

CAPABILITY-LED SELECTION GUIDE

Non-Magnetic
RF Connectors

Low-magnetic RF interconnect solutions for MRI, quantum, cryogenic, superconducting and magnetic-field-sensitive test environments.

50 Ω	**Low Magnetic**	**SMA / SMP / SSMP**	**Custom**
STANDARD RF IMPEDANCE	MATERIAL & PLATING REVIEW	REPRESENTATIVE INTERFACES	DRAWING-BASED REVIEW

WHAT IT IS

What Are Non-Magnetic RF Connectors?

RF interfaces using selected non-ferromagnetic materials and application-specific plating for systems where magnetic disturbance must be controlled.

Non-magnetic RF connectors are coaxial interconnects for field-sensitive RF systems, including MRI hardware, quantum test setups, cryogenic RF paths and superconducting circuit environments.

Final selection should review interface, plating, mating geometry and magnetic requirement together.

Catalog scope: representative models are shown for first-round selection. Additional configurations can be reviewed from drawings or samples.



01

Low Magnetic Response

Reduces unwanted magnetic disturbance in sensitive RF assemblies.

02

50 Ω RF Continuity

Maintains controlled coaxial transition behavior in compact systems.

03

Material & Plating Review

Reviews material and finish choices against the application.

04

Drawing-Based Options

Additional interfaces can be reviewed from drawings, samples or PCB footprints.

WHY IT MATTERS

Standard RF Connector vs Non-Magnetic RF Connector

In magnetic-field-sensitive systems, the connector is part of both the RF path and the local material environment.



SELECTION FACTOR	STANDARD RF CONNECTOR	NON-MAGNETIC RF CONNECTOR
Primary priority	RF and mechanical fit	RF fit plus magnetic response
Material review	General connector material set	Non-ferromagnetic material selection
Plating concern	Conductivity, corrosion, durability	Conductivity plus magnetic response
Typical environment	General RF systems	MRI, quantum, cryogenic and field-sensitive RF systems
Approval basis	Drawing and RF specifications	Drawing, RF specifications and magnetic requirement

LOW MAGNETIC RESPONSE	MATERIAL-CONTROLLED INTERCONNECT	PLATING REVIEW	DRAWING VERIFICATION

WHERE IT IS USED

Application Areas

Non-magnetic RF connector selection is driven by field environment, RF path and mechanical integration.

MRI & Medical Imaging

Low-magnetic RF links for imaging hardware and magnetic-sensitive instrumentation.

Quantum Computing Hardware

RF interconnects for sensitive control, readout and laboratory test environments.

Cryogenic RF Test

Connector options for low-temperature RF paths and evaluation setups.

Superconducting Systems

Material-controlled RF links for superconducting circuits and field-sensitive assemblies.

Magnetic-Sensitive RF Labs

For fixtures where material response can affect measurement confidence.

magnetic-field-sensitive instrumentation

Low-magnetic RF interfaces for research platforms with controlled local material response.

Selection note: Choose by magnetic environment first, then interface, structure and drawing constraints.

REFERENCE

Core Electrical & Mechanical Reference

Series-level reference for first-round selection. Confirm final configuration against the latest drawing and application requirement.

ELECTRICAL OVERVIEW	
Impedance	50 Ω
Frequency Range	Model and interface dependent
Interface Options	SMA / SMP / SSMP / custom
VSWR	Model dependent; confirm by drawing or test data
RF Suitability	Depends on mating condition, launch geometry and installation structure

MECHANICAL / MATERIAL OVERVIEW	
Material Logic	Non-ferromagnetic material selection
Plating Logic	Plating reviewed against magnetic requirement
Structure Options	Connector, PCB mount, panel, adapter or custom
Environment	MRI, quantum, cryogenic, superconducting, lab test
Selection Basis	Magnetic requirement, RF target, interface and geometry

Confirm before production: Material requirement, plating restriction, mating interface and installation structure.

PORTFOLIO MAP

Product Family Overview

Organized by interface and integration logic for faster first-round selection.

FAMILY 01

Non-Magnetic SMA Connectors

For threaded RF interfaces, cable-side links, equipment ports and general RF test structures.

FAMILY 02

Non-Magnetic SMP Connectors

For compact push-on, PCB and blind-mate interconnects in dense RF hardware.

FAMILY 03

Non-Magnetic SSMP Connectors

For miniature high-density RF boards, module interfaces and compact layouts.

FAMILY 04

Non-Magnetic PCB Mount Connectors

For board-level RF access in magnetic-field-sensitive assemblies and test fixtures.

FAMILY 05

Custom Non-Magnetic Interfaces

For drawing-based adapters, special geometry and application-specific conversion.

FAMILY 06

Non-Magnetic Interconnect Support

For connector-to-cable or system-level RF paths requiring joint review of interface, cable type, length and environment.

Next: identify the family, then confirm by drawing and magnetic requirement.

SELECTION ENTRY

Quick Selection Guide

Start from the required interface and installation logic, then confirm magnetic and RF requirements.

