25 MHz pt to pt 21.804(d) 25 MHz TV pickup 74.641 TV auxiliary
Antenna - directional - 5° to -18 dB VHCM - 12° to -15 dB TV pickup	1° to d dB .23dB 5 to 10° 74.641(c)(4) 1.5° away from satellite orbit if isotropic power > 45dBW

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Type acceptance of transmitter - See RSP-113	74.655(a) Not required for TV pickup if power 250mlW or less 21.120(a) Type acceptance required
Antenna characteristics - VHCM Beam 5° (18dB) - TV Pickup Beam 12° (15dB)	

SRSP 314.5 Fixed Service
14.5-15.35 GHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Use Fixed service using ananlog or digital modulation linking point to point and matte-point systems, carrying voice, video or data.	FCC	No services in this band are available for non-government use in the U.S.
	NTIA	Fixed Stations
Channel Assignments Sub-bands - A 14.50 -14.70 B 14.70 -14.875 C 14.875-15.075 D 15.075-15.175 E 15.175-15.350	NTIA	No specific assignments
Bandwidth If 50 MHz or more sub-bands A & C used.	NTIA	Minimum to transmit information at desired rate. See Table A, Annex J.
Antennas - Directional Bands A, B, C, E - 2.5° to -3dB - 5° to -18dB Band D - 6.5° to 3dB 8° to -16dB	NTIA	

314.5 Fixed Service cont'd
14.5-15.35 GHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Power Up to 2W per 12.5MHz		
Frequency tolerance Video distribution - FM and AM - DSB - Independent carrier ±.005% - Synchronized carrier ±.01% All other ±.01%	NTIA	50PPM
Out of band emission See TRC 43	NTIA	Modulation other than digital 50%BW<fd<100%BW -25dB 100%BW<fd<250%BW -35dB 250%<fd -43+10 log P or -80dB For digital modulation - In any 4kHz band with centre frequency 50 to 250%BW off assigned 35+.08(p-50)+10 log BW were p=per cent bandwidth BW=authorized bandwidth in MHz

SRSP 317.7 Line of Sight Fixed
17.70-18.14GHz 19.26-19.70GHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Uses LC/MC/HC digital radio systems	FCC (no government services in this band) Part 21 Subpart I Point to point microwave shared with fixed satellite service
Channel assignments described to optimize system design.	
Bandwidth (BW)	21.703 220MHz maximum
40 MHz<BW< or =80MHz or 20 MHz<BW< or =40MHz or 10 MHz<BW< or =20MHz 10 MHz bandwidths to be considered when 18GHz spectrum per SRSP 318.5 fully utilized.	
Spectral efficiency 1.0 bits/sec/hertz	Not specified.

SRSP 317.7 Line of Sight Fixed cont'd
17.70-18.14 19.26-19.70

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power - Radiated (EIRP) 55 dBW/channel to antenna input BW MHz / Power (Watts) 80 / 10 40 / 5 20 / 2.5 10 / 1.25	21.702 Cites 21.107(b) 10W
Frequency stability 0.003%	21.101 .03%
Modulation Digital	21.703(c) AM, FM or pulse 21.704(a) For AM nominal 70% min. 100% max. on negative peaks
Out of band emission In any 1MHz band with centre frequency 50 to 250% BW off assigned not less than 11dB or 11+0.4(P-50)+10 log BW p=per cent bandwidth BW=bandwidth in MHz 56dB max. required.	21.106(a)(1) For modulation except digital: 50%BW<fd<100%BW -25 dB 100%BW<fd<250%BW -35 dB 250%BW<fd -43+10 log P or 80dB (2)(ii) For digital except as noted below. In any 1MHz band with centre frequency 50 to 250% BW off assigned not less than 11dB or 11+0.4(p-50)+10 log B (as for DOC)

SRSP 317.7 Line of Sight Fixed cont'd
17.70-18.14 19.26-19.70

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
	(4) For Digital Transmission System Channels In any 4kHz band with centre frequency off 50% of channel bandwidth to 50% + 500kHz A=50+.06 (F-0.5B)+10 log N dB or 50+10 log N minimum A=attenuation B=bandwidth F=kHz off channel centre N=number of active channels
Antenna characteristics 3° 3dB 6° 19dB 60dB back to front	Directional 5° to 10° -25dB 100° to and including 180° -55
Type acceptance of transmitter	21.119 Transmitters licensed for services governed by this part not licensable for non-common carrier communications purposes, except mobile transmitter type-accepted for specific service.

