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Efficient UHF tunable filter using waveguide TE10 mode

Band – tunable filters have traditionally been fabricated using coaxial cavity technology.  For the UHF band coaxial cavities have inherent power handling limits for both average and peak power.  This presentation introduces a UHF band tunable rectangular waveguide mask filter.  This filter has significantly more power handling than coaxial cavity filters but at the same time offers both a tune-ability and size advantage over the traditional dual mode cylindrical waveguide filter.  This new design addresses broadcasters concerns over repack channel changes and installation logistics while maintaining good efficiency and adequate peak power headroom for ATSC 3.0 operation.