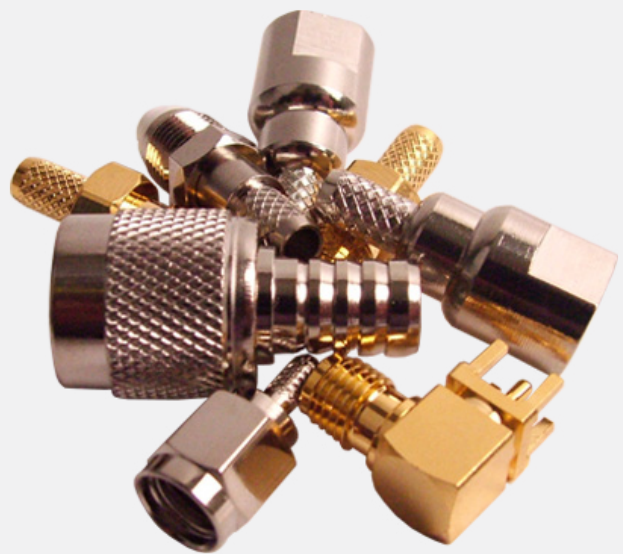




Enabling Industrial IoT



## RF Connector Guide

Rev 1.6

### Table of Contents

	Page
<b>Introduction</b>	<b>3</b>
<b>About Siretta</b>	<b>4</b>
<b>SMA Connectors</b>	<b>5</b>
Reverse Thread	5
Reverse Polarity	5
<b>SMB Connectors</b>	<b>6</b>
<b>FME Connectors</b>	<b>6</b>
<b>BNC Connectors</b>	<b>7</b>
Reverse Polarity	7
<b>TNC Connectors</b>	<b>8</b>
Reverse Polarity	8
<b>N-Type Connectors</b>	<b>9</b>
Reverse Polarity	9
<b>MCX Connectors</b>	<b>10</b>
<b>MMCX Connectors</b>	<b>10</b>
<b>U.FL/IPEX Connectors</b>	<b>11</b>
<b>GSC Connectors</b>	<b>11</b>
<b>Adaptors</b>	<b>12</b>
<b>Disclaimer</b>	<b>15</b>

### Introduction

The wide range of available RF connectors can make for a confusing picture when trying to specify or identify connectors in new or existing installations. With this guide, Siretta have attempted to present the most common connector types in an easy to use document that allows simple visual identification, and an understanding of the basic connector styles.

As this guide is intended to be a comprehensive document, not all of the connector types shown are available from Siretta.

### About Siretta

Siretta, located in Reading, United Kingdom have been manufacturing antennas, cable assemblies and cellular terminals for over 10 years. We supply our products globally to many of the world's leading organisations.

Whether you require an off the shelf or custom solution, Siretta has a wide portfolio of antenna, RF cable assemblies and terminals to fit your application.

Our extensive knowledge and experience in the wireless market allows us to support a wide range of customer applications, focusing on frequencies typically within the 75MHz - 5.8GHz range. These encompass the HF, VHF, ISM, GSM/GPRS/3G/4G and GPS frequencies as well as industrial WLAN and VHF/UHF antenna/Wi-Fi antenna solutions.

With a heavy emphasis on design, we have a team of dedicated Application Engineers and Product Managers, backed up by Field Sales Engineers, who specialise in wireless applications.

We have made significant investments in R&D facilities which boast GPS hardware development equipment and a GSM Pico Cell on site, as well as development software and a comprehensive suite of Industrial, Scientific and Medical band, and non ISM band frequency products. We have many technology partners enabling us to keep at the forefront of the communications industry and offer class leading wireless solutions.

### SMA Connectors

SMA connectors are one of the most common RF connector styles. SMA connectors have a screw type mating mechanism.

#### SMA Male



Male centre pin and male outer shell with an inner screw thread.

#### SMA Female



Female centre receptacle and female outer shell with an outer screw thread.

### Reverse Thread

Reverse Thread SMA connectors are the same as the standard SMA, but have a left hand thread instead.

#### RT-SMA Male



Male centre pin and male outer shell with left hand thread.