IF YOU NEED	RECOMMENDED FAMILY	BEST FOR	CHECK FIRST
Threaded general RF interface	Non-Magnetic SMA	RF test, cable-side links, equipment ports	Gender, frequency, cable or panel format
Compact push-on interface	Non-Magnetic SMP	PCB, module and blind-mate systems	Detent, mating style, board spacing
Miniature high-density interface	Non-Magnetic SSMP	Dense RF boards and compact modules	Footprint, gender, retention, clearance
Board-level RF access	PCB Mount Connectors	Magnetic-sensitive RF boards	Launch geometry, board thickness, contact profile
Custom field-sensitive layout	Custom Interfaces	MRI, quantum, cryogenic systems	Material, plating, drawing, magnetic requirement
System-level RF path	Interconnect Support	System-level RF interconnect	Connector type, cable path, length, magnetic environment

METHOD

How to Choose the Right Non-Magnetic RF Connector

For non-magnetic applications, start with the field environment before narrowing the RF interface and structure.

STEP 1

Define magnetic environment

MRI, quantum, cryogenic, superconducting or laboratory test setup.

STEP 2

Select interface type

SMA, SMP, SSMP or customer-defined interface requirement.

STEP 3

Define structure

Cable, PCB mount, panel, adapter or custom geometry.

STEP 4

Confirm RF target

Frequency, VSWR target, mating condition and transition geometry.

STEP 5

Review materials

Material, plating, magnetic sensitivity and drawing restrictions.

BEFORE REQUESTING A QUOTE	
Interface	SMA / SMP / SSMP / custom
Structure	PCB / cable / panel / adapter
Frequency	Target operating range

ALSO CONFIRM	
Magnetic requirement	Low magnetic response / material restriction
Drawing	2D / 3D / footprint / mating interface
Environment	MRI / quantum / cryogenic / superconducting

SELECTED MODELS

Representative Starting Points

Use these models as starting points. Other interfaces can be reviewed by drawing.



THREADED INTERFACE

Non-Magnetic SMA

For general RF test, equipment ports and cable-side non-magnetic interconnect needs.



PUSH-ON PCB INTERFACE

Non-Magnetic SMP

For compact module, board-level and blind-mate style RF integration.



MINIATURE RF INTERFACE

Non-Magnetic SSMP

For dense RF boards, miniature modules and space-constrained layouts.

REFERENCE MODEL	INTERFACE	STRUCTURE	FREQUENCY	REFERENCE USE
VST-CXSMAM-D2.29	SMA Male	Connector	DC–18 GHz	General non-magnetic RF interface
VST-CPSMPM-15	SMP Male	PCB Connector	DC–18 GHz	Limited-detent compact RF applications
VST-CPSMPM-17	SMP Plug	Straight PCB Mount	DC–26.5 GHz	Compact PCB / module interconnect
VST-CPSSMPF-01	SSMP Female	Connector	DC–18 GHz	Miniature high-density RF interface
VST-CPSSMPM-01	SSMP Male	PCB Mount	DC–18 GHz	Dense board-level RF connection

Not limited to listed models: additional non-magnetic connector structures may be reviewed based on drawings, interface requirements, magnetic constraints and installation geometry.

DRAWING-BASED REVIEW

Drawing-Based Custom Review

Custom non-magnetic projects are reviewed by RF interface, material requirement, plating restriction and installation geometry.

RF Interface

Interface type, gender, mating condition, frequency target and transition geometry.

Material Requirement

Non-ferromagnetic material choice and customer magnetic-response requirement.

Plating Restriction

Application-specific finish review where magnetic response is critical.

Installation Geometry

PCB footprint, panel layout, cable path, clearance and mechanical retention.

CUSTOMER INPUT	REVIEW PURPOSE
2D drawing / 3D file / sample photo	Confirm interface geometry, mounting structure and manufacturability.
Magnetic requirement	Review material, plating and process restrictions before quoting.
Application environment	Match connector logic to MRI, quantum, cryogenic, superconducting or lab test use.
Frequency and mating condition	Assess whether the target RF path and mechanical structure are suitable.

For custom review: send the drawing, magnetic requirement and target frequency together.

FOR FASTER ENGINEERING REVIEW

RFQ & Drawing Review Checklist

Provide the following information for faster review of standard or drawing-based non-magnetic RF connector configurations.

REQUIRED INPUT	
Interface	SMA / SMP / SSMP / custom
Gender	Male / Female
Frequency target	DC–18 GHz / DC–26.5 GHz / custom
Structure	PCB mount / cable / panel / adapter
Application	MRI / quantum / cryogenic / superconducting
Magnetic requirement	Low magnetic response / material restriction
Drawing file	2D / 3D / PCB footprint / mating interface
Quantity	Prototype / small batch / production

REVIEW FOCUS	
RF transition	Interface and frequency feasibility
Material selection	Non-ferromagnetic material review
Plating requirement	Finish reviewed against magnetic requirement
Mechanical fit	PCB, panel, cable or adapter geometry
Custom path	Standard model or drawing-based configuration
Clarification items	Information needed before quotation or drawing release

Recommended request: send drawings, magnetic requirements and target frequency to sales@vinstronics.com for engineering review.

Non-Magnetic RF Interconnect Solutions

Send your connector drawing, magnetic requirement or field-sensitive application details to sales@vinstronics.com for engineering review.

Vinstronics

COMPANY

Shenzhen Weixintong Electronics Co., Ltd.

Room 212/213, 2/F, Block B, XinBaoSheng Building, No. 233 Xixiang Avenue, Hexi Community, Xixiang Sub-district, Bao'an District, Shenzhen, China

CONTACT

Email sales@vinstronics.com
TEL / WhatsApp +86 189 3864 7549

ONLINE

www.vinstronics.com

© 2026 Vinstronics. All rights reserved. Specifications are subject to change without notice.