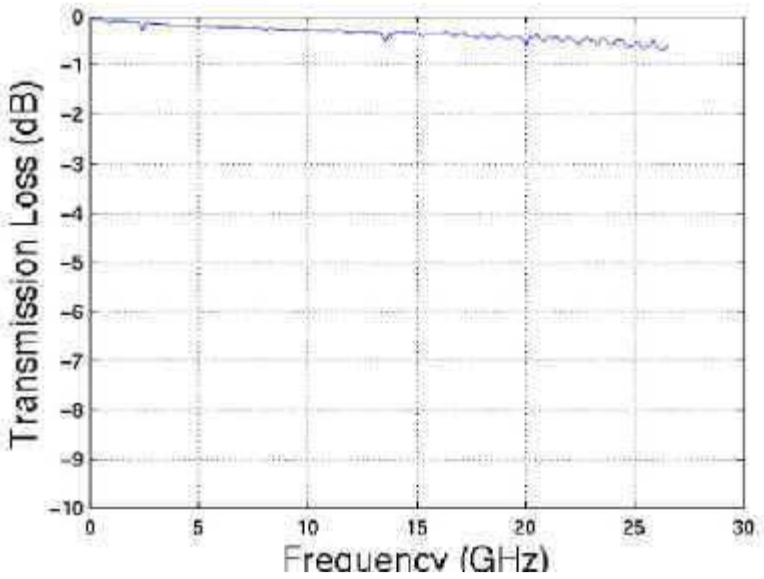
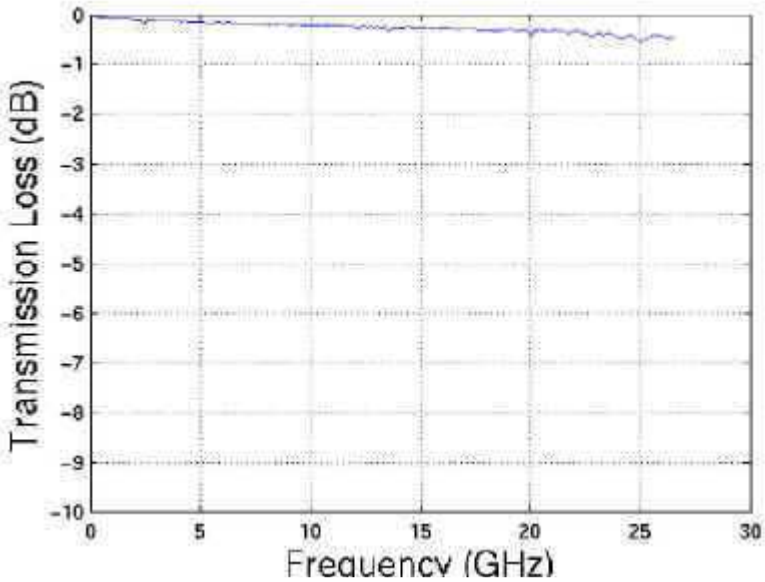
Semi rigid cables (from website http://home.wxs.nl/~alphe078/contents.htm)

There is a significant difference using straight or angle connectors. To highlight this, the following measurements were made (again using a network analyser and so terminated at 50 ohm):