SRSP 321.2 FIXED SERVICE
21.8-22.4 23.0-23.6 GHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Channel allocations 12 in each part of band.	
Transmitter power 1 watt/channel normally, up to 10 if justified.	
Frequency stability 0.03%	21.101(a) Frequency Tolerance Freq. MHz: 19700-40000; Fixed: .03; Mobile: .03
Out-of-band emissions Analog - All significant emissions in band.	21.106(a)(1) For transmissions other than digital 50%BW<fd<100%BW -25dB 100%BW<fd<250%BW -35dB 250%BW<fd -53+10 log P or -80dB
Digital For digital In any 1 MHz band with centre frequency 50 to 250% BW off assigned not less than 11 dB or 11+0.4(p-50)+10 log B (as for DOC)	(a)(2) For digital In any 1MHz band with centre frequency 50 to 250% BW off assigned not less than 11dB or 11+0.4(p-50)+10 log B (as for DOC)

SRSP 501 LAND, FIXED AND MOBILE
406.1-430 and 450-470 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Uses Medium capacity mobile radio telephone systems.	
Channel assignments 414-415MHz and 419-420 priority givent to very low capacity fixed links. Other parts of the band similar use will be on a secondary non-interference basis to land mobile.	90.261 Assignment in band 450-470 to certain services for fixed operations on a secondary basis to land mobile.
Channels spaced 25kHz as shown in Table (see std) some 12.5kHz spacing.	22.501(b) Frequencies in band 454-460MHz for land mobile.
Bandwidth In listed metropolitan areas low capacity fixed links one voice channel per RF channel may be authorized.	
Systems with up to 6 multiplexed voice channels with BW up to 90kHz 120km from centre of metroplitan areas.	

SRSP 502 FIXED AND MOBILE
806-321 and 851-866

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
This plan is principally descriptive of the suballocation of frequencies within the bands for various radio systems. Technical standards are set out in other documents.	90.613 Frequencies available in 806-824 and 851-869MHz bands by channel number 1 through 830.

SRSP 503 CELLULAR RADIOTELEPHONE
825-845 and 870-890 MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted	
Use This service provides mobile radiotelephone service based on communication with fixed transmitters strategically located in the region served. For complete technical details see RSS 118.	FCC	For data equivalent to that provided by SRSP 503, see Part 22, subpart K, 22.900 to 22.905. For technical comparison see notes accompanying RSS 118.
Channel assignments Band 825-845 used for mobile and 870-890 base transmission. There are 666 paired channels spaced 30 kHz. SRSP 503 shows details.		
Power Base station - 100W ERP Mobile - 6.3W ERP If antenna height exceeds 150 metres base station power is to be reduced.	22.905	Antenna height-power for base stations.

TB - 1 INFORMATION RELATING TO THE REGULATION OF RADIO APPARATUS CAPABLE OF RECEIVING TELEVISION BROADCASTING

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
An informative bulletin in Q & A format clarifying the requirements of parts of General Radio Regulations.	There is no equivalent U.S. document.

TB - 3 CABLE COMPATIBLE TV RECEIVER MEASUREMENT METHODS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
The methods presented are those in use in the Department as of 1982. They do not constitute a standard, other methods yielding coincident results are acceptable if properly documented.	There is no equivalent U.S. publication.

TB - 4 CABLE CONVERTING TV RECEIVER MEASUREMENT METHODS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
The methods presented are those in use in the Department as of 1982. They do not constitute a standard, other methods yielding coincident results are acceptable if properly documented.	There is no equivalent U.S. publication.

TRC 51 CERTIFICATION OF LOW-POWER DEVICES
300-400MHz

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
General - voice or data communication prohibited - continuous or regular predetermined lines of transmission prohibited - max. duration two seconds - no readily accessibly external controls.	15.120 Prohibited manufacture of door openers using frequencies above 70MHz as of September '83.
Transmitter Radiation Levels Band Limits MHz / Field Strength Microvolts/m at 3m 310-320 — 6,000 350-360 — 7,700 380-400 — 9,200	2.106 Table of Frequency Allocation No allocation to low-power devices in the band.
	15.116(b) Non-voice communication device Six frequencies in 27MHz band. (c) Frequency tolerance ±.01% (d) Emission within 20kHz of carrier (e) RF output 10mV/m at 3m. (f) All emissions 10kHz or more off carrier <500 microvolts/m.

