

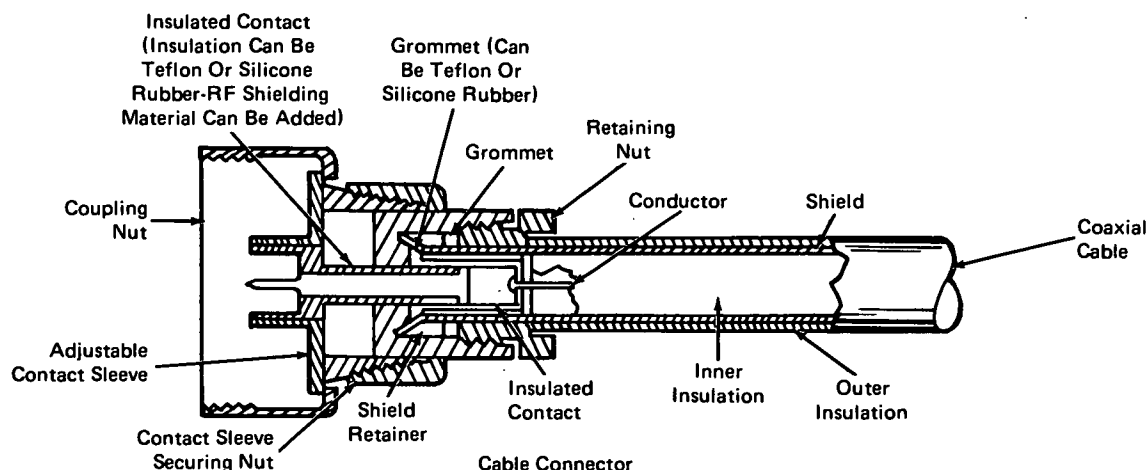
# NASA TECH BRIEF

## Marshall Space Flight Center



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### A Proposed Adjustable RF Cable Connector



#### The problem:

RF transmission through impedance mismatched lines will result in power loss. In systems that require negligible loss, it may be necessary to adjust the cable length to an exact multiple of the transmitted wavelength. Thus, reflected waves will be in phase with the transmission, and no destructive interference will occur. The adjustment involves the time-consuming process of adding to and cutting from the cable until trial and error result in the exact required length.

#### The solution:

A proposed adjustable cable connector could save considerable time and cost by eliminating the need to add to or cut from the cable.

#### How it's done:

The connector is shown in the accompanying illustration. To make the proper adjustment, one first calculates the approximate length. The connector is assembled and installed, and the correct impedance is found by turning an adjusting screw to move the contact sleeve in or out.

After the exact cable length is reached, the securing nut is tightened to fix the position of the assembly.

The device was especially designed for use with high frequencies (i.e., UHF, VHF). For any particular application, a connector of suitable dimensions should be used.

#### Note:

Requests for further information may be directed to:  
 Technology Utilization Officer  
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 Reference: B73-10097

#### Patent status:

NASA has decided not to apply for a patent.

Source: E. J. Stringer and  
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 Rockwell International Corp.  
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Category 01