

ICS 43.040.10
CCS T 36



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 44644.2-2024

**Road vehicles - 50 ohm impedance radio frequency connection
system interface - Part 2: Test procedures**

道路车辆 50Ω阻抗射频连接系统接口 第2部分：测试方法

(English Translation)

Issued on: September 29, 2024

Implemented on: April 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface	
Introduction	
1 Scope	
2 Normative references	
3 Terms and definitions, abbreviations	
3.1 Terms and Definitions	
3.2 Abbreviations	
4 General requirements	
5 Preparation of test samples	
5.1 Dimensional requirements	
5.2 Material requirements	
5.3 Preparation of test samples	
5.4 Quality inspection of test samples	
5.5 Classification of test samples	
6 Visual inspection	
6.1 Purpose	
6.2 Device	
6.3 Test sample	
6.4 Reference sample	
6.5 Operation Step	
6.6 Requirement	
7 Connector electrical performance test	
7.1 General	
7.2 Contact resistance	
7.3 Insulation resistance	
7.4 Dielectric Withstand Voltage	
7.5 Return loss (VSWR)	
7.6 Insertion loss	
7.7 RF leakage (shielding effectiveness)	
8 Connector mechanical performance test	
8.1 Tensile testing using mechanical measuring devices	
8.2 Connector Insertion Force/Extraction Force	

8.3 Polarity and error-proofing structural effectiveness

8.4 Mechanical pull-out test

9 Environmental Test

9.1 Vibration/Mechanical Shock

9.2 Thermal shock

9.3 Temperature Cycle and Humidity Cycle

9.4 High temperature exposure

10 Test sequence

Reference

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is part 2 of GB/T 44644 "50 ohm impedance radio frequency connection system interface for road vehicles". GB/T 44644 has been The following parts were published.

--- Part 1: Dimensions and electrical requirements;

--- Part 2: Test methods.

This document is equivalent to ISO 20860-2:2009 "Road vehicle 50 ohm impedance radio frequency connection system interface Part 2: Test method Law". The following minimal editorial changes were made to this document.

--- Changed the numbers of Figures 8 and 9 according to the order of introduction.

Introduction

At present, under the new development trend of electrification, intelligence and networking of vehicles, more and more communication interconnection and infotainment equipment are being installed.

When used in automobiles, these devices have higher requirements for signal and data transmission performance. Therefore, the 50 ohm impedance radio frequency The relevant standards for the frequency connection system interface will help promote the standardized development of related industries and facilitate domestic and international technical exchanges and trade. Easy to work with.

GB/T 44644 "Road Vehicle 50 ohm Impedance Radio Frequency Connection System

Interface" is intended to consist of two parts.

--- Part 1: Dimensional and electrical requirements. The purpose is to specify the male terminal connection of the 50 ohm impedance RF connection system interface of road vehicles. The dimensions and electrical characteristics of the transducer and female connector are as follows.

--- Part 2: Test methods. The purpose is to specify the male and female connectors of the 50 ohm impedance radio frequency connection system interface of road vehicles. Test methods for terminal connectors.

1 Scope

This document describes the test methods for male and female connectors used in interfaces of 50 ohm impedance RF connection systems for road vehicles.

This document applies to coaxial connectors for 50 ohm impedance radio frequency interfaces for road vehicles meeting the requirements of ISO 20860-1.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

ISO 20860-1 Road vehicle 50 ohm impedance radio frequency connection system interface Part 1: Dimensional and electrical requirements

Note: GB/T 44644.1-2024 Road vehicles 50 ohm impedance radio frequency connection system interface Part 1: Dimensions and electrical requirements (ISO 20860-1. 2008, IDT)

Note: GB/T 2423.10-2019 Environmental testing Part 2: Test methods Test Fc. Vibration (sinusoidal) (IEC 60068-2-6:2007, IDT)

IEC 60068-2-27 Environmental testing Part 2: Test method Test Ea and guidance. Shock

Note: GB/T 2423.5-2019 Environmental testing Part 2: Test method Test Ea and guidance. Impact (IEC 60068-2-27:2008, IDT)

IEC 60169-10 Radio frequency connectors Part 10: Radio frequency coaxial connectors with snap-on coupling and an outer conductor inner diameter of 3 mm (0.12 in)

Note: GB/T 11313.10-2012 RF connectors Part 10: SMB series RF coaxial connectors section specification (IEC 60169-10:1983, NEQ)

IATF 16949 Quality Management System Specific requirements for the application of ISO

9001:2000 to organizations producing and supplying automotive parts

1) ISO/TS 16949 referenced by ISO 20860-2:2009 has been abolished. The technical content of IATF 16949 is consistent with ISO/TS 16949.

3.1 Terms and Definitions

For the purposes of this document, the terms and definitions defined in ISO 20860-1 and the following apply.