

# EXHIBIT C


# **EXHIBIT F**

## **SAMSUNG'S PATENT L.R. 3-1(A)-(D) DISCLOSURES FOR U.S. PATENT NO. 7,362,867**

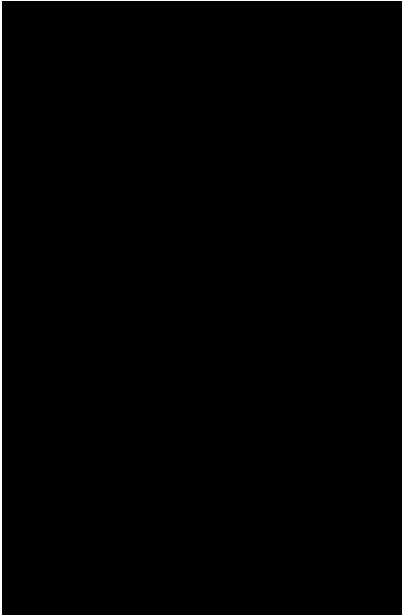
<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
<p>25. An apparatus for generating scrambling codes in mobile communication system having a scrambling code generator, comprising:</p>	<p>Apple’s 3G Products<sup>1</sup> contain an apparatus for generating scrambling codes in a mobile communications system having a scrambling code generator.</p> <p>For example, Apple’s 3G Products contain a baseband processor that generates scrambling codes used to transmit data in accordance with 3GPP Release 6 protocol.</p> <p><i>See</i> iPhone 3 Technical Specifications, <a href="http://support.apple.com/kb/sp495">http://support.apple.com/kb/sp495</a> (“Figure 1” shows Apple’s description that the iPhone 3 is a Universal Mobile Telecommunications System (“UMTS”) compliant device); iPhone 3G Teardown, <a href="http://www.ifixit.com/Teardown/iPhone-3G-Teardown/600/3">http://www.ifixit.com/Teardown/iPhone-3G-Teardown/600/3</a> (stating the iPhone 3 contains an Infineon BGA736 (Tri-Band HSDPA LNA) baseband processor); <i>see also</i> iPhone 3GS Technical Specifications, <a href="http://www.apple.com/iphone/iphone-3gs/specs.html">http://www.apple.com/iphone/iphone-3gs/specs.html</a> (“Figure 2” shows Apple’s description that the iPhone 3GS is a UMTS compliant device); Apple’s iPhone 3GS Costs \$178.96 to Manufacture, <a href="http://www.cellular-news.com/story/38186.php">http://www.cellular-news.com/story/38186.php</a> (“Infineon has held onto this critical [component of the iPhone 3GS] with its PMB8878 [X-GOLD 608] baseband chip . . . .”); <i>see also</i> iPad 3G Technical Specifications, <a href="http://support.apple.com/kb/SP580">http://support.apple.com/kb/SP580</a> (“Figure 3” shows Apple’s description that the iPad 3G is a UMTS compliant device); iPad 3G Teardown, <a href="http://www.ifixit.com/Teardown/iPad-3G-Teardown/2374/2">http://www.ifixit.com/Teardown/iPad-3G-Teardown/2374/2</a> (stating the iPad 3G contains an Infineon 337S3754 PMB 8878 X-Gold 608 baseband IC 5Y06115 processor); <i>see also</i> iPhone 4 Technical Specifications, <a href="http://www.apple.com/iphone/specs.html">http://www.apple.com/iphone/specs.html</a> (“Figure 4” shows Apple’s description that the iPhone 4 “GSM Model” is a UMTS compliant device); iPhone 4 Teardown, <a href="http://www.tgdaily.com/hardware-features/50344-the-real-iphone-4-teardown">http://www.tgdaily.com/hardware-features/50344-the-real-iphone-4-teardown</a> (stating the iPhone 4 contains an Infineon X-GOLD 61x Baseband Processor); <i>see also</i> iPhone 4S Technical Specifications, <a href="http://www.apple.com/iphone/specs.html">http://www.apple.com/iphone/specs.html</a> (“Figure 5” shows Apple’s description that the iPhone 4S is a UMTS compliant device); iPhone 4S</p>

<sup>1</sup> “Apple’s 3G Products” include iPhone 3G, iPhone 3GS, iPhone4, iPhone 4S, iPad 3G, iPad2 3G and any other products compliant with 3GPP UMTS standard.

