



**UGANDA
COMMUNICATIONS
COMMISSION**

**UGANDA COMMUNICATIONS COMMISSION STANDARD
FOR OPERATION OF PRIVATE LAND MOBILE RADIO
COMMUNICATION IN UGANDA**

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1. INTRODUCTION

Private Land Mobile Radio (PLMR) or Private Mobile Radio (PMR) Systems are one- or two-way analog and digital communication conventional/push-to-talk or trunked systems, in which fixed or mobile radio stations are used for land mobile communication services by a closed group of users utilizing one or more radio frequency channels. These can take different forms - stationary/fixed (base station units), mobile (installed in vehicles), or portable (handheld walkie-talkies). PLMR/PMR communication systems are used by government agencies in times of emergency, as well as by private businesses or industries to address voice and low-level data communication needs in the coordination of people and materials in the respective work environment.

PLMR/PMR systems are known to provide extensive coverage at low power. This is largely attributed to the propagation characteristics of the very high frequency (VHF) and ultra-high frequency (UHF) bands in which the systems typically operate.

Uganda Communications Commission (the Commission) is mandated to define regulatory and technical conditions to facilitate effective communications in Uganda. To this end, the development of the Private Land Mobile Radio (PLMR) standard is premised.

The authority to develop these standards is derived from among others, Sections 5(1)(c) and 25 of the Uganda Communications Act, 2013 (the “Act 2013”), the Uganda Communications (Licensing) Regulations concerning radio communication services, and installation and operation of radio communications services’ equipment.

2. OBJECTIVE

These standards seek to harmonize the regulatory and technical operational requirements for the analog and digital PLMR/PMR operations in Uganda, to facilitate the communication needs of government agencies as well as private businesses in executing day-to-day activities.

3. AMENDMENT

This standard shall be subject to periodic reviews to enable inclusion of any changes as a result of evolution in the radio communications industry, changes in policy or regulatory direction as well as emerging regional and international best practices.

4. INTERPRETATION

The terms in this document shall carry the interpretation used in the Act and respective regulations issued thereunder unless otherwise defined below;

- (a) **“Authorisation”** refers to the grant by Uganda Communications Commission, the right to use the specified radio frequency under sections 5(1)c, 21, and 24 of the Uganda Communications Act 2013;
- (b) **“Act 2013”** shall refer to the Uganda Communications Act 2013;
- (c) **“Communication Services”** means services performed consisting of the dissemination or exchange of audio, visual, or data content using postal, radio, or telecommunications media, data communication, as well as broadcasting.
- (d) **“Commission”** shall refer to the Uganda Communications Commission.

5. APPLICABLE LEGISLATION AND REGULATION

The implementation of this standard is subject to the provisions of;

- (a) The Uganda Communications Act 2013;
- (b) The Uganda Communications (Licensing) Regulations, 2019;
- (c) The Uganda Communications (Fees and Fines) regulations 2019
- (d) The Uganda Communications (Equipment Type Approval) regulations 2019;
- (e) The Uganda Communications Commission Terms and Conditions For Radio Frequency Authorisation In Uganda 2019

6. SCOPE

These standards outline the principles, technical and regulatory requirements for the operation of PLMR/PMR communication systems in the VHF and UHF radio frequency bands as applicable in Uganda.

7. APPLICABILITY

This standard shall apply only to operations of PLMR/PMR communication systems in the UHF and VHF bands under the national table of frequency allocation.

8. REGULATORY AND TECHNICAL OPERATION REQUIREMENTS

8.1. Regulatory and Authorisation requirements

- a) All PLMR operations shall be required to apply for a radio frequency spectrum authorization before deployment and operation except for license-exempted operations (not covered under these standards).
- b) A person interested in operating PLMR/PMR station(s) shall express their intention in writing to the office of the executive director, Uganda Communications Commission, and submit the same either electrically via registry@ucc.co.ug, or physically at any of our branch offices around the country or via post to P. O. Box 7376, Kampala in addition to the following;

- i. Duly completed radiocommunications technical forms (accessible on ucc website/ www.ucc.co.ug);
- ii. Completed equipment type approval application forms (accessible on ucc website/ www.ucc.co.ug);
- iii. Copies of the technical specifications (in the English Language) of all equipment planned for deployment;
- iv. Copies of company registration (applicable to companies) or passport/national identity card (applicable to individuals), and;
- v. Any other information/requirement shall be deemed relevant at the time.

8.1.1. Other regulatory requirements

All authorized PLMR operators shall be required to:

- (a) ensure that equipment deployment and operation comply with the authorization's terms and conditions;
- (b) seek permission from the Commission before the change of any of the authorized operational parameters including the base station transmitter locations;
- (c) keep up-to-date records of network operation and status;
- (d) apply for renewal of authorization at least three (3) months before the expiry date of the running authorization.

Note:

Authorization to operate PLMR/PMR radio communication systems in Uganda shall be strictly for private use and not for the provision of commercial communication services. Where PLMR/PMR is to be used for the provision of commercial communications services, additional licenses shall apply.

