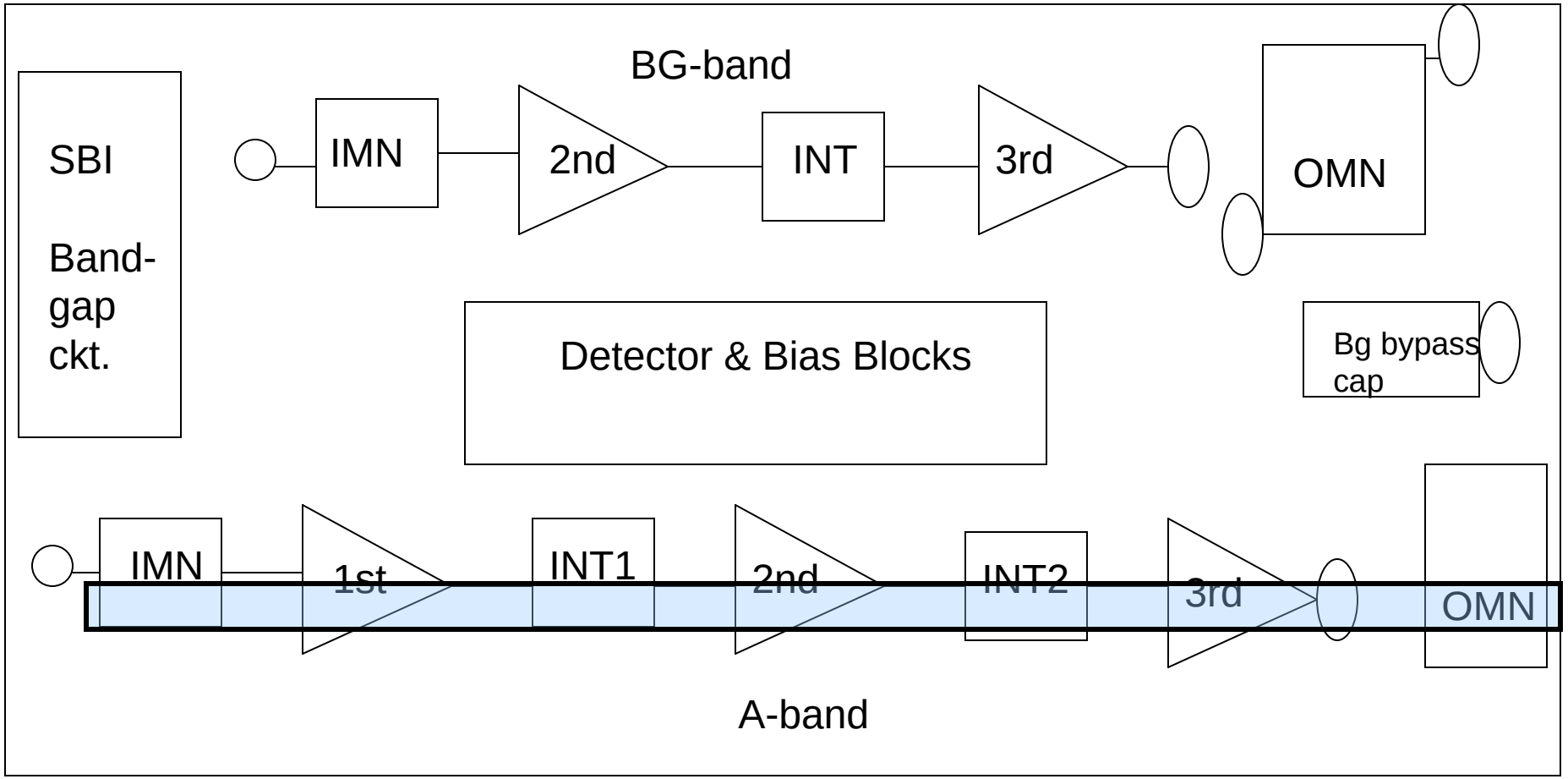
A Fully Integrated Dual Band SiGe BiCMOS Power Amplifier for 802.11 abg-n Applications

IC / Module Block Diagram

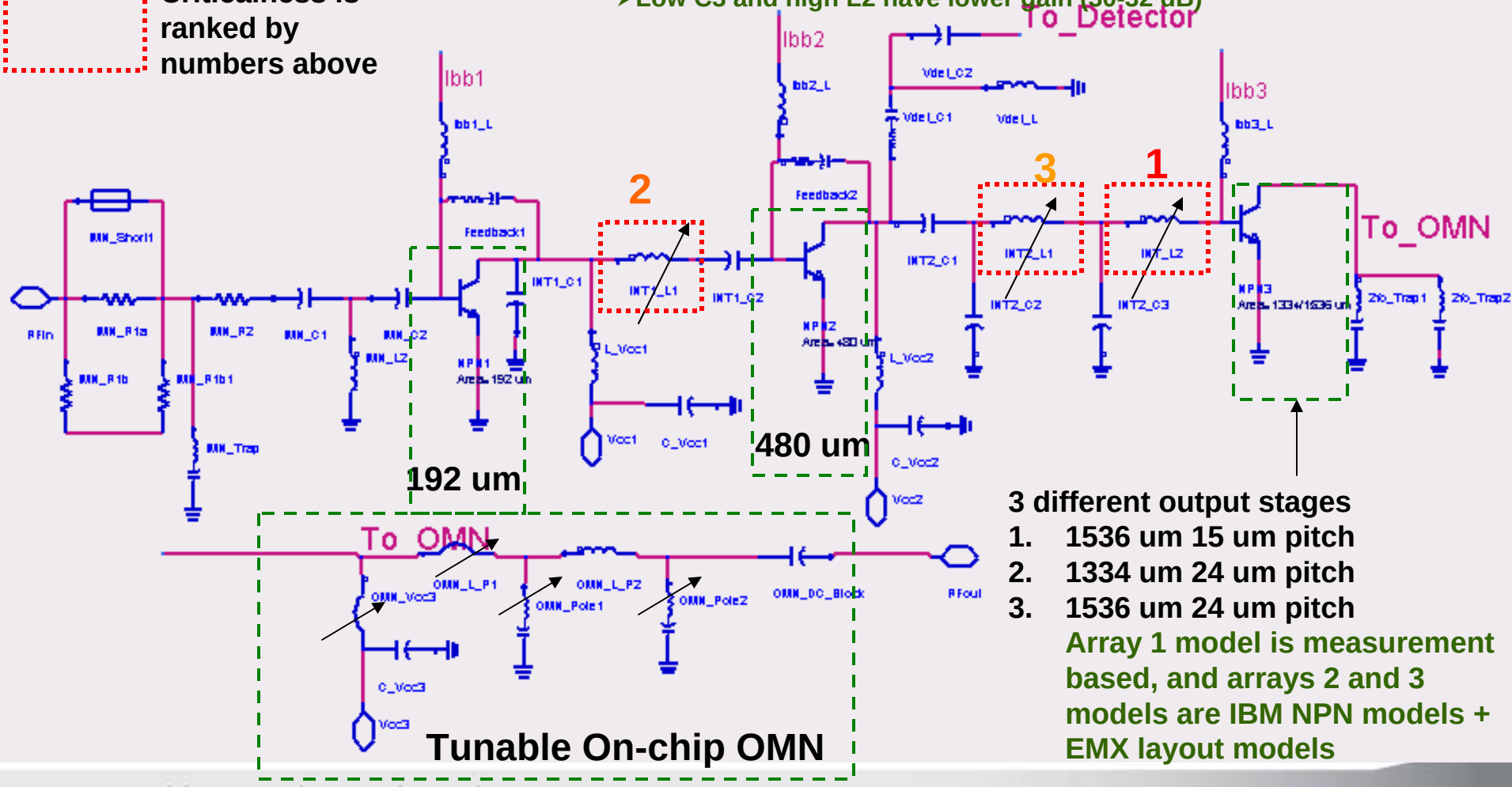
Dual Band Configuration.



Conceptual Schematic for a-band PA

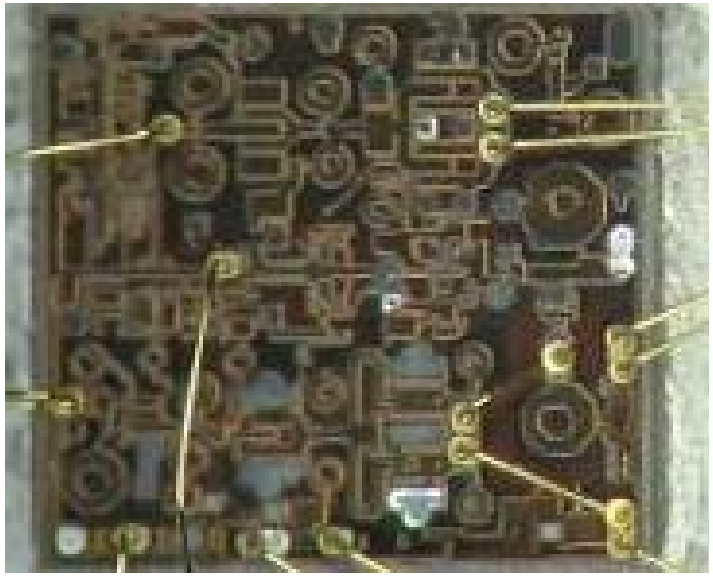
Critical Tuning Criticalness is ranked by numbers above

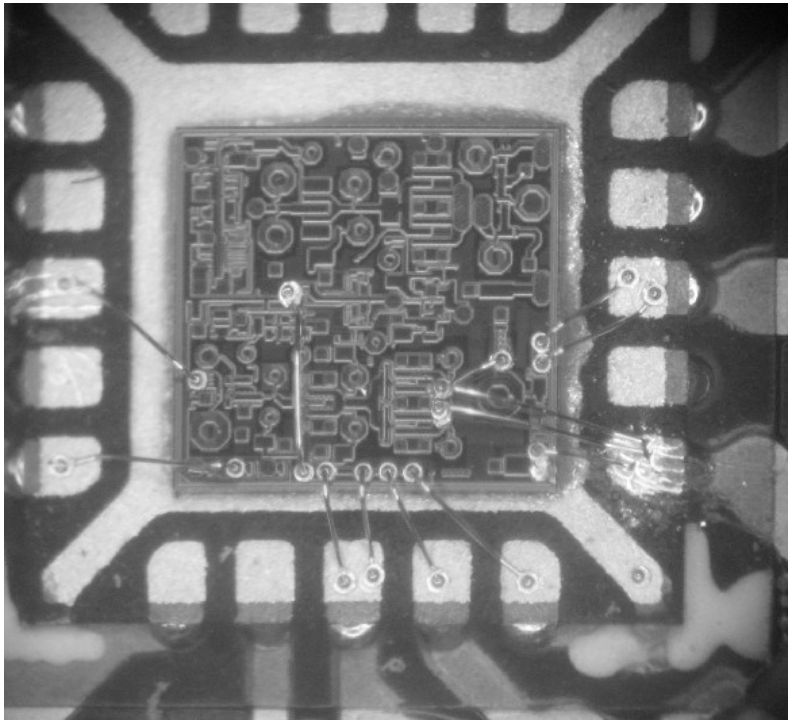
Note:
L2 and C3 play against each other.
- **High C3 and Low L2 will have high gain (34-38 dB).**
- **Low C3 and high L2 have lower gain (30-32 dB)**