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	<p>Teardown, <a href="http://www.ifixit.com/Teardown/iPhone-4S-Teardown/6610/2">http://www.ifixit.com/Teardown/iPhone-4S-Teardown/6610/2</a> (stating the iPhone 4S contains a Qualcomm MDM6610 Baseband Processor); <i>see also</i> iPad 2 Technical Specifications, <a href="http://www.apple.com/ipad/specs/">http://www.apple.com/ipad/specs/</a> (“Figure 6” shows Apple’s description that the iPad 2 3G “Wi-Fi +3G model” is a UMTS compliant device); iPad 2 Teardown, <a href="http://www.ifixit.com/Teardown/iPad-2-3G-GSM-CDMA-Teardown/5127/1">http://www.ifixit.com/Teardown/iPad-2-3G-GSM-CDMA-Teardown/5127/1</a> (stating the iPad 2 contains an Infineon 337S3833 (X-GOLD 61x) Baseband Processor); <i>see also</i> Definition of UMTS, <a href="http://www.3gpp.org/article/umts">http://www.3gpp.org/article/umts</a> (describing UMTS as a third generation (“3G”) wireless technology that uses a wideband CDMA (“WCDMA”) radio interface, the standards of which are created and governed by the Third Generation Partnership Project (“3GPP”)); <i>see also</i> 3GPP TS 25.213 v5.0.0 at 28 (noting the inclusion of HSDPA into the 3GPP standard); <i>see also</i> X-GOLD 608 Technical Specification, <a href="http://www.infineon.com/dgdl/X-GOLD608-PMB8878+PB.pdf?folderId=db3a304312fcb1bc0113000c158f0004&amp;fileId=db3a30431be39b97011c09549f077a1a">http://www.infineon.com/dgdl/X-GOLD608-PMB8878+PB.pdf?folderId=db3a304312fcb1bc0113000c158f0004&amp;fileId=db3a30431be39b97011c09549f077a1a</a> (“Figure 7” shows Infineon’s assertion that the X-GOLD 608 Processor uses HSDPA); <i>see also</i> X-GOLD 616 Technical Specification, <a href="http://www.infineon.com/dgdl/X-GOLD+616.pdf?folderId=db3a304312fcb1bc0113000c158f0004&amp;fileId=db3a30431ed1d7b2011f5bee88ef75eb">http://www.infineon.com/dgdl/X-GOLD+616.pdf?folderId=db3a304312fcb1bc0113000c158f0004&amp;fileId=db3a30431ed1d7b2011f5bee88ef75eb</a> (“Figure 8” shows Infineon’s assertion that the X-GOLD 61x Baseband Processor is compatible with 3GPP Release 6 protocols).</p> <p style="text-align: center;">Figure 1 – iPhone 3 Technical Specifications</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p><b>Cellular and wireless</b></p> <ul style="list-style-type: none"> <li>▪ UMTS/HSDPA (850, 1900, 2100 MHz)</li> <li>▪ GSM/EDGE (850, 900, 1800, 1900 MHz)</li> <li>▪ Wi-Fi (802.11 b/g)</li> <li>▪ Bluetooth 2.0 + EDR</li> </ul> </div>

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	<p data-bbox="1081 428 1598 456">Figure 2 – iPhone 3GS Technical Specifications</p> <div data-bbox="1083 487 1579 1318" style="border: 1px solid black; padding: 10px;">  <p data-bbox="1083 1057 1415 1089"><b>Cellular and wireless</b></p> <ul data-bbox="1098 1125 1566 1295" style="list-style-type: none"> <li>▪ UMTS/HSDPA (850, 1900, 2100 MHz)</li> <li>▪ GSM/EDGE (850, 900, 1800, 1900 MHz)</li> <li>▪ 802.11b/g Wi-Fi</li> <li>▪ Bluetooth 2.1 + EDR wireless technology</li> </ul> </div>


<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	<p data-bbox="1081 397 1556 423">Figure 3 – iPad 3G Technical Specifications</p> <div data-bbox="1096 456 1543 722" style="border: 1px solid black; padding: 5px;"> <p data-bbox="1108 467 1297 488"><b>Wi-Fi + 3G model</b></p> <ul style="list-style-type: none"> <li data-bbox="1123 521 1486 542">▪ UMTS/HSDPA (850, 1900, 2100 MHz)</li> <li data-bbox="1123 561 1514 583">▪ GSM/EDGE (850, 900, 1800, 1900 MHz)</li> <li data-bbox="1123 602 1241 623">▪ Data only<sup>2</sup></li> <li data-bbox="1123 643 1346 664">▪ Wi-Fi (802.11a/b/g/n)</li> <li data-bbox="1123 683 1430 704">▪ Bluetooth 2.1 + EDR technology</li> </ul> </div> <p data-bbox="1081 1393 1556 1419">Figure 4 – iPhone 4 Technical Specifications</p>

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	 <p data-bbox="1096 1377 1591 1401">Figure 5 – iPhone 4S Technical Specifications</p>

