

## CST Technical Specification

# Requirements for Radio Modules

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This technical specification is issued by The Communications, Space and Technology Commission in the Kingdom of Saudi Arabia in accordance with the provisions of the Communications and Information Technology Act issued by Royal Decree No. (M/106) dated 02/11/1443 AH and its bylaw, and the Commission's regulation.

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**Document History Table**

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## 1- Scope

- 1-1 This specification specifies the requirements for radio transmitter modules; equipment consisting of the combination of two or more products where at least one of them is a radio equipment. It covers multi-radio, combined radio and non-radio equipment.
- 1-2 A radio transmitter module is a telecommunication device which is communicating using radio frequencies but not operational on its own as basic elements.

## 2- Enforcement

- 2-1 This specification shall enter into force from issue date.
- 2-2 Any previous version of this technical specification is withdrawn.

### 3- General Requirements

- 3-1 All equipment must comply with the requirement of CST specification GEN001, be safe and must not adversely affect other electrical equipment.
- 3-2 All telecommunications and radio terminal equipment must comply with the relevant technical specifications established by CST. In addition, such equipment may be subject to regulations for Declaration of Conformity or registration. Please visit CST website for details.
- 3-3 If more than one interface type is offered by a piece of equipment, each interface must meet the applicable technical specifications.
- 3-4 Further information on the characteristics and presentation of network interfaces can be obtained by coordinating with the mobile network operators.
- 3-5 It is mandatory that test reports are obtained from a laboratory that has been accredited by a body that is a member of the ILAC Mutual Recognition Arrangement.

## 4- Limits and conditions

- 4-1 Radio modules must be approved separately in accordance with the applicable technical specifications.
- 4-2 Radio modules utilizing IMT technologies must support LTE (4G) technology as a minimum requirement.
- 4-3 Radio modules incorporating IMT modules must comply with all the requirements included in CST technical specification GEN002 based on the intended use of the module.
- 4-4 Host device need to be approved independently. In case the host device is approved, no need to apply for modular approval unless the applicant is planning to sell the module independently in the market or use the radio module in non-radio equipment.
- 4-5 Devices that are provided with display or that can be connected to a display are required to have CST E-Label embedded in their software as a proof of compliance.
- 4-6 E-Label must be accessible by users of the devices.
- 4-7 It is the responsibility of the manufacturer to implement the E-Label design showing the certificate number issued by CST.
- 4-8 After having the approval from CST, the issued type approval number (TA xxxx-y) must be inserted it in the E-label.
- 4-9 The E-Label must follow the following design:



4-10 The E-Label design can be found on CST's website.

4-11 The following restrictions apply:

4-11-1 The radioelements on a radio module must have the radio frequency circuitry shielded. Physical components and tuning capacitor(s) may be located external to the shield, but must be on the module assembly;

4-11-2 Any modulation or data inputs on the radio module must be buffered.

4-11-3 A power supply regulation must be integrated on the radio module itself.

4-11-4 The module must contain a permanently attached antenna, or contain a unique antenna connector, and be marketed and operated only with specific antenna(s).

4-11-5 The testing of the radio module must be performed in stand-alone configuration.

4-11-6 The radio module must comply with all technical specifications applicable.

4-11-7 Testing should be carried out to ensure compliance with the below specifications.

- TR102 070-2
- TR102 070-1

## 5- References

The following referenced documents are indispensable for the application of this document. If no issue or revision number is quoted along with the title of a technical specification or standard, the latest published version should be used.

### **TR102 070-2**

Electromagnetic compatibility and Radio spectrum Matters (ERM);  
Guide to the application of harmonized standards to multi-radio and  
combined radio and non-radio equipment; Part 2: Effective use of the  
radio frequency spectrum

### **TR102 070-1**

Electromagnetic compatibility and Radio spectrum Matters (ERM);  
Guide to the application of harmonized standards to multi-radio and  
combined radio and non-radio equipment; Part 1: Electro Magnetic  
Compatibility