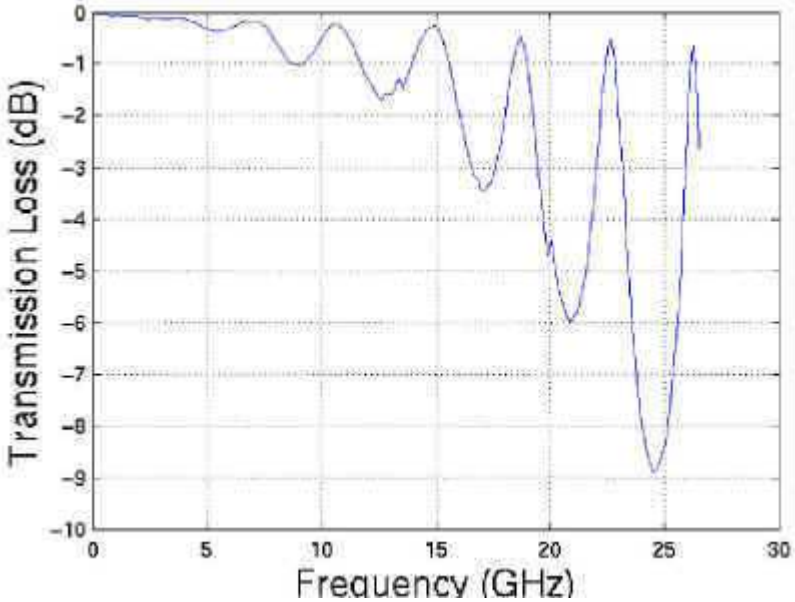
length: 10 cm



length: 10 cm

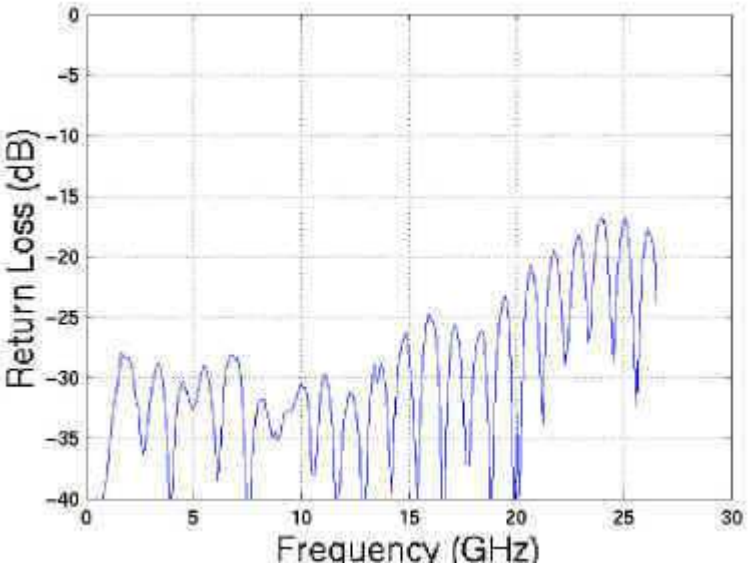


length: 3 cm

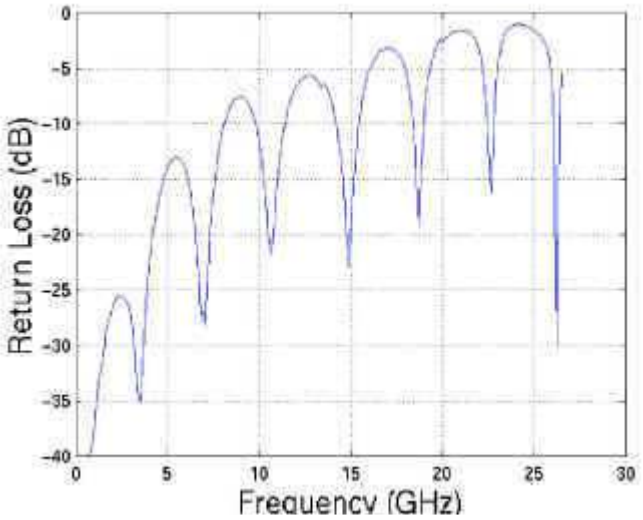


Note: More cables of this kind have been measured, with about the same results as indicated.

The reflection coefficient (S11) behaviour of these cables is also interesting: It is clear that the large transmission losses (S21) of the 3 cm right angle connector cable are not caused by absorption but rather by reflection at the connectors.