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	<div data-bbox="1100 334 1887 967" style="border: 1px solid gray; padding: 10px;"> <div data-bbox="1115 375 1262 407"> <p>Size and Weight:</p> </div> <div data-bbox="1360 383 1528 656"> </div> <div data-bbox="1598 477 1814 602"> <p>Height: 4.5 inches (115.2 mm)  Width: 2.31 inches (58.6 mm)  Depth: 0.37 inch (9.3 mm)  Weight: 4.9 ounces (140 grams)</p> </div> <div data-bbox="1115 735 1226 792"> <p>Cellular and Wireless</p> </div> <div data-bbox="1325 735 1633 922"> <ul style="list-style-type: none"> <li>• World phone</li> <li>• UMTS/HSDPA/HSUPA (850, 900, 1900, 2100 MHz); GSM/EDGE (850, 900, 1800, 1900 MHz)</li> <li>• CDMA EV-DO Rev. A (800, 1900 MHz)<sup>+</sup></li> <li>• 802.11b/g/n Wi-Fi (802.11n 2.4GHz only)</li> <li>• Bluetooth 4.0 wireless technology</li> </ul> </div> <div data-bbox="1738 743 1835 797"> </div> <div data-bbox="1730 824 1835 865"> </div> </div>

Figure 6 – iPad 2 Technical Specifications



<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	<div data-bbox="1108 342 1522 1084" style="border: 1px solid black; padding: 10px; margin: 0 auto; width: fit-content;"> <p style="text-align: center; margin: 0;"><b>Wi-Fi + 3G</b></p>  <ul style="list-style-type: none"> <li>▪ Height: 9.50 inches (241.2 mm)</li> <li>▪ Width: 7.31 inches (185.7 mm)</li> <li>▪ Depth: 0.34 inch (8.8 mm)</li> <li>▪ Weight: 1.35 pounds (613 g) (Wi-Fi + 3G model)</li> <li>▪ Weight: 1.34 pounds (607 g) (Wi-Fi + 3G for Verizon model)</li> </ul> <div style="display: flex; justify-content: center; gap: 20px; margin: 10px 0;"> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px 15px;">16GB</div> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px 15px;">32GB</div> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px 15px;">64GB</div> </div> <ul style="list-style-type: none"> <li>▪ Wi-Fi + 3G model: UMTS/HSDPA/HSUPA (850, 900, 1900, 2100 MHz); GSM/EDGE (850, 900, 1800, 1900 MHz)</li> <li>▪ Wi-Fi + 3G for Verizon model: CDMA EV-DO Rev. A (800, 1900 MHz)</li> <li>▪ Data only<sup>3</sup></li> <li>▪ Wi-Fi (802.11 a/b/g/n)</li> <li>▪ Bluetooth 2.1 + EDR technology</li> </ul> </div> <p style="text-align: center; margin-top: 20px;">Figure 7 – Product Brief of Infineon X-GOLD 608 Processor</p>

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	<div data-bbox="1094 339 1572 756" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p><b>Key Modem Features</b></p> <ul style="list-style-type: none"> <li>■ HSDPA - category 8 (7.2Mbit/s) <ul style="list-style-type: none"> <li>- Implementation of fractional chip rate equalizer</li> <li>- Configurable to lower categories / data rates</li> <li>- Option to switch off HSDPA to save power</li> </ul> </li> <li>■ WCDMA <ul style="list-style-type: none"> <li>- 384kbit/s class for uplink and downlink</li> <li>- 640kbit/s peak data rates for uplink and downlink independently</li> </ul> </li> </ul> </div> <p style="text-align: center;">Figure 8 – Product Brief of Infineon X-GOLD 616 Processor</p> <div data-bbox="1104 885 1562 1333" style="border: 1px solid black; padding: 5px;"> <p><b>Platform Features</b></p> <ul style="list-style-type: none"> <li>■ Modem Area &lt; 7cm<sup>2</sup>; ~100 components</li> <li>■ Standby current <ul style="list-style-type: none"> <li>- 2G: 0.9mA</li> <li>- 3G: 1.1mA</li> </ul> </li> <li>■ 3GPP Release 6 Protocol stack</li> <li>■ HSDPA cat 8, HSUPA cat 6</li> <li>■ 3 band HSPA, quad band EDGE</li> <li>■ Optional up to 5 band HSPA possible</li> <li>■ A-GPS interfacing</li> </ul> </div>
a first m-sequence generator to generate	Apple’s 3G Products contain a first m-sequence generator to generate a first m-sequence.

