



TB-1
Issue 2
September 12, 1984

Spectrum Management

Technical Bulletin

Information Relating to the Regulation of Radio Apparatus Capable of Receiving Television Broadcasting

Introduction

Industry Canada's requirements concerning radio apparatus capable of and intended for receiving television broadcasting are contained in *General Radio Regulations, Part I*, (GR1), Sections 18 and 19 and *General Radio Regulations, Part II*, (GR2), Sections 130 to 134 inclusive. The Regulations as promulgated pertain to three specific types of radio apparatus: standard television apparatus, cable compatible television apparatus and cable converting television apparatus. These apparatus are more commonly referred to as: standard TV receivers, cable compatible TV receivers and cable TV converters respectively.

Purpose

The purpose of this bulletin is to clarify the application of the Regulations in the form of the following questions and answers, for the guidance of manufacturers and importers.

1. Q. Is it permissible to offer for sale, for use in Canada, standard television receivers which have some inherent mid or super-band cable channel capability?
 - A. Standard television receivers which are not intended for mid or super-band operations (i.e., do not have any dial positions, marking, switches, etc. for mid and super-band channels), but which can be incidentally tuned to these channels, are considered as standard TV receivers and may be sold. However, these receivers must meet the requirements of Section 132(1)(f) which refers to Section 133(a)(viii) concerning local oscillator levels, and must not be advertised as having mid or super-band receiving capability. The local oscillator requirement does not apply to TV receivers whose tuning systems, because of production tolerances, also permit the additional reception of Channel I (below Channel 7) and Channel J (above Channel 13) only.
2. Q. If a cable compatible television receiver is properly labelled as such, is it permissible to label it also as a standard receiver?
 - A. Yes. A cable compatible television receiver, when used in the off-air mode, must meet all the requirements of a standard TV receiver as indicated in Section 133(b).
3. Q. What is considered to be a permanent label or marking?
 - A. Any label or marking is considered permanent if it cannot be removed without the use of tools.
4. Q. Is there an additional labelling requirement for TV receivers under the *Radio Interference Regulations (Radio Noise Limits Order)*?
 - A. The *Radio Interference Regulations* which replace the *Radio Noise Limits Order* require all TV receivers to comply with established limits (Sections 10 to 13). However, there is no mandatory requirement for a label to indicate compliance. Should a manufacturer or importer wish to use a label, it may be combined with the one that is required under GR1, Section 19(3).
5. Q. Has the Minister approved any testing procedure as referred to in the *General Radio Regulations, Part I*, Section 19(1)?
 - A. Yes. The measurement methods used by the Department in ascertaining compliance with the *General Radio Regulations* have been published. Technical Bulletin 3 (TB-3) presents the measurement methods for cable compatible television receivers and Technical Bulletin 4 (TB-4) gives the measurement methods for cable converting television apparatus. For standard receivers, the method for measuring noise figure outlined in TB-3 is also acceptable. These bulletins are not intended to serve as a complete engineering standard and may be subject to future revisions. The methods described permit a certain flexibility in the measurement of parameters to allow the use of available test equipment. The Department will accept other methods provided they are fully documented.
6. Q. Are TV under the Regulations limited to the reception of TV broadcasting Signals?
 - A. No. The Regulations only address the TV broadcasting receiving capabilities of a TV receiver. Therefore, any additional features such as sound broadcasting reception capability (e.g. AM, FM, mono or stereo, and short-wave reception) inputs/outputs for connecting auxiliary equipment or apparatus, etc., are allowed provided that the full requirements of the Regulations pertaining to television reception are met.
7. Q. Do the TV receiver Regulations preclude the sale of AM/FM receivers that are also capable of receiving the audio portion of a TV transmission?
 - A. No. Multiband radios that do not display the images of objects are not included in the Department's Regulations on radio apparatus capable of receiving television broadcasting.

8. Q. Do the Regulations permit the use of numerical designators to identify mid and super-band channels?
- A. Yes. Section 130 of the Regulations states that mid and super-band channels are commonly identified by alphabetical designators. This does not preclude the use of numerical or alphanumerical channel designators. The identification of channels in these bands is left to the discretion of the manufacturer.
9. Q. What is the effective date of the Regulations?
- A. The Regulations came into effect in October 1978 and, unless otherwise specifically stated therein, this is the effective date. However, there are other dates specified in certain sections of the Regulations for the purpose of the phasing-in of specific requirements.

