

Title (en)  
Waveguide apparatus.

Title (de)  
Wellenleitervorrichtung.

Title (fr)  
Dispositif à guides d'ondes.

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Application  
**EP 89305128 A 19890519**

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GB 8812091 A 19880521

Abstract (en)  
Waveguide apparatus for transforming signals between the TE<sub>10</sub> mode and a circular mode, shown in schematic exploded form, includes a Magic-T 10 in which the H-plane port 11 is terminated. A signal in the TE<sub>10</sub> mode is applied to its E-plane port 8, resulting in signals in the TE<sub>10</sub> mode being produced at its outputs 12 and 13, the field being in opposite senses. The outputs 12 and 13 are arranged adjacent one another so that the effective output of the Magic-T 10 is a signal in the TE<sub>20</sub> mode. This is applied to a short taper 14 having an aperture therethrough, this being of rectangular section in the face adjacent the Magic-T output ports 12 and 13 and of cruciform section at the other face. The taper 14 is followed by a spacer 15 and iris 16 having a cruciform aperture therethrough. The application of the signal in the TE<sub>20</sub> mode at the Magic-T outputs 12 and 13 results in an output signal in the TE<sub>01</sub> mode being launched in the circular waveguide following the iris 16. The apparatus may also be used to transform a TE<sub>01</sub> applied to the iris 16 into an output signal at the E-plane port 8 in the TE<sub>10</sub> mode.

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