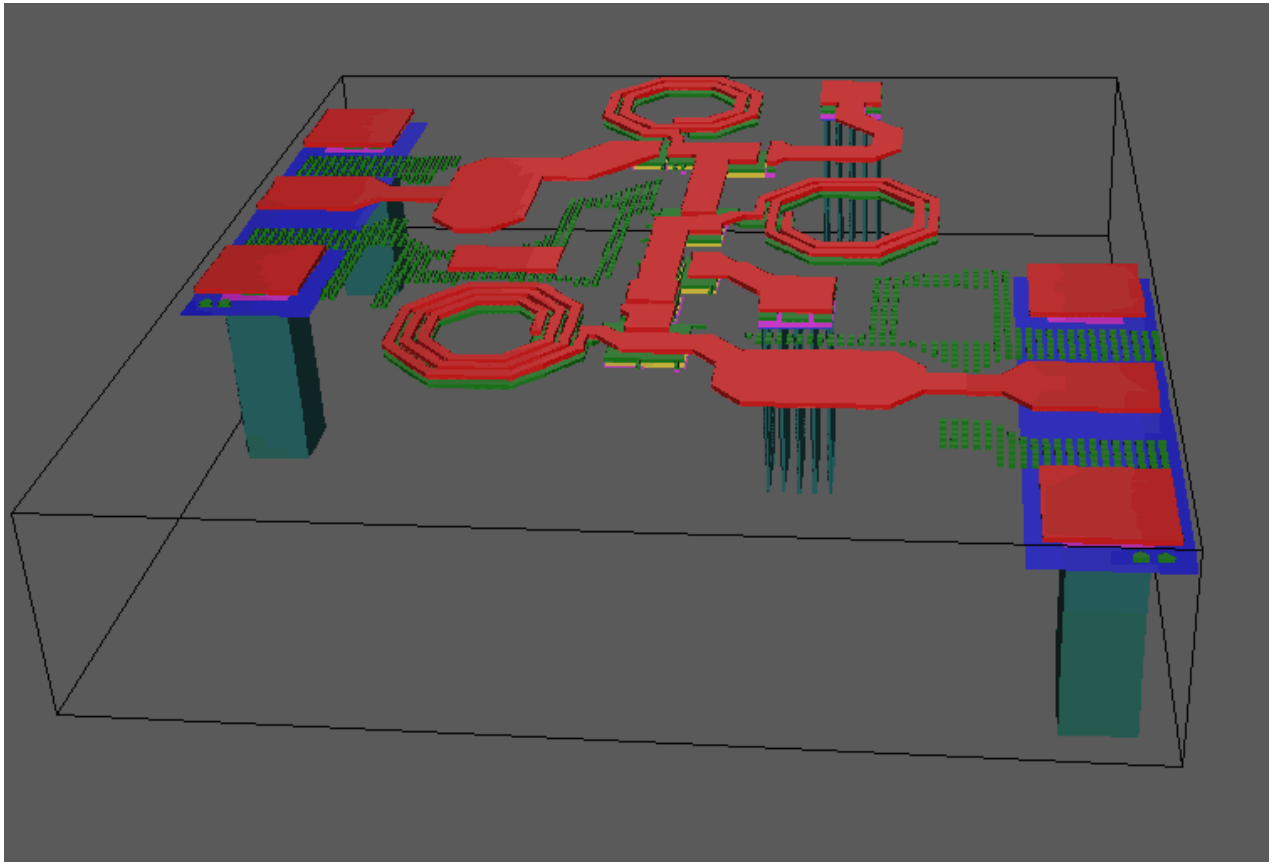
3 different output stages
1. **1536 um 15 um pitch**
2. **1334 um 24 um pitch**
3. **1536 um 24 um pitch**

Array 1 model is measurement based, and arrays 2 and 3 models are IBM NPN models + EMX layout models