10. Q. Are there any regulations under the *Radio Act*. Other than the *General Radio Regulations, Part I*, Sections 18 and 19, and *General Radio Regulations, Part II*, Sections 130 to 134 inclusive that are applicable to technical requirements for TV receivers?
- A. Presently, the only other regulations dealing with technical requirements for TV receivers under the *Radio Act* are contained in Sections 10 to 13 inclusive of the *Radio Interference Regulations* (R.I.R.).
11. Q. Do the Regulations require that a common VHF-UHF antenna be equally efficient in the UHF mode as in the VHF mode?
- A. There are no requirements at this time for equal sensitivity for the full range of the VHF and UHF channels.
12. Q. Does the use of AFC circuitry for VHF and other cable channels require that AFC circuitry also be provided for UHF tuning in view of the comparable tuning requirements in Section 132(1)(c)?
- A. The use of AFC is not a technical requirement. The only requirement for comparability relates to the ease of operation and in particular with respect to location, accessibility and readability for channel identification purposes.
13. Q. Do the Regulations allow the sale of TV receivers without any antennas?
- A. The intent of the Regulation is met if TV sets are sold without any antennas; that is, if no VHF antenna is provided then no UHF antenna need be provided.
14. Q. What are the antenna terminal impedance requirements for TV receivers?
- A. A cable compatible TV receiver must have a 75 ohm co-axial input and may also have a 300 ohm terminal, whereas a standard TV receiver may have a 75 ohm or a 300 ohm terminal or both. The input impedance for the UHF antenna is not specified.
15. Q. What are the tuning position requirements for TV receivers?
- A. For a standard TV receiver, a minimum of twelve tuning positions are required, each of which must be able to be tuned to any one of the VHF or UHF channels. However, if twelve positions are dedicated only to the twelve VHF channels, an additional six or more positions must be provided, each of which can be preset using manual selection, to receive any one of the UHF channels.

For a cable compatible TV Receiver, a minimum of eighteen distinct tuning positions are required. All eighteen positions must be capable of being tuned to any one of the VHF, or mid-band or super-band channels. Also a minimum of six tuning positions must be provided to tune any of the UHF channels. A separate variable control to supplement the preset controls is not required.

16. Q. Does Section 134 of the Regulations apply to a cable converting apparatus when it is an integral part of the TV receiver?
- A. Section 134 applies only to a cable converting unit when sold as a separate item to supplement a standard TV receiver. If the cable converter unit is built into the receiver, then the cable compatible receiver regulations apply as per Section 133.
17. Q. Does a manufacturer or importer require approval by the Department before offering for sale radio apparatus capable of receiving television broadcasting?
- A. Departmental approval is not required prior to offering for sale radio apparatus of the class of apparatus that is capable of receiving television broadcasting, as referenced in Section 18(1). The manufacturer or importer is required to forward to the Department only the type number and specifications of each type of apparatus being offered for sale and to perform the necessary tests on a representative sample unit of each type to ensure compliance with the technical requirements of Sections 131 to 134 inclusive. The results of these tests need not be submitted but must be retained for a period of five years to be made available to the Department on request. The manufacturer or importer, by labelling the device as required in Section 19(3), is certifying that departmental requirements are met.
18. Q. Do the Regulations apply to video monitors or computers with video monitors, or to TV sets without UHF tuners which are designed for cable reception in hospitals or hotels?
- A. No, the Regulations do not apply to video monitors, computers with video monitors, nor to TV receiving equipment intended for a purpose other than home entertainment.
19. Q. Does the tuning capability of a cable compatible receiver have to be simultaneously compatible when switched from the cable to the off-air mode?
- A. No. It is expected that the apparatus may require adjustment of the preset selection controls to change from the cable to the off-air mode or vice versa, as per Section 133(a) and (b).
20. Q. If a TV set has an electronically controlled channel selection search facility, sequentially selecting each channel with a pre-determined video signal level, does this meet the preselection requirements of the Regulations?
- A. Yes, with the provision that the set be also equipped with an over-ride control which will allow the viewer to tune by manual selection any channel where the pre-determined video signal level is below the threshold of the lock-in circuitry. It must also meet all of the other applicable requirements of Sections 132 and 133.

21. Q. Does section 131(1)(b) limit the maximum number of channels available on a cable compatible TV receiver to 35 channels?
- A. No. There is no upper limit imposed by the Regulations. Extensions in tuning above 300 MHz may be introduced as developments in technology make this feasible.
22. Q. Are cable compatible TV sets that are capable of tuning channels below 120 MHz (commonly designated as -A1, -A2 etc.) permitted to be sold in Canada?
- A. Yes. However, it must be recognized that cable TV systems in Canada are not authorized to use the band from 108 to 120 MHz because of potential interference problems with aeronautical navigation radio services.
23. Q. Is it permissible to add baseband, RGB or other input and output terminals to TV receivers?
- A. Yes. There is no restriction on the addition of terminals for various services such as teletext, pay TV, etc., and the Department encourages such additions.

"The contents of this bulletin are an expression of the Department's practice, procedure and policy regarding the regulations referred to herein. However, the Department reserves the right to modify its practice, procedure or policy at any time, without notice, if, in the opinion of the Department, the circumstances, or regulations, affecting the management of this aspect of the radio frequency spectrum so warrant. Notice of such changes will be given in advance whenever possible. This bulletin is not intended to replace the regulations themselves, nor is it comprehensive in that it does not answer all possible questions. Therefore, the relevant regulations and amendments thereto should also be consulted for all purposes of complying with the law."

ORIGINAL SIGNED BY
G. R. BEGLEY

G. R. Begley
Acting Director
Broadcasting Regulation Branch