S11 of the first cable with the straight plug

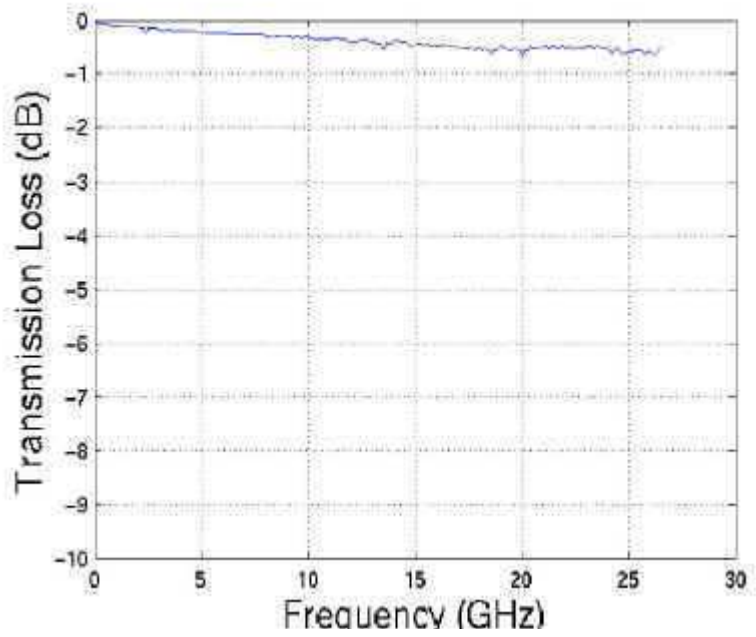


S11 of the first cable with the right angle plug

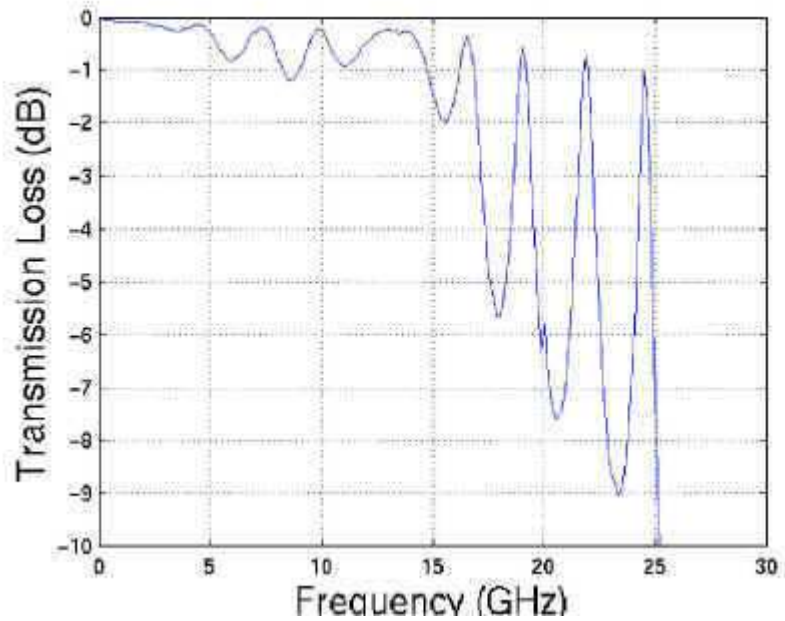
Conclusion: Using semi-rigid cables with straight cable plugs at frequencies up to 24 GHz causes some signal loss, but this was expected. Semi-rigid cables with right angle cable connectors have unpredictable impedances at higher frequencies and are, therefore, not recommended to be used above 5 GHz. These unpredictable impedances can lead to difficulties i.e. in tuning and non-reproducible results when exchanging cables.

b) .086"

length: 8 cm



length: 4 cm

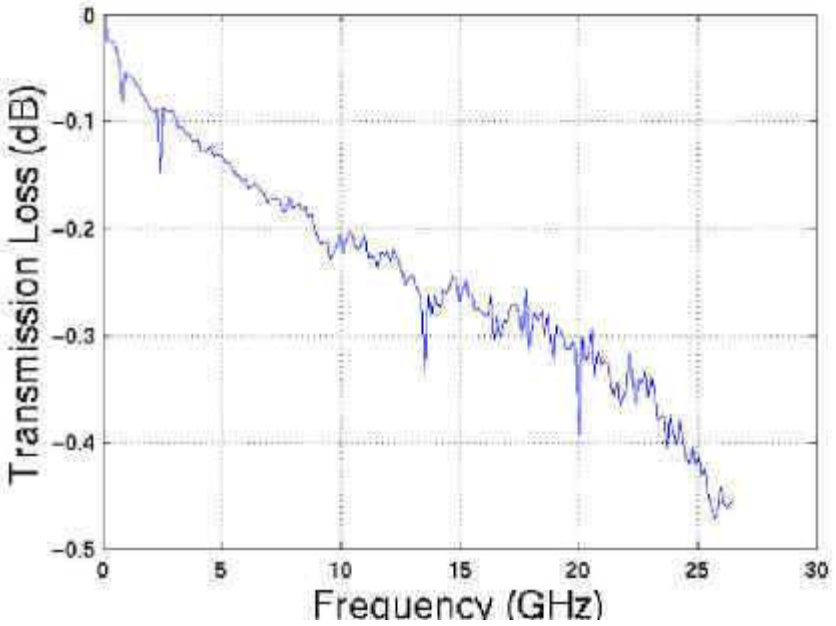


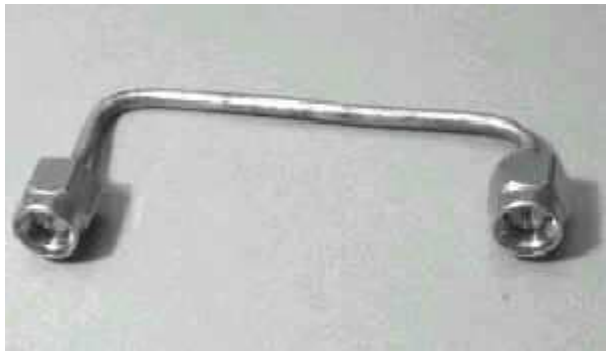
Note: More cables of this kind have been measured, with about the same results as indicated.

