

# General Information

## Connector Selection

There are several factors should be taken into account to select a proper coaxial connector, such as interface, cable type, impedance, VSWR. On the other hand, it is a balance between performance and economics.

### Application

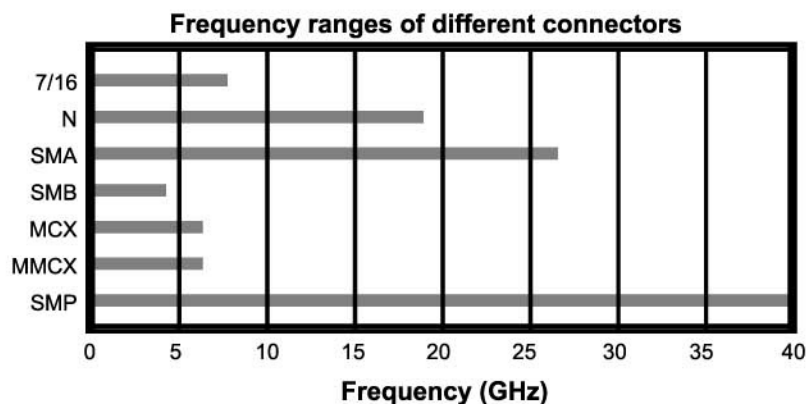
Before selecting a connector, the application has to be known well, because connector must, at a minimum, provide the same level of performance as the application to which they are attached to not introduce influence to system performance. In addition, its structure, dimensions and frequency range restrain the connector series that can be used.

### Cable

If you need a cable connector, it is a good engineering practice to try to match connector diameter and cable diameter as closely as possible in order to minimize signal reflection. The larger the difference between cable diameter and connector diameter, the worse the performance will be.

### Frequency

Each connector interface has an own cut-off frequency which limit the frequency range that a connector can operate, That means the frequency determine the connector series used. Furthermore, it is advisable to use push-on or bayonet style connectors at low frequencies, typically below 6 GHz, threaded connectors should be used for high performance, low noise applications. The following table shows the frequency ranges of different connectors.



### Impedance

The cable or application that is specified will generally determine the impedance of the connector used. Impedance mismatches will cause reflections resulting in poor system performance. 50 and 75 ohms are the standard impedances used by most application, and several connector series come in both 50 ohm and 75 ohm versions.

## Coupling Mechanism

Coupling mechanism is one of essential elements of connector's, by which mating connection can be achieved. Each coupling mechanism type has advantages to the user.

The bayonet coupling (BNC) mechanism is easy and fast for mating and unmating action, so it is mostly used in test and measurement application.

The threaded coupling (SMA) mechanism guarantees the most reliable connection and excellent performance even in applications where vibration always happen. In result, it fit to test and measurement, military, telecom applications.

The snap-on coupling mechanism (SMB) features a snap detent in body which makes it easy to install and prevents the connector from becoming unmated during low level of vibration, it is used in small connectors such as MCX, MMCX, SMB.

**Bayonet**



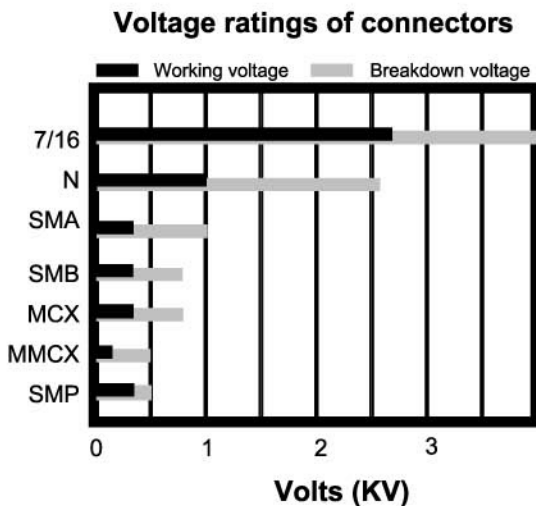
**Threaded**



**Snap-on**



**Slid-on**



## Voltage Rating

Power or voltage requirements are also a factor determining the connector to be used in a particular application. High power applications will dictate the use of large diameter connectors such as 7/16.

Average power handling is normally limited by the system ambience and is usually determined empirically. The breakdown voltage level of the connector limits peak power. Power handling capability will diminish as a function of frequency and altitude.

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