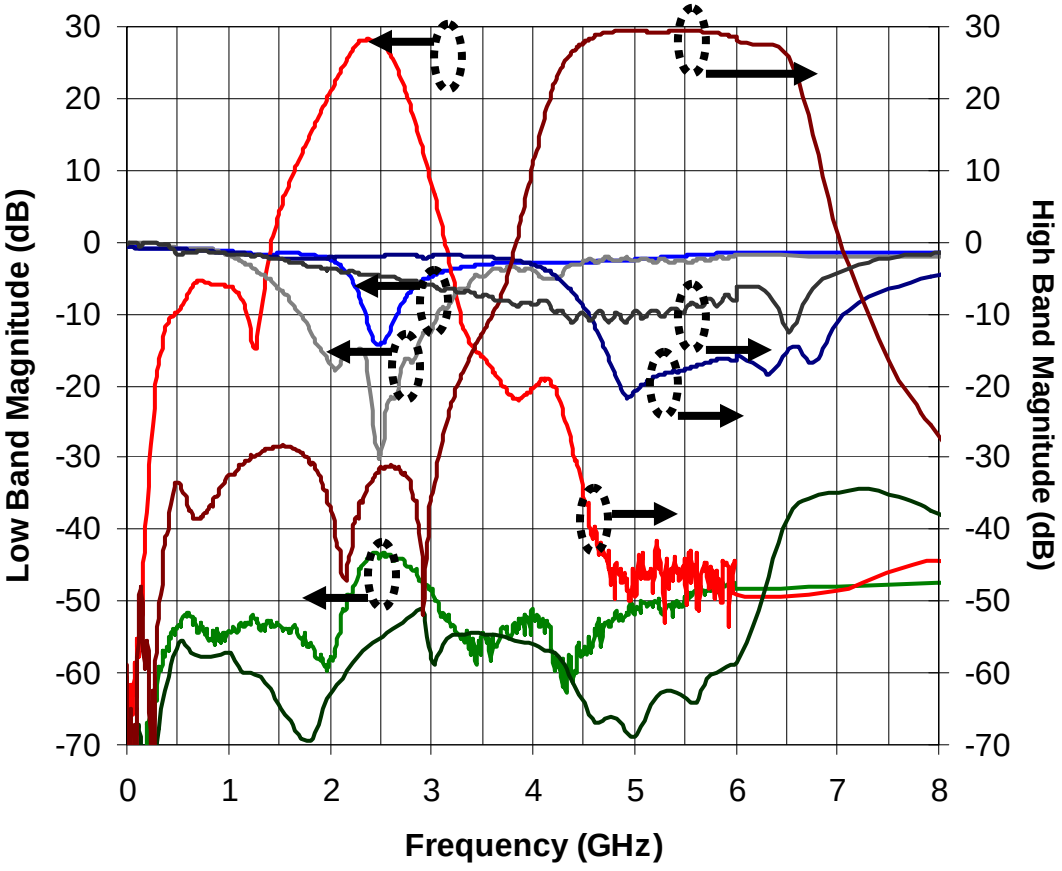




100% EM-Based Design Flow Example



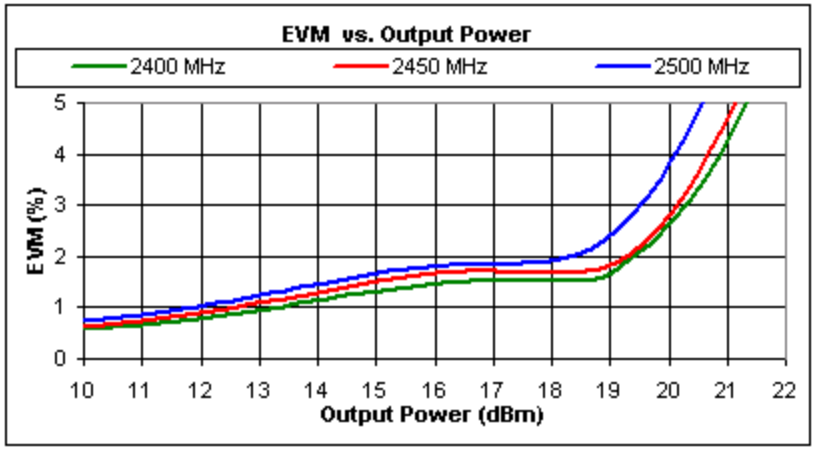
Dual band gain response overlay

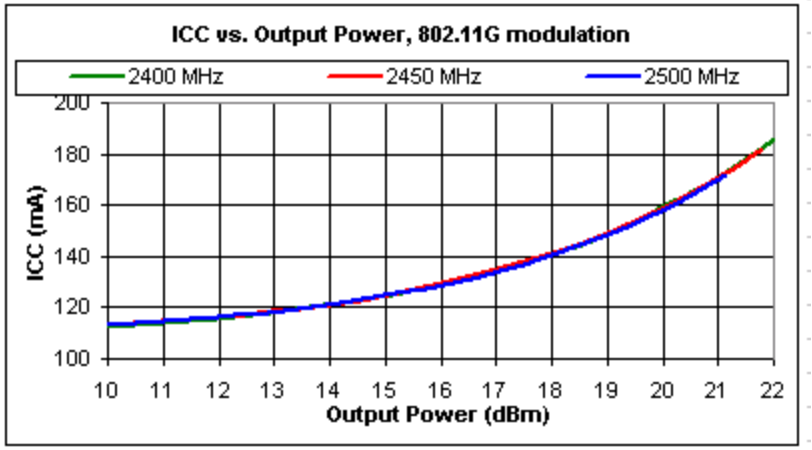


Bg-band performance, external match

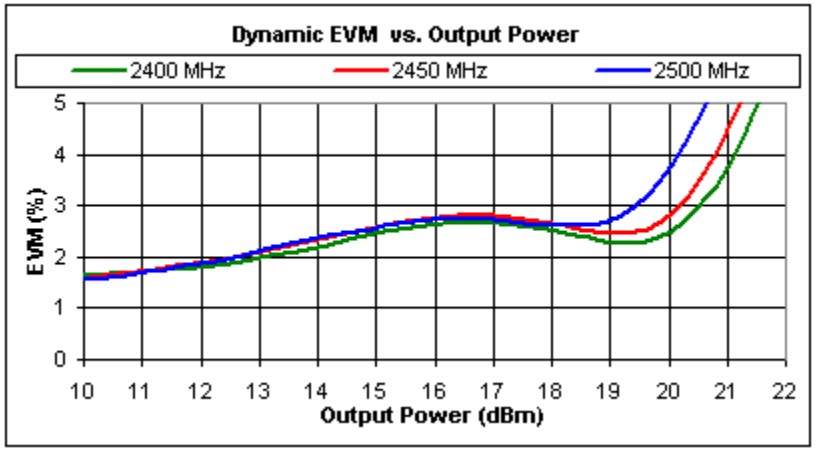
Peter: Taken from SE2580, external match