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
<p>a first m-sequence;</p>	<p>For example, Apple’s 3G Products contain a UMTS/WCDMA compliant baseband processor for processing the UMTS (“3G”) signals, compliant with 3GPP protocols that generates two binary <i>m</i>-sequences by means of two generator polynomials of degree 18. The first m-sequence, referred to as the “<i>x</i> sequence” is constructed using the primitive (over GF(2)) polynomial <math>1 + X^7 + X^{18}</math>.</p> <p><i>See</i> iPhone 3G Teardown (“Figure 9” shows a breakdown of the iPhone 3G components including an Infineon BGA736 (Tri-Band HSDPA LNA) Processor); <i>see also</i> iPhone 3GS Teardown (“Figure 10” shows a breakdown of the iPhone 3GS components including the Infineon PMB 8878 X-GOLD Baseband Processor); iPad 3G Teardown (“Figure 11” shows a breakdown of one set of components on the iPad 3 3G Model including the Infineon 337S3754 PMB 8878 X-GOLD Baseband Processor); <i>see also</i> iPhone 4 Teardown (“Figure 12” shows a breakdown of the components located on the rear of the iPhone 4 including the Infineon X-GOLD Baseband Processor); <i>see also</i> iPhone 4S Teardown (“Figure 13” shows a breakdown of the components located on the rear of the iPhone 4S including the Qualcomm MDM6610 Baseband Processor); iPad 2 Teardown (“Figure 14” shows a breakdown of one set of components on the iPad 2 Wi-Fi +3G Model including the Infineon 337S3833 Baseband Processor); <i>see also</i> Figure 8 (describing the Infineon X-GOLD Baseband Processor as 3GPP Release 6 Protocol compliant); <i>see also</i> BGA736 Data Sheet; <i>see also</i> X-GOLD 608 Product Brief; <i>see also</i> X-GOLD 616 Technical Specification; <i>see also</i> 3GPP TS 25.213 v5.0.0 at 22, §5.2.2 “Scrambling code” (“Each of the two real sequences are constructed as the position wise modulo 2 sum of 38400 chip segments of two binary <i>m</i>-sequences generated by means of two generator polynomials of degree 18. The resulting sequences thus constitute segments of a set of Gold sequences . . . Let <i>x</i> and <i>y</i> be the two sequences respectively. The <i>x</i> sequence is constructed using the primitive (over GF(2)) polynomial <math>1 + X^7 + X^{18}</math>.”); <i>see also</i> 3GPP TS 25.213 v6.0.0 at 22.</p>

**ASSERTED CLAIM  
(PATENT L.R. 3-1(A))**

**ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY  
ACCUSED INSTRUMENTALITY  
(PATENT L.R. 3-1(B)-(D))**

Figure 9 – iPhone 3G Components

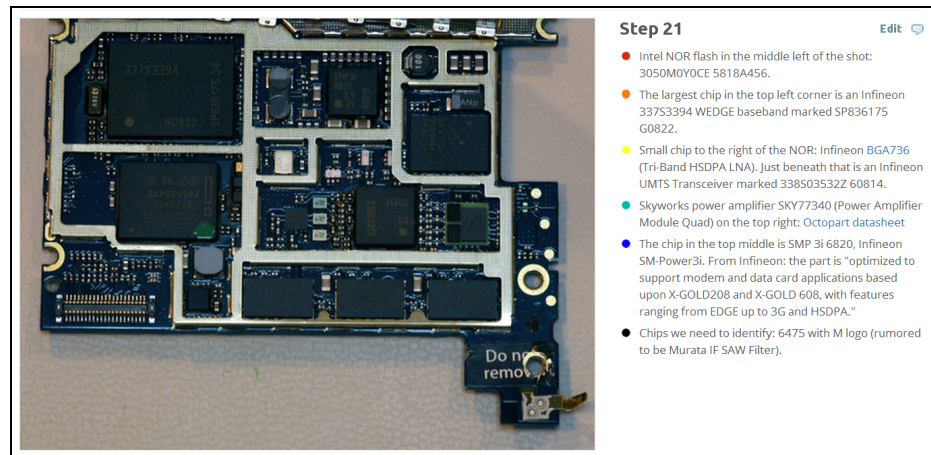
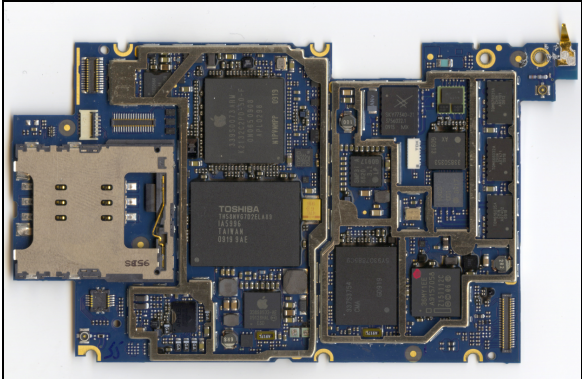
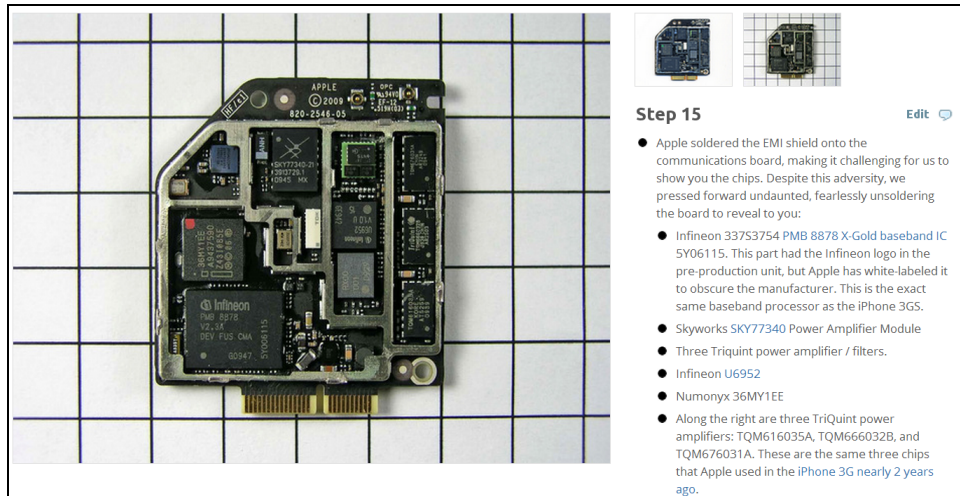


