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

BG-band

OMN

Detector & Bias Blocks

A-band

SBI
Band-gap ckt.
Critical Tuning
Criticalness is ranked by numbers above

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

Tunable On-chip OMN
100% EM-Based Design Flow Example
Dual band gain response overlay

Frequency (GHz)

Low Band Magnitude (dB)

High Band Magnitude (dB)
static

Peter: Taken from SE2580, external match

- **EVM vs. Output Power**
- **ICC vs. Output Power, 802.11G modulation**

dynamic

- **Dynamic EVM vs. Output Power**
Peter: Taken from SE2580, external match
Peter: Taken from Gemini C21, internal match

![Graphs showing power performance and internal match for Gemini C21](image-url)
Peter: Taken from Gemini C21, internal match
A-band performance

Hi LIN DEVM Int2 cut cuts (10, 55, 75 A116)

ICC
A-band harmonics & Detector Example

Harmonics (dBm)

Fundamental Freq

Amplitude

2nd(dBm)

3rd(dBm)
Example of Programmable Dynamic Evm Reduction Circuits

Conditions: 3.3V, 5.85Ghz