static



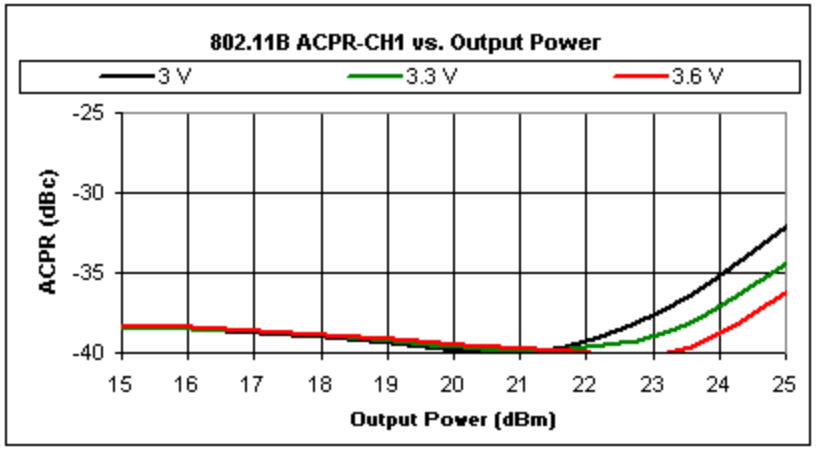


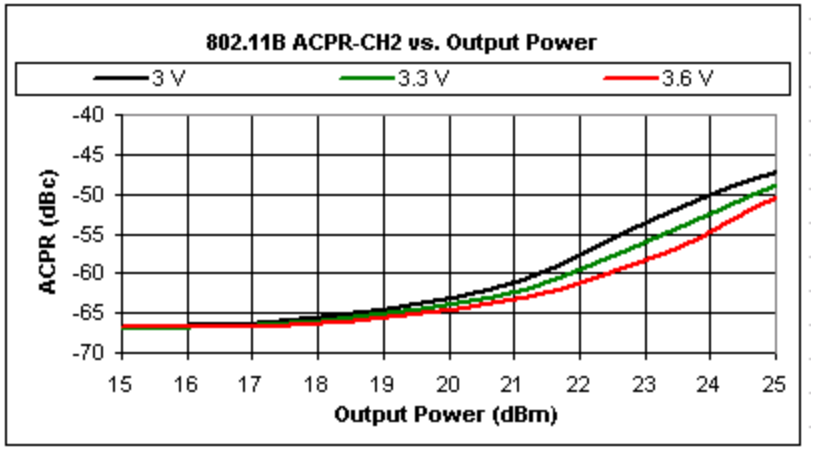
dynamic

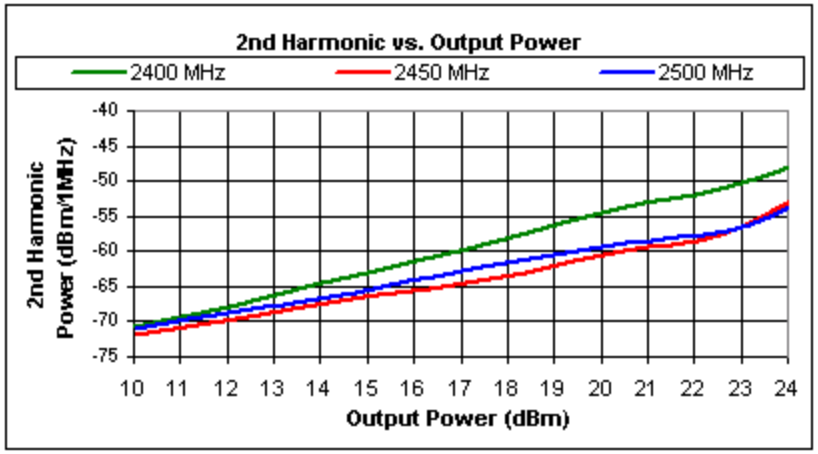


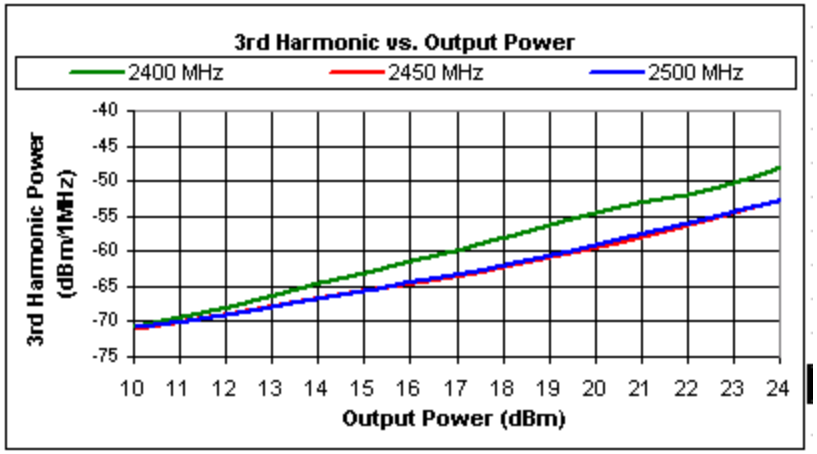
Bg-band Harmonic, external match