Figure 10 – iPhone 3GS Components

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	 <p data-bbox="1129 1398 1493 1425">Figure 11 – iPad 3G Components</p>

**ASSERTED CLAIM  
(PATENT L.R. 3-1(A))**

**ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY  
ACCUSED INSTRUMENTALITY  
(PATENT L.R. 3-1(B)-(D))**



**Step 15** Edit

- Apple soldered the EMI shield onto the communications board, making it challenging for us to show you the chips. Despite this adversity, we pressed forward undaunted, fearlessly unsoldering the board to reveal to you:
- Infineon 337S3754 PMB 8878 X-Gold baseband IC 5Y06115. This part had the Infineon logo in the pre-production unit, but Apple has white-labeled it to obscure the manufacturer. This is the exact same baseband processor as the iPhone 3GS.
- Skyworks SKY77340 Power Amplifier Module
- Three TriQuint power amplifier / filters.
- Infineon U6952
- Numonyx 36MY1EE
- Along the right are three TriQuint power amplifiers: TQM616035A, TQM666032B, and TQM676031A. These are the same three chips that Apple used in the iPhone 3G nearly 2 years ago.

Figure 12 – iPhone 4 Components

**ASSERTED CLAIM  
(PATENT L.R. 3-1(A))**

**ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY  
ACCUSED INSTRUMENTALITY  
(PATENT L.R. 3-1(B)-(D))**

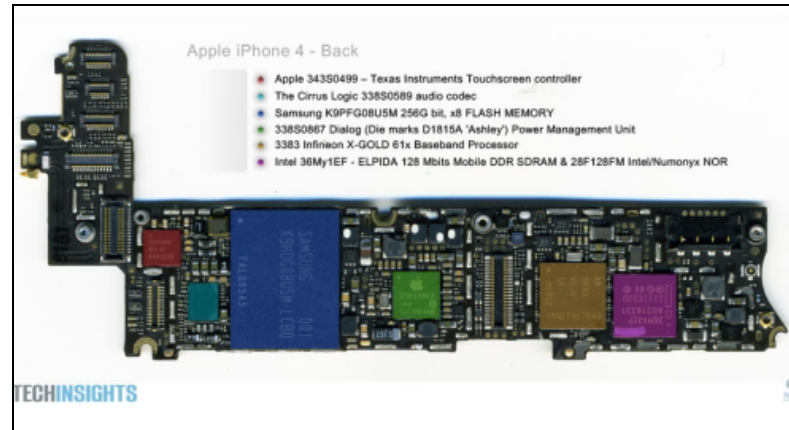


Figure 13 – iPhone 4S Components

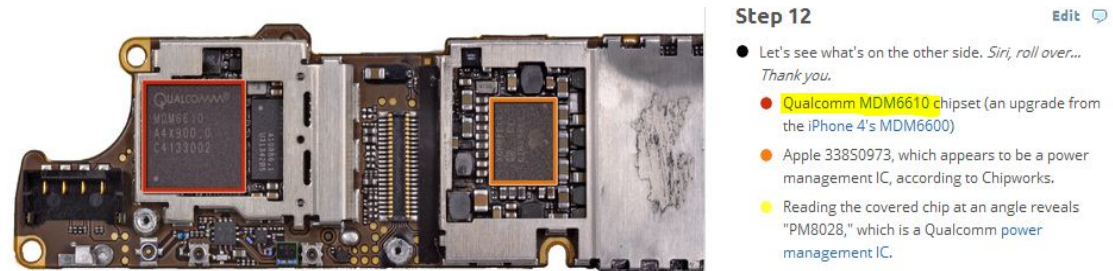



Figure 14 – iPad 2 Wi-Fi +3G Components

<p style="text-align: center;"><b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b></p>	<p style="text-align: center;"><b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b></p>
	<div style="text-align: center;">  </div>
<p>a second m-sequence generator to generate a first m-sequence; and</p>	<p>Apple's 3G Products contain a second m-sequence generator to generate a first m-sequence.</p> <p>For example, Apple's 3G Products construct the second m-sequence, referred to as the "y sequence," using the primitive (over GF(2)) polynomial <math>I+X^5+X^7+X^{10}+X^{18}</math>.</p> <p><i>See</i> 3GPP TS 25.213 v5.0.0 at 22, §5.2.2 "Scrambling code" ("Each of the two real sequences are constructed as the position wise modulo 2 sum of 38400 chip segments of two binary <i>m</i>-sequences generated by means of two generator polynomials of degree 18. The resulting sequences thus constitute segments of a set of Gold sequences . . . Let <i>x</i> and <i>y</i> be the two sequences respectively . . . The <i>y</i> sequence is constructed using the polynomial <math>I+X^5+X^7+X^{10}+X^{18}</math>."); <i>see also</i> 3GPP TS 25.213 v6.0.0 at 22.</p>
<p>at least one adder for generating a <math>((K-1)*M+K)^{th}</math> Gold code as a <math>K^{th}</math> primary scrambling code by adding a <math>((K-1)*M+K-1)</math>-times shifted first m-sequence and the second m-sequence, wherein K is a natural number and M is</p>	<p>Apple's 3G Products contain at least one adder for generating a <math>((K-1)*M+K)^{th}</math> Gold code as a <math>K^{th}</math> primary scrambling code by adding a <math>((K-1)*M+K-1)</math>-times shifted first m-sequence and the second m-sequence, wherein K is a natural number and M is a total number of secondary scrambling codes per one primary scrambling code.</p> <p>For example, Apple's 3G Products divide scrambling codes into 512 sets, each having one</p>



<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
<p>a total number of secondary scrambling codes per one primary scrambling code.</p>	<p>primary scrambling code and 15 secondary scrambling codes. As a result, <math>K = [1</math> through 512] and <math>M = 15</math>. Apple's 3G Products add an "n" shifted first m-sequence with a second m-sequence to produce an n:th Gold code <math>z_n(i)</math>.</p> <p><u>Example No. 1:</u></p> <p>The primary scrambling codes consists of the scrambling codes <math>n=16*i</math>, where <math>i = 0, 1, 2...511</math>.</p> <p>For <math>K=1</math>, the first primary code is the 1st Gold code. This is calculated by substituting <math>K=1</math> and <math>M=15</math> into the equation <math>(K-1)*M+K</math>. As a result, the first primary code is the <math>(1-1)*15+1= 1</math>st Gold code. For <math>K=1</math>, <math>n=0</math> because <math>i[1] = 0</math> and <math>n=16*i</math>.</p> <p>The first Gold code is composed of a <math>((K-1)*M+K)-1</math> shifted first m-sequence and second m-sequence. The value of the shift for <math>K=1</math> is <math>((1-1)*15+1)-1 = 0</math>. For Gold code <math>z_n(i) = x((i+n) \text{ modulo } (2^{18} - 1)) + y(i) \text{ modulo } 2</math>, where <math>i=0, \dots, 2^{18}-2</math>, <math>z_0(i)=x((i) \text{ modulo } (2^{18} - 1)) + y(i) \text{ modulo } 2</math>.</p> <p><u>Example No. 2:</u></p> <p>For <math>K=2</math>, the second primary code is the 17th Gold code. This is calculated by substituting <math>K=2</math> and <math>M=15</math> into the equation <math>(K-1)*M+K</math>. As a result, the second primary code is the <math>(2-1)*15+2= 17</math>th Gold code. For <math>K=2</math>, <math>n=16</math> because <math>i[2] = 1</math> and <math>n=16*i</math>.</p> <p>The 17th Gold code is composed of a <math>((K-1)*M+K)-1</math> shifted first m-sequence and second m-sequence. The value of the shift for <math>K=2</math> is <math>((2-1)*15+2)-1 = 16</math>. For Gold code <math>z_n(i) = x((i+n) \text{ modulo } (2^{18} - 1)) + y(i) \text{ modulo } 2</math>, where <math>i=0, \dots, 2^{18}-2</math>, <math>z_{16}(i)=x((i+16) \text{ modulo } (2^{18} - 1)) + y(i) \text{ modulo } 2</math>.</p>

<p style="text-align: center;"><b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b></p>	<p style="text-align: center;"><b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b></p>
	<p><u>Example No. 3:</u></p> <p>For K=3, the third primary code is the 33<sup>rd</sup> Gold code. This is calculated by substituting K=3 and M=15 into the equation <math>(K-1)*M+K</math>. As a result, the third primary code is the <math>(3-1)*15+3= 33</math>rd Gold code. For K=3, n=32 because <math>i[3] = 2</math> and <math>n=16*i</math>.</p> <p>The 33rd Gold code is composed of a <math>((K-1)*M+K)-1</math> shifted first m-sequence and second m-sequence. The value of the shift for K=3 is <math>((3-1)*15+3)-1 = 32</math>. For Gold code <math>z_n(i) = x((i+n) \text{ modulo } (2^{18} - 1)) + y(i) \text{ modulo } 2</math>, where <math>i=0, \dots, 2^{18}-2</math>, <math>z_{32}(i)=x((i+32) \text{ modulo } (2^{18} - 1)) + y(i) \text{ modulo } 2</math>.</p> <p><i>See 3GPP TS 25.213 v5.0.0 at 22, § 5.2.2 “Scrambling code,” (describing the n:th Gold code sequence “<math>z_n, n= 0,1,2, \dots, 2^{18}-2</math>,” as defined as “<math>z_n(i) = x((i+n) \text{ modulo } (2^{18} - 1)) + y(i) \text{ modulo } 2, i=0, \dots, 2^{18}-2</math>” where “<math>n= 16*i</math> where <math>i=0 \dots 511</math>.”); <i>see also id.</i> at 22 (“A total of <math>2^{18}-1 = 262,143</math> scrambling codes, numbered 0 . . . 262,142 can be generated. However not all the scrambling codes are used. The scrambling codes are divided into 512 sets each of a primary scrambling code and 15 secondary scrambling codes.”); <i>see also 3GPP TS 25.213 v6.0.0.</i></i></p>
<p>26. The apparatus of claim 25, wherein the secondary scrambling codes of the <math>K^{th}</math> primary scrambling codes are the <math>((K-1)*M+K+1)^{th}</math> through <math>(K*M+K)^{th}</math> Gold codes.</p>	<p>Apple’s 3G Products contain secondary scrambling codes of the <math>K^{th}</math> primary scrambling codes that are the <math>((K-1)*M+K+1)^{th}</math> through <math>(K*M+K)^{th}</math> Gold codes.</p> <p>For example, Apple’s 3G Products divide scrambling codes into 512 sets, each having one primary scrambling code and 15 secondary scrambling codes. The primary scrambling codes consist of scrambling codes <math>n=16*i</math> where <math>i=0 \dots 511</math>. The <math>i</math>:th set of secondary scrambling codes consists of scrambling codes <math>16*i+k</math>, where <math>k=1 \dots 15</math>. As a result, for every 16 scrambling codes, the first code is a primary scrambling code whereas the 2nd</p>

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	<p>through 16th codes are secondary codes.</p> <p><u>Example No. 1:</u></p> <p>For <math>K=1</math>, <math>((K-1)*M+K+1) = (1-1)*15+1+1) = (0+2) = 2</math> and <math>(K*M+K) = (1*15+1) = (15+1) = 16</math>. In Apple's 3G Products, the first primary scrambling code is <math>n=16*0 = 0</math>, while the secondary scrambling codes consists of <math>16*0+k</math> (where <math>k = 1...15) = [1...15]</math>.</p> <p>As a result, for the first group of 16 scrambling codes (0 through 15), the first scrambling code is a primary scrambling code (code 0), whereas codes 2 through 16 are secondary scrambling codes.</p> <p><u>Example No. 2:</u></p> <p>For <math>K=2</math>, <math>((K-1)*M+K+1) = ((2-1)*15+2+1) = (15+3) = 18</math> and <math>(K*M+K) = (2*15+2) = (30+2) = 32</math>. In Apple's 3G Products, the second primary scrambling code is <math>n=16*1 = 16</math>, while the second group of secondary scrambling codes consists of <math>16*1+k</math> (where <math>k = 1...15) = [17...31]</math>.</p> <p>As a result, for the second group of 16 scrambling codes (16 through 31), the first scrambling code (code 16) is a primary scrambling code whereas codes 2 through 16 (codes 17 through 31) are secondary scrambling codes.</p> <p><u>Example No. 3:</u></p> <p>For <math>K=3</math>, <math>((K-1)*M+K+1) = ((3-1)*15+3+1) = (30+4) = 34</math> and <math>(K*M+K) = (3*15+3) = (45+3) = 48</math>. In Apple's 3G Products, the third primary scrambling code is <math>n=16*2 = 32</math>, while the third group of secondary scrambling codes consists of <math>16*2+k</math> (where <math>k = 1...15)</math></p>

