

REPORT: Status of the LTE Ecosystem

January 20, 2012

This updated report, which was researched and published by GSA (Global mobile Suppliers Association), lists 269 LTE devices launched in the market by 57 suppliers, and confirms how a robust user device ecosystem has been established in support of LTE as the fastest developing mobile communications system technology ever

GSA (Global mobile Suppliers Association)
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269 LTE User Devices Launched by 57 Manufacturers

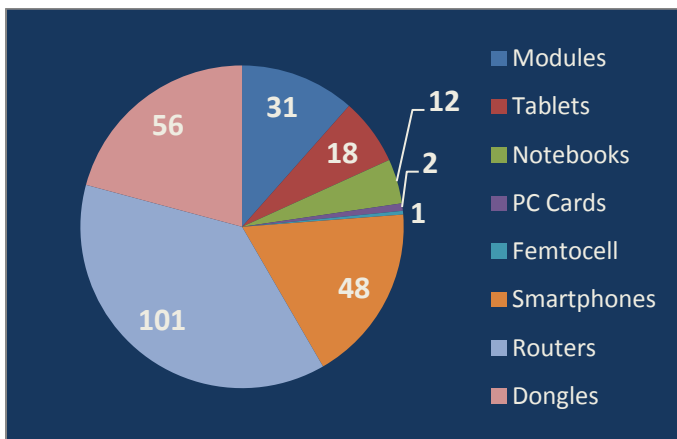
GSA surveys worldwide mobile broadband market developments and trends, and publishes a regularly updated report "Evolution to LTE" detailing operator commitments to LTE, network deployments, launches, