

Consider Tony Kerr's proposed 183-237 band:

total bandwidth = 54 GHz  
 center frequency = 210 GHz  
 1<sup>st</sup> subharmonic of center = 105 GHz

Suppose ~~max~~ IF is 12-20 GHz (8 GHz total) and both sidebands are available; in order to reach all frequencies, look at the extremes:

To reach 237:

use USB,  $L0 = 237 - 20 = 217 \Rightarrow 108.5$  GHz sub covers 229-237 & 197-205

To reach 183:

use LSB,  $L0 = 183 + 20 = 203 \Rightarrow 101.5$  GHz sub covers 183-191 & 215-223

At center: covers 190-198 & 222-230  $\Rightarrow 105$  GHz sub

So this gives complete coverage with only 3 frequency settings

Required bandwidth for LO is 7 GHz at 105 GHz = 6.7%

Varactor-tuned Gunn: range 4 GHz - only half