TRC 51 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Spurious and out-of-band emissions - Transmitters All spurious emissions outside the permitted bands above to be down at least 20dB on modulated fundamental and meet the following. Band MHz / Field Strength Microvolts/m at 3m 25- 70 — 320 70- 200 — 500 200-1,500 — 500-5,000 (except in band) — linear interpolation No emission above 5 microvolts/m at 3m in the following bands. MHz 75 - 75.2 108 - 136 242.8- 243.4 328.6- 335.4 406.1- 410 608 - 614 960 -1,215	15.184 Provides for continued use of door openers in bands above 70Mhz but no further manufacture, importation of applications for certification after September 1, 1983. Emission in bands listed (see standard) which include those listed by DOC not to exceed 15 microvolts/m at 1m.

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted

Spurious output - Receivers

Frequency	Max. Level microvolts/m at 3m
25- 70	320
70- 200	500
200-1500	500-5,000 (Linear interopolation)

Transmitter frequency tolerance
Must remain within assigned band.

TRC 53 TECHNICAL REQUIREMENT
TV TRANSMITTERS FOR REMOTE COMMUNITIES

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power Visual - VHF up to 2W PEP - UHF up to 10W PEP Aural - 2 to 20% of video	74.735 Power limitation; VHF - .01kW peak UHF - 1KW as measured at final amplifier stage. Antenna gain acceptable and UHF station using circular polarization may use Tx power.
Channel allocations - standard	74.702 Any standard channel except the UHF channel 37.
Carrier stability Visual ±5kHz between 15° and 25°C nominal line voltage	74.750(c)(3) -30 to +50°C (i) .02% up to 100W (ii) .002% over 100W (iii) ±1kHz for offset carrier operation.
Aural ±1500Hz with respect to video	74.750(d)(2) ±1000 with respect to video, -30 to +50°C, line voltage ±15%
Spurious emissions and intermodulation products -40dB except 30dB at -4.5MHz and +9.0MHz to visual carrier.	74.736(c) Emissions 3MHz or more out of band attenuated by: 30dB - 1W output 50dB - Over 1W up to 100 60dB - Over 100W 74.750(c)(2) In band harmonics -60dB

TRC 53 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Group delay Within 120 microseconds of delay per RSS 151.	Not specified except: 74.750(c)(1) Signal at input to be maintained at output.
Audio response ±3dB 100-10,000Hz 75 microsecond pre-emphasis	73.687(b)(2) ±3dB 50 to 15,000Hz 75 microsecond pre-emphasis

TRC 54 FM BROADCAST FOR USE IN REMOTE COMMUNITIES

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power up to 10W	74.1235(a) Up to 10W amplifier except that amplifiers output east of Mississippi or in Zone I-A, 1W.
Channel - standard allocation	74.1202(a) and (b) (1) Commercial FM translators all local use channels. See 74.1202(b)(1). (2) Non-commercial FM translators, channels per 73.501. (3) In Alaska.
Carrier stability ±5kHz	74.1250(e)(1) Type acceptance required ±.005% frequency variation -30°C to ±50°, ±15% line voltage
Spurious emissions -45dB 600kHz off carrier	74.1236 Emissions and Bandwidth specified generally:

Distance of Emission From Centre Frequency	Min. Attenuation Below Unmodulated Carrier
120-240kHz	25dB
240-600kHz	35dB
Over 600kHz	60dB

TRC 54 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Audio response ±3dB 100Hz to 10kHz 75 microsecond pre-emphasis	Not specified.
Harmonic distortion - 3% 100-10,000Hz at F.D. ±35kHz	Not specified

TRC 55 SUPPRESSION OF INDUCTIVE INTERFERENCE
FROM SMALL LIGHTING PLANTS

DOC Requirement	Equivalent FCC Rule
Recommended procedures for reducing commutator and ignition noise picked up by sensitive radio receivers. No specific standards are given.	There is no equivalent FCC document. There is a Society of Automotive Engineer's Standard, J.551 (A suffix designates the date of issue.)

TRC 59 TECHNICAL REQUIREMENTS FOR THE CERTIFICATION OF SCRAMBLED TV SYSTEMS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Coding process not to degrade signal, compatibility with M/NTSC specification required.	73.682(b) Subscription TV technical systems, deviations from characteristics of signal may be authorized by FCC.
No increase in spectral energy of signal beyond limits set by RSS 151, 154, 157.	
No alteration of visual or aural carriers.	73.682(a)(21) Limitations on signal corresponding to those by DOC re. scrambled TV apply to transmission of test, cue, control or identification signals.
	See also 73.641, 73.644 re. subscription TV.