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
	<p>= [33...47].</p> <p>As a result, for the third group of 16 scrambling codes, the first scrambling code (code 32) is a primary scrambling code whereas codes 2 through 16 (codes 33 through 47) are secondary scrambling codes.</p> <p><i>See</i> 3GPP TS 25.213 v5.0.0 at 21, §5.2.2 “Scrambling code” (“A total of <math>2^{18} - 1 = 262,143</math> scrambling codes, numbered 0 . . . 262,142 can be generated. However not all the scrambling codes are used. The scrambling codes are divided into 512 sets each of a primary scrambling code and 15 secondary scrambling codes. The primary scrambling codes consist of scrambling codes <math>n=16*i</math> where <math>i=0...511</math>. The <math>i</math>:th set of secondary scrambling codes consists of scrambling codes <math>16*i+k</math>, where <math>k=1...15</math>.”); <i>see also</i> 3GPP TS 25.213 v6.0.0 at 22.</p>
<p>27. The apparatus as claimed in claim 26, wherein K is a primary scrambling code number and <math>1 \cdot K \cdot 512</math>.</p>	<p>Apple’s 3G Products contain a primary scrambling code number, K, where <math>1 \cdot K \cdot 512</math>.</p> <p>For example, Apple’s 3G Products divide scrambling codes into 512 sets, each having one primary scrambling code and 15 secondary scrambling codes.</p> <p><i>See</i> 3GPP TS 25.213 v5.0.0 at 22, §5.2.2 “Scrambling code” (“A total of <math>2^{18} - 1 = 262,143</math> scrambling codes, numbered 0 . . . 262,142 can be generated. However not all the scrambling codes are used. The scrambling codes are divided into 512 sets each of a primary scrambling code and 15 secondary scrambling codes.”); <i>see also</i> 3GPP TS 25.213 v6.0.0 at 22.</p>
<p>30. The apparatus as claimed in claim 25, wherein the primary scrambling code and secondary scrambling code are I-channel components and the apparatus</p>	<p>Apple’s 3G Products contain a primary scrambling code and secondary scrambling code that are I-channel components and a means for delaying at least one of the primary scrambling codes and secondary code to produce Q-channel components.</p>

<b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b>	<b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b>
<p>further comprises a means for delaying at least one of the primary scrambling codes and secondary code to produce Q-channel components.</p>	<p>For example, Apple’s 3G Products transform the binary sequence generated by the n:th Gold code sequence <math>z_n</math> into a real valued sequence <math>Z_n(i)</math>, which in turn is used to generate a complex scrambling code sequence <math>S_{dl,n}</math> having a real component I and an imaginary component Q.</p> <p>See 3GPP TS 25.213 v5.0.0 at 22, §5.2.2 “Scrambling code” (“Figure 13” shows the transformation from <math>z_n</math> to real valued sequence <math>Z_n(i)</math>, and the definition of <math>S_{dl,n}</math>); <i>see also id.</i> at 23 (“Figure 14” shows the output signals I and Q); <i>see also</i> 3GPP TS 25.213 v6.0.0 at 23.</p> <p style="text-align: center;">Figure 13 – Excerpt from 3GPP Standard Describing Definition of <math>z_n</math> and <math>S_{dl,n}</math></p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p>The n:th Gold code sequence <math>z_n, n=0, 1, 2, \dots, 2^{18}-2</math>, is then defined as:</p> <ul style="list-style-type: none"> <li>- <math>z_n(i) = x((i+n) \text{ modulo } (2^{18} - 1)) + y(i) \text{ modulo } 2, i=0, \dots, 2^{18}-2.</math></li> </ul> <p>These binary sequences are converted to real valued sequences <math>Z_n</math> by the following transformation:</p> <math display="block">Z_n(i) = \begin{cases} +1 &amp; \text{if } z_n(i) = 0 \\ -1 &amp; \text{if } z_n(i) = 1 \end{cases} \text{ for } i = 0, 1, \dots, 2^{18} - 2.</math> <p>Finally, the n:th complex scrambling code sequence <math>S_{dl,n}</math> is defined as:</p> <ul style="list-style-type: none"> <li>- <math>S_{dl,n}(i) = Z_n(i) + j Z_n((i+131072) \text{ modulo } (2^{18}-1)), i=0, 1, \dots, 38399.</math></li> </ul> <p>Note that the pattern from phase 0 up to the phase of 38399 is repeated.</p> </div> <p style="text-align: center;">Figure 14 – Configuration of downlink scrambling code generator</p>

<p><b>ASSERTED CLAIM (PATENT L.R. 3-1(A))</b></p>	<p><b>ACCUSED INSTRUMENTALITY AND HOW EACH ELEMENT IS MET BY ACCUSED INSTRUMENTALITY (PATENT L.R. 3-1(B)-(D))</b></p>