Peter: Taken from SE2580, external match



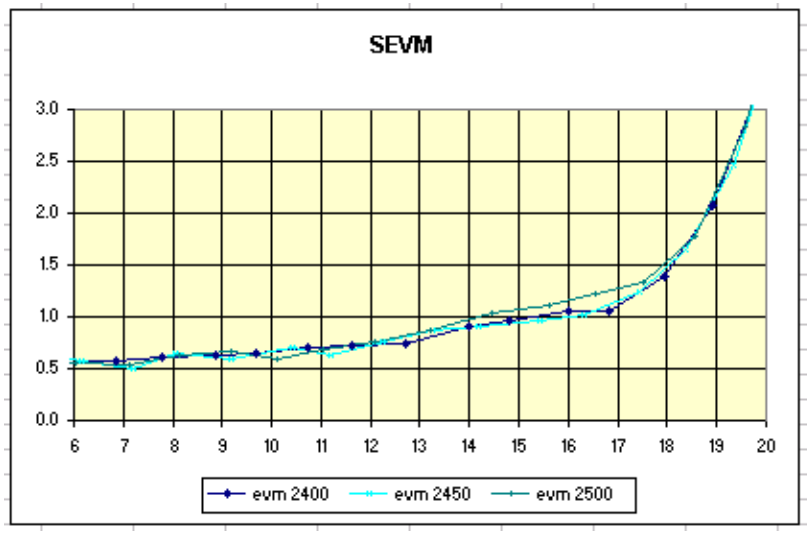


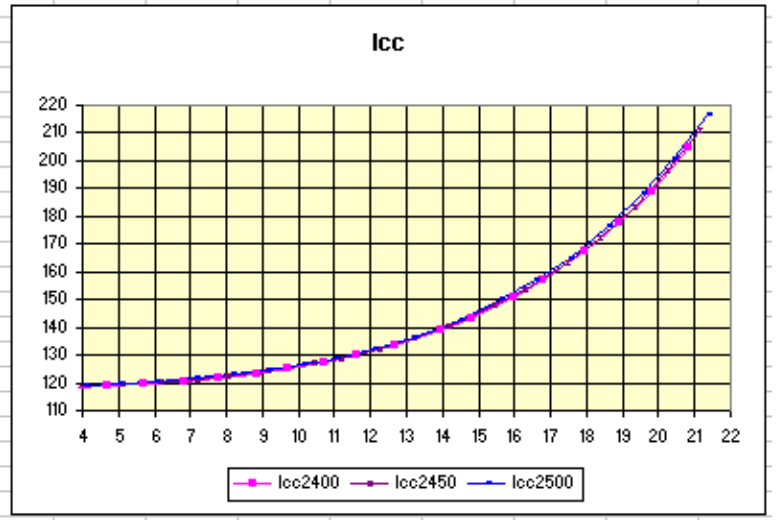


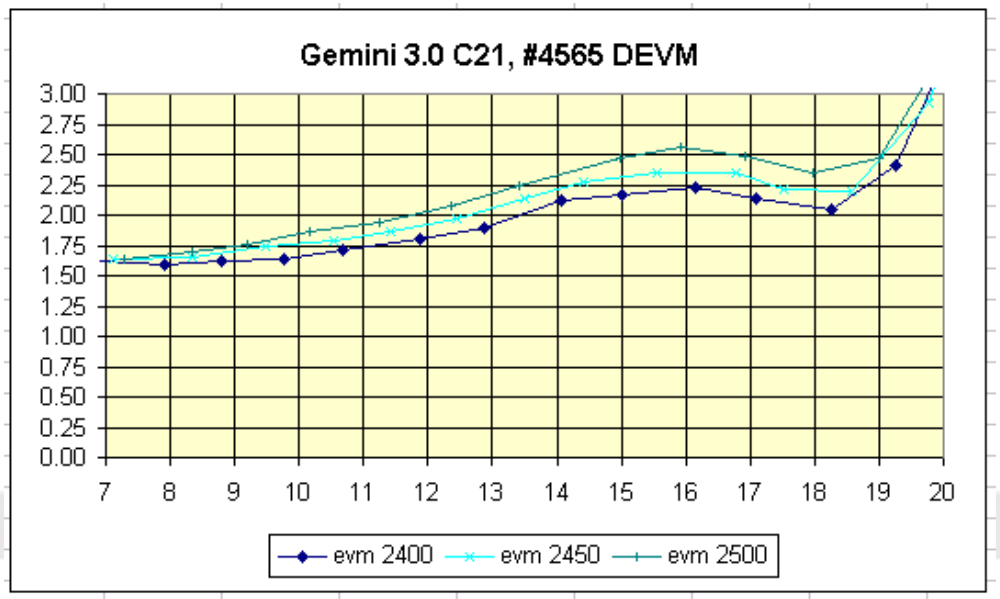


Bg-band power performance, internal match