TRC 60 TECHNICAL REQUIREMENTS - RECEIVERS WITH DECODERS

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Basically a requirement that the decoding does not cause any excessive cabinet radiation or spurious emission.	No equivalent U.S. specifications found.

Frequecy MHz	Field Strength at 3m microvolts/m	Signal at VHF Terminal Level Across 75 ohms dB mV
5- 30	70	-50
30- 88	100	-35
88- 216	150	-26
216-1,000	200	-10

TRC 61 TECHNICAL REQUIREMENTS TV RECEIVER INTERFACE

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Proposed (1981) standards for operation of television receiver interface devices. Max. field strength at 3m microvolts per metre. Frequency MHz / Field Strength 30- 88 / 100 88- 216 / 150 216-1,000 / 200 Line conducted interference 250 microvolts to grid at powerline 450kHz to 30MHz Transfer switch Max. voltage at antenna terminals of switch 346 X square root of antenna impedence.	No equivalent U.S. specification found.

TRC 70 SUPPLEMENTAL PERFORMANCE STANDARDS
STEREO AND MULTIPLEX TV EQUIPMENT

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Incidental phase modulation Carrier phase modulation Less ±30 white to blank ±5° blank to synch	FCC 73.682(c) Provides standards for TV multiplex, requires that transmission meets 73.687(b).
Chrominance sideband ±5° referenced to average phase of colour burst.	
Aural transmitter Input impedance - Audio, 10,000 ohms resistive - Composite 75 ohms resistive, unbalanced - Subcarrier 75 ohms resistive unbalanced Composite input level - 3.0 volt peak to peak Subcarrier level - 2.0 volt peak to peak	
Modulation capability ±50kHz at 1% distortion	73.687(b)(1) Aural transmitter must operate ±25kHz, ±40kHz recommended

TRC 70 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Amplitude response - audio Within 1dB of 70 microsecond pre-emphasis curve	73.687(b)(2)
Phase response - aduio Max. phase shift 60°	Not specified.

TRC 71 MINIMUM TECHNICAL REQUIREMENTS
TV TRANSMITTERS 2500-2686

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Power Visual - to be specified by manufacturer	74.935 Minimum required to perform proposed service justify need for over 10W
Aural - 2 to 5 per cent of visual	(d) Aural signal 10-70% of visual
Channel Width - 6Mhz	74.936(b) 6MHz
Frequency stability Visual ±500Hz 0°C to 30°C rated power input	74.961 Visual ±60kHz
Aural ±1kHz relative to visual carrier 0°-50°C	73.687(c)(1) Aural ±1kHz w.r.t. visual carrier.
Spurious emissions Any below 18GHz except intermodulation products -60dB, 25 microwatts max.	74.936(b) Harmonics 60dB below peak visual all other 3MHz above or below band edges 30dB at less than 10W 40dB at 10W or more Greater attenuation if interference caused
Intermodulation products Except as noted all i.m. products -40dB at carrier ±920kHz and carrier ±2.66MHz -46dB Out of channel attenuation 40dB at edge falling to 50 at 0.5 and 1.0 MHz beyond upper and lower edges respectively, 50dB beyond.	Covered under spurious emissions above.

TRC 71 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
Differential gain 10% for 10, 50 and 90% APL	73.687(g) RF output to track video input between reference black and reference white.
Differential phase 7° for 10, 50 and 90% APL	
Group delay Per Appendix E of RSS 154 S/N ratio 50dB video to rms noise.	73.687(5) Envelope delay characteristics
Audio frequency response ±2dB 50-15,000Hz 75 microsecond pre-emphasis	73.687(b)(2) Audio response Equivalent to DOC standard.
Harmonic distortion 2% 50-15,000Hz at 100% modulation	73.687(b)(3) Harmonic Distortion Frequency Hz — Distortion % 50- 100 — 3.5 100- 7,500 — 2.5 7,500-15,000 — 3.0

TRC 71 cont'd

DOC Requirement	Equivalent U.S. Rule, FCC or NTIA As Noted
FM S/N Ratio 45dB w.r.t. 100% modulation	73.687(b)(4) -55dB with visual transmitter not in operation.
Intercarrier FM noise ratio 45dB w.r.t. 100% modulation	Not specified
Multichannel sound See BS 15 for details	Not specified

COMPARISON OF CANADIAN AND AMERICAN TECHNICAL STANDARDS APPLICABLE TO THE USE OF THE RADIO FREQUENCY SPECTRUM