

REFERENCE AIR LINES

7mm TO LPC7 CONNECTOR

Description

The Maury 2653 series reference air lines are beadless, virtually reflectionless, coaxial 7mm air lines with spring loaded tips on the ends of the inner conductor to mate with APC7 connectors. VSWR of these airlines is rated at 1.02 maximum at 18 GHz. The extremely low VSWR of these air lines make them useful in a variety of calibration applications.

The air lines are fabricated from copper alloys and gold flashed to prevent tarnishing. The spring loaded tips in the inner conductor are an improved design that are self aligning when coupling to mating connectors so an aligning tool is no longer required.

These precision reference air lines can be used to calibrate instruments and components in a variety of measurement techniques. They can be used as quarterwave lines for Smith chart determination of reflection coefficient, as time delay and capacitance standards and for establishing an accurate reference in TDR measurements.

Maury also produces a variety of 7mm instruments with LPC7 beadless connectors for precision measurements. Please contact our Sales Department on your requirements.

Airline Kits

Kit model 2653K: The reference air lines can be provided in a kit which consists of the six air lines shown in the chart below. They are supplied in an attractive foam lined wooden instrument case. The instrument case has provisions for storing other components such as open and short circuits (may be purchased separately — part number 2653X5).

Model	Electrical Length (cm)	Odd $\lambda/4$ Frequency GHz [2]
2653C	14.990	(2N + 1) 0.50
2653D	9.993	(2N + 1) 0.75
2653E	7.495	(2N + 1) 1.00
2653F	5.996	(2N + 1) 1.25
2653G	4.997	(2N + 1) 1.50
2653H	2.998	(2N + 1) 2.50



Model 2653G

Specifications

Frequency Range	DC to 18 GHz
VSWR	<1.002 + 0.001 (f - GHz)
Characteristic Impedance	50 ± 0.1 ohms [1] where skin depth is negligible
Accuracy of Electrical Length.....	± 0.005 cm
Connector	LPC7 (beadless 7mm connector mates with APC7)

Accessories Available

Model 2615B: A precision fixed short designed to terminate an LPC7 connector. It includes a collect contact on its shorting face in order to provide a support for the inner conductor of the series 2653 reference air lines. Reflection coefficient is greater than 0.99 to 18 GHz.

- The actual impedance of these airlines is 49.987 ± 0.100 ohms based on the nominal size and tolerance of the conductors and the formula $Z = 59.939 \ln D/d$.
Outer conductor — 0.2756 ± 0.0002 dia.
Inner conductor — 0.1197 ± 0.0001 dia.
- Frequencies at which air line is an odd multiple of quarter wavelengths where N is zero or any integer.