Peter: Taken from Gemini C21, internal match

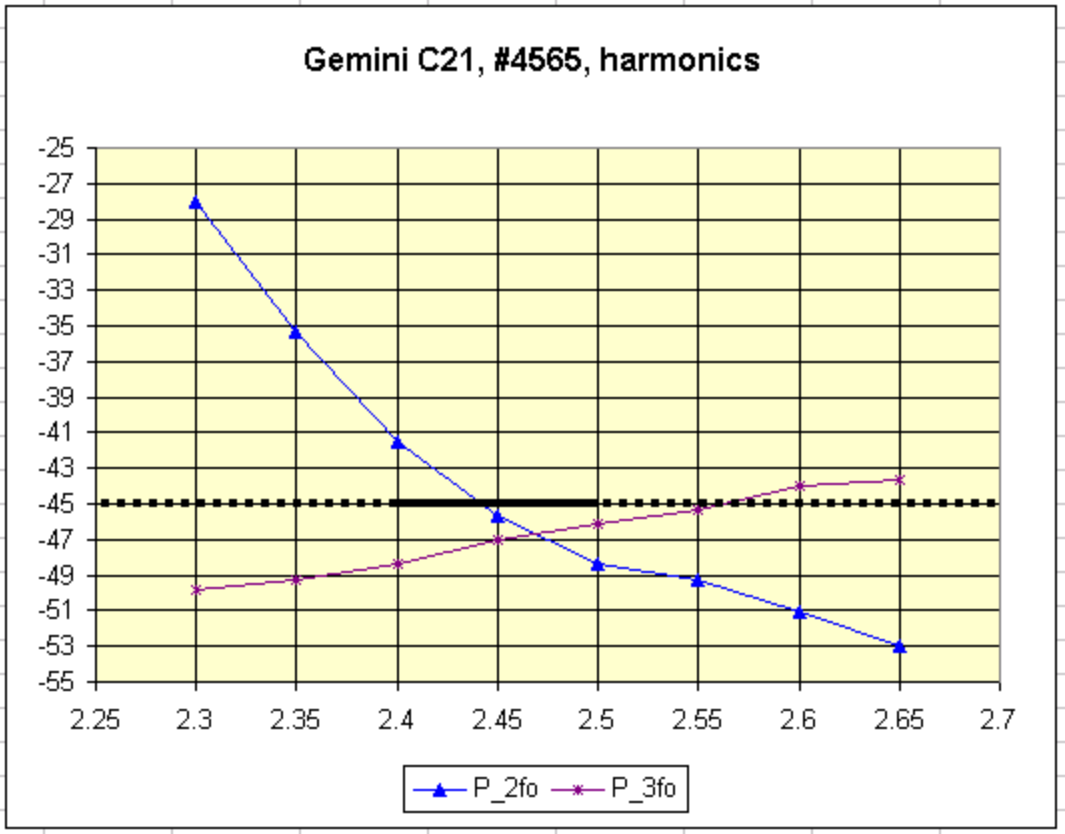




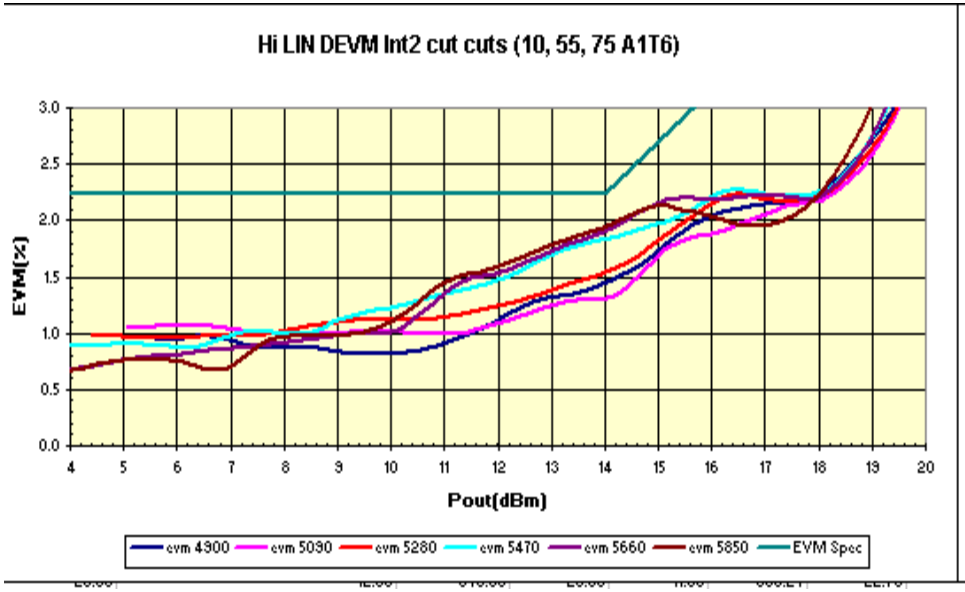


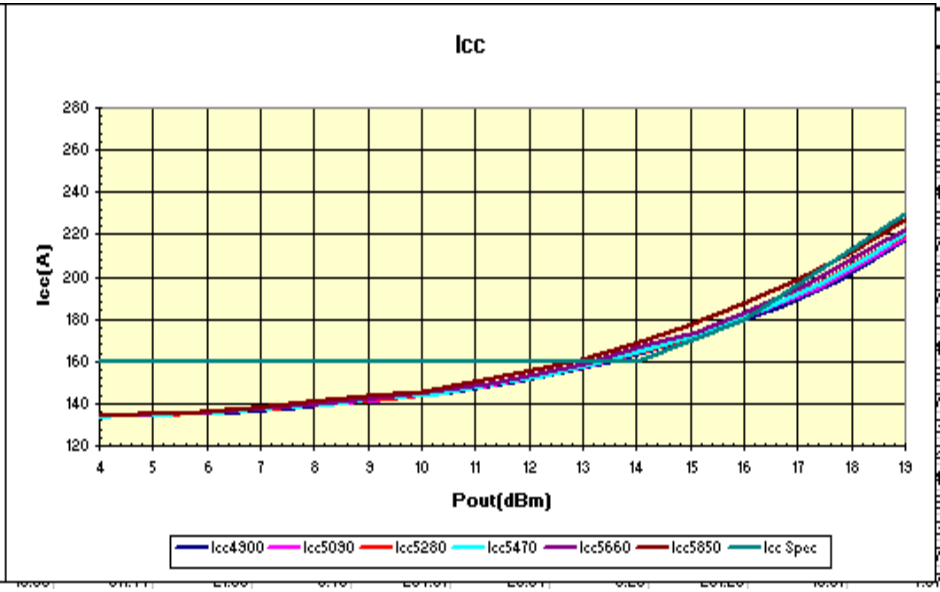
Bg-band harmonic performance, internal match

