

## Apple 3G iPhone

### Quad-band GSM/Tri-band W-CDMA with EDGE/HSDPA Report #11000-080711-BCg

Weight: 134.8 grams measured  
(1.8 grams more than spec)



#### Product Description:

Accompanied by media frenzy, the July 2008 release of the Apple 3G iPhone proved to be an event of worldwide significance. Retaining the sleek glass-faced bar form and touchscreen interface of its predecessor, the new iPhone builds on an established platform by doubling available memory and adding functionality. Of particular interest is the addition of W-CDMA/HSDPA capability and Assisted GPS, improvements that propel the 3G iPhone into the "World Phone" arena. Both the 8GB and 16GB models were examined for this report. With the exception of memory capacity, the two are essentially identical. The now-familiar feature set, including orientation-sensitive display, 2.0MP camera, 802.11b/g WiFi, Bluetooth, music and video player, and games, is again integrated into a highly intuitive user environment.

#### Report Contents:

- Detailed external & internal photos
- Detailed step-by-step disassembly
- Power measurements
- Block Diagram
- Circuit board & packaging metrics
- Complete parts list & component count
- Manufacturing cost analysis
- Description of most interesting electronic features & packaging concepts

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## Electronic Assembly Metrics

### Electronic Assembly Metrics by Assembly ( Includes Subsystem Assemblies)

Assembly Name	Substrate Area (sq.cm)	Metal Layers	Circuit Area (sq.cm)	Routing Density (cm of routing per sq.cm of substrate)	Number of Components	Number of Connections	Component Density (Components/sq.cm)	Connection Density (Connections/sq.cm)	Avg. Pin Count	Assembly Weight (grams)
System: Docking Board	5.6	4	22.3	31.5	31	138	5.6	24.7	4.5	5.1
System: Earpiece/Sensor Board	3.0	2	5.9	19.7	23	54	7.8	18.3	2.3	0.7
System: Main Board	42.2	10	421.7	60.5	843	3801	20.0	90.1	4.5	44.05
System: User Interface Board	6.6	2	13.2	14.4	19	54	2.9	8.2	2.8	0.8
System: WiFi/Bluetooth Board	1.0	6	5.9	104.3	65	279	65.7	281.8	4.3	0.3
Battery Pack: Battery PCB	1.3	2	2.6	31.4	10	38	7.6	28.8	3.8	0.4
Camera Module: Camera Flex	1.6	2	3.3	89.5	2	54	1.2	32.9	27.0	0
Display Module: Display Flex	4.3	2	8.6	209.5	23	695	5.3	161.3	30.2	0.5
<b>System Totals</b>	<b>65.58</b>	<b>30</b>	<b>483.64</b>		<b>1016</b>	<b>5113</b>	<b>15.5</b>	<b>78.0</b>	<b>5.0</b>	<b>51.85</b>

NOTE: Occasional inconsistencies in totals may be present due to rounding error.