8.1.2. Technical Requirements

The technical requirements and specifications for PLMR, including frequencies, power limits, and applicable channel bandwidths are specified in *Table-1 of Annex-1 attached* hereto.

9. APPLICABLE FEES

All applicable fees or charges shall be levied and collected under the provisions of Uganda Communication (fees and licensing) regulations 2019 (as amended) or as shall be communicated by the Commission from time to time.

10. STAKEHOLDER RESPONSIBILITY

10.1. The Commission

The Commission shall regularly review and update the provisions of these standards to ensure continued relevance and effectiveness.

10.2. Industry players (Importers, Vendors, and PLMR/PMR operators)

- a) It is the responsibility of the PLMR/PMR users, or any other person associated with PLMR/PMR applications to acquaint themselves with the relevant laws and regulations that govern the radio communications in Uganda;
- b) Ensure that the PLMR/PMR and associated radio equipment are duly type-approved and authorized by Uganda Communications Commission before use;
- c) Adhere to the provisions of these standards as well as other applicable laws and regulations developed thereunder.

11. ENFORCEMENT

- (a) Any operator that fails to comply with the standards set herein shall be deemed guilty of contravening the Act; and shall be subjected to such remedial action or enforcement by the Commission, including but not limited to the withdrawal of spectrum authorization;
- (b) Remedial action by the Commission in respect of such contravention may include:
 - i). issuance of a written warning with a deadline for compliance by the respective operator;
 - ii). imposing fines under the Act;
 - iii). take any other measure deemed reasonable in the circumstances.

Annex 1: Technical specifications

Table 1a: Technical specifications for PLMR-Spectrum and permissible emission limits.

Type of Services		Channel Spacing (kHz)	Operating frequency ranges (MHz)	Max Transmitter output power (Watts)	Reference
VHF Radio (video)	Handheld	12.5/25	137.0125 – 139.4000 142.6000 – 144.0000 141.0000 – 142.0000	5	ETSI EN 300 086-1 ETSI EN 300 296-1
	Mobile			25	
	Base station			50	
UHF (voice + data)	Handheld	12.5/25	443.0125 – 444.9875 448.0125 – 449.9875 456.5250 – 456.9750 466.5250 – 466.9750 457.5250 – 457.9750 467.5250 – 467.9750 458.0000 – 459.9750 468.0000 – 469.9750	5	ETSI EN 300 086-1 ETSI EN 300 296-1
	Mobile			25	
	Base station			50	
VHF radio (data)	Handheld	12.5/25	163.0000 – 164.0000 173.0000 – 174.0000	5	ETSI EN 300 113-1
	Mobile			25	
	Base station			50	
UHF radio (data)	Handheld	12.5/25	450.0000 – 452.0000 460.0000 – 462.0000	5	ETSI EN 300 113-1
	Mobile			25	
	Base Station/ Repeater			50	
Trunked radio (analog)	Handheld	12.5/25	806.0000 – 811.0000 851.0000 – 856.0000 811.0000 – 816.0000 856.0000 – 861.0000	5	ETSI EN 300 086-1 ETSI EN 300 296-1
	Mobile			25	
	Base station			50	

Table 1b: Technical specifications for PLMR-Spectrum and permissible emission limits (continued).

Type of Services		Channel Spacing (KHz)	Operating frequency ranges (MHz)	Max Transmitter output power (Watts)	Reference
Trunked radio (digital)	Handheld	6.25 – 1 250	380.0000 – 390.0000	5	TETRA : Conformity assessment Requirements - ETSI EN 300 394-1 - ETSI EN 300 396-2 - ETSI EN 300 392-2 - ETSI EN 303 035-1 - ETSI EN 303 035-2 iDEN : FCC Part 90 GoTa : 3GPP2 C.S0010 3GPP2 C. S0011
	Mobile		390.0000 – 400.0000	25	
	Repeater		410.0000 – 420.0000	50	
			420.0000 – 430.0000		
Marine radio	Handheld	25	452.0000 – 456.4750	5	ETSI EN 300 086-1 ETSI EN 300 296-1
	Mobile		462.0000 – 466.4750	25	
	Base station		806.0000 – 811.0000	50	
			851.0000 – 856.0000		
			811.0000 – 816.0000		
			856.0000 – 861.0000		
			816.0000 – 821.0000		
			861.0000 – 866.0000		

Table 1c: Technical specifications for PLMR-Spectrum and permissible emission limits. (continued)

Parameter	Emission limits	Reference
Spurious emission	0.25 μ W (-36 dBm) (for 30 MHz to 1000 MHz)	ETSI EN 300 296-1
	1 μ W (-30 dBm) (for 1 GHz to 12.75 GHz)	
Frequency deviation	\pm 2.5 kHz	
Spurious radiation	-57 dBm (30 MHz to 1000 MHz)	
Power Spectral Density	\leq -116dBm/12.5kHz at and beyond the geographical boundary(ies) specified in the license	