Peter: Taken from Gemini C21, internal match

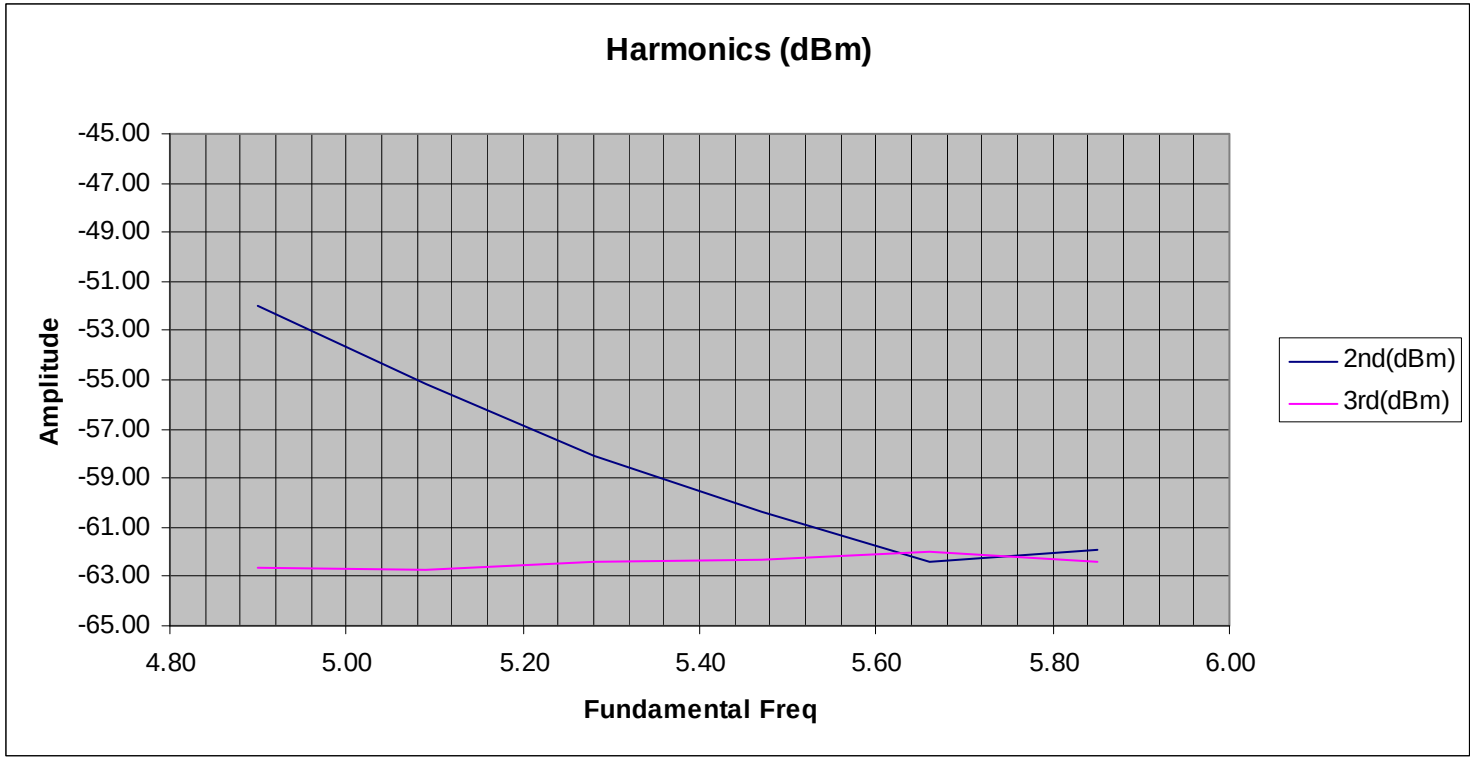


A-band performance





A-band harmonics & Detector Example



Example of Programmable Dynamic Evm Reduction Circuits

Conditions: 3.3V, 5.85Ghz