#### RT-SMA Female



Female centre receptacle and female outer shell with left hand thread.

### Reverse Polarity

Reverse Polarity SMA connectors are a variation of the standard SMA connector, with reversed gender of the connector interface. The term 'Reverse Polarity' refers only to the gender of the connector contact pin, not the signal polarity.

#### RP-SMA Male



Female centre receptacle and male outer shell with an inner screw thread.

#### RP-SMA Female



Male centre pin and female outer shell with an outer screw thread.

### SMB Connectors

SMB connectors are smaller in dimension than SMA connectors. They also feature 'snap-on' coupling rather than the screw thread used on the SMA, allowing for quick connect/disconnect.

SMB Female (jack)



Female centre pin. The SMB female slots inside the male connector and 'clicks' into place.

SMB Male (plug)



Male centre receptacle.

### FME Connectors

FME connectors are another very common RF connector type. Used primarily with RG58, RG174 or equivalent coaxial cables in mobile applications and installations.

FME Male



Male centre pin and male outer shell with an inner screw thread.

FME Female



Female centre receptacle and female outer shell with an outer thread and a white PVC tip at the terminus.

### BNC Connectors

BNC connectors are a common type of RF connector used for coaxial cables. They are used in radio, television, and other radio-frequency electronic equipment, test instruments, video signals, and were once a popular computer network connector. They feature a quick connect/disconnect mating mechanism without a screw thread.

#### BNC Male



Male centre pin and two slots on the male outer shell, that mate with the two bayonet lugs on the female connector.

#### BNC Female



Female centre receptacle and two bayonet lugs on the outer shell, with mating achieved by a quarter turn.

### Reverse Polarity

Reverse Polarity BNC connectors are a variation of the standard BNC connector, with reverse polarity of the interface.

#### RP-BNC Male



Female centre receptacle and two slots on the male outer shell, that mate with the two bayonet lugs of the female connector.

#### RP-BNC Female



Male centre pin and two bayonet lugs on the outer shell, mating is achieved by a quarter turn.

### TNC Connectors

TNC connectors are a threaded version of the BNC connector. TNC connectors are popular for use with outdoor equipment as they are inherently more water resistant than other standard connector types.

#### TNC Male



Male centre pin and male outer shell with an inner screw thread.

#### TNC Female



Female centre receptacle and female outer shell with an outer screw thread.

### Reverse Polarity

Reverse Polarity TNC connectors are a variation of the standard TNC connector, with reverse polarity of the interface.

#### RP-TNC Male



Female centre receptacle and male outer shell with an inner screw thread.

#### RP-TNC Female



Male centre pin and female outer shell with an outer screw thread.



### N-Type Connectors

N-Type connectors are a threaded RF connector, popular for use with outdoor equipment as they are inherently more water resistant than other standard connector types.

#### N-Type Male



Male centre pin and male outer shell with an inner screw thread.

#### N-Type Female



Female centre receptacle and female outer shell with an outer thread.

### Reverse Polarity

Reverse Polarity N-Type connectors are a variation of the standard N-Type connector, with reverse polarity of the interface.

#### RP-N-Type Male



Female centre receptacle and male outer shell with an inner screw thread.

#### RP-N-Type Female



Male centre pin and female outer shell with an outer screw thread.

### MCX Connectors

MCX and the smaller MMCX connectors are frequently used to connect external antennas to GPS receivers. They are also common in USB DVB-T tuners for computers and laptops, to connect an external antenna to the tuner.

MCX Male



Male centre pin and outer shell with clips to mate with the female.

MCX Female



Female centre receptacle and a solid surface outer shell.

### MMCX Connectors

While the MCX connector features a 'snap-on' mechanism, the MMCX features a lock-snap mechanism that improves stability and durability. Unlike the MCX connector, which is more rigid when joined with another cable, the MMCX connector allows for rotation of up to 360 degrees for greater flexibility. This special locking mechanism also helps to reduce the RF leakage at the joints of the connector.

MMCX Male



Male centre pin.

MMCX Female



Female centre receptacle.

### U.FL/IPEX Connectors

U.FL connectors are an equivalent of the IPEX MHF connector. Both are compatible with one another and differ simply by their manufacturers. uFL and IPEX cable connectors can be terminated with 1.13mm, 1.32mm, 1.37mm, 0.81mm RF cables.

#### U.FL/IPEX Male



Female centre plug, mates by slotting around male. In most circumstances, antenna cables and cable assemblies are terminated with the U.FL/IPEX Male connector.

#### U.FL/IPEX Female



Male centre pin, which during connectivity fits into the female centre plug. In most circumstances, the U.FL/IPEX Female connector is found on the PCB.

### GSC Connectors

GSC is a low-profile but high frequency RF coaxial connector. MCF connectors are compatible with the GSC. The GSC connector has a 2.0mm mated height.

#### GSC Male



Female centre plug, mates by slotting around male.

### Adaptors

A list of our popular adaptors are below:

	Connector A	Connector B	Part No
	SMA Male	SMA Male	ADAPT/SMAM/SMAM
	SMA Male	SMA Female	ADAPT/SMAM/SMAF
	SMA Male	SMA Male RP	ADAPT/SMAM/SMAM/RP
	SMA Male	SMA Female RP	ADAPT/SMAM/SMAF/RP
	SMA Male	SMA Female RA	ADAPT/SMAM/SMAF/RA
	SMA Male	TNC Male	ADAPT/SMAM/TNCM
	SMA Female	SMA Female	ADAPT/SMAF/SMAF
	SMA Female	SMA Male RP	ADAPT/SMAF/SMAM/RP
	SMA Female	SMA Female RP	ADAPT/SMAF/SMAF/RP

## RF Connector Guide

	Connector A	Connector B	Part No
	SMA Female	TNC Male	ADAPT/SMAF/TNCM
	SMA Female	TNC Female	ADAPT/SMAF/TNCF
	FME Male	SMA Male	ADAPT/FMEM/SMAM
	FME Male	SMA Female	ADAPT/FMEM/SMAF
	FME Male	FME Male	ADAPT/FMEM/FMEM
	FME Male	FME Female	ADAPT/FMEM/FMEF
	FME Male	TNC Male	ADAPT/FMEM/TNCM
	FME Female	SMA Male	ADAPT/FMEF/SMAM
	FME Female	SMA Female	ADAPT/FMEF/SMAF
	FME Female	FME Female	ADAPT/FMEF/FMEF

## RF Connector Guide

	Connector A	Connector B	Part No
	SMB Male	SMA Female	ADAPT/SMBM/SMAF
	SMB Female	SMA Male	ADAPT/SMBF/SMAM
	SMB Male	SMB Male	ADAPT/SMBM/SMBM
	MMCX Male	SMA Female	ADAPT/MMCXM/SMAF
	MMCX Female	SMA Male	ADAPT/MMCXF/SMAM
	MCX Male	FME Male	ADAPT/MCXM/FMEM
	MCX Female	SMA Male	ADAPT/MCXF/SMAM
	MCX Female	FME Male	ADAPT/MCXF/FMEM
	N-Type Male	SMA Female	ADAPT/N-TYPEM/SMAF

### Disclaimer

The information contained in this document is proprietary to Siretta. Siretta has made every effort to ensure that the accuracy of the information contained within this document is accurate. Siretta does not make any warranty as to the information contained within this document and does not accept any liability for any injury, loss or damage of any kind incurred by the use of this information.

Siretta does not take responsibility for any application developed using the device characterized in this document and notes that any application of this device must comply with the safety standards of the applicable country and comply with the relevant wiring rules. Siretta reserves the right to make modifications, additions and deletions to this document due to typographical errors, inaccurate information, or improvements to equipment at any time and without notice. Such changes will be incorporated into new editions of this document.

All rights reserved.

© 2017 Siretta



Enabling Industrial IoT

**sales** +44 (0)118 976 9000

**email** sales@siretta.com

**www.siretta.com**

Siretta Ltd  
Basingstoke Road  
Spencers Wood  
Reading  
Berkshire  
RG7 1PW  
United Kingdom

Company No. 08405712  
VAT Registration No. GB163 04 0349