Conclusion: There is no big difference in the measurements compared to the thicker semi-rigid. The slightly higher losses were again expected. So the same conclusions apply as with 0.141" semi-rigid cables.

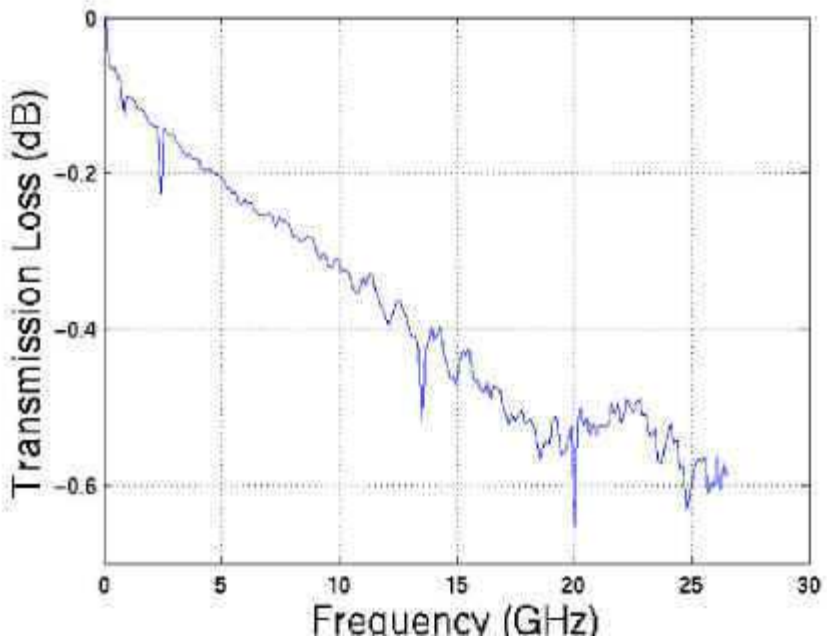
Some additional measurements on semi-rigid cables with straight connectors.

length: 5 cm

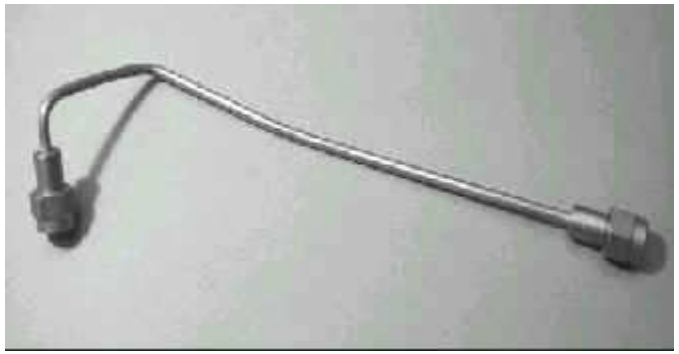




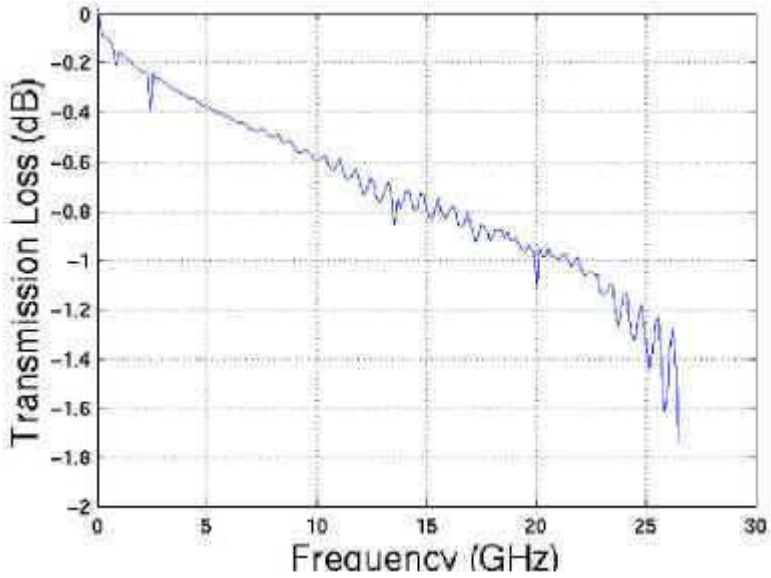
length: 8 cm



Both cables above have the same type of connector.



length: 15 cm



Conclusion: Although SMA plugs are specified up to 18 GHz, straight connectors can be used up to 24 GHz for amateur purposes. The soldered ones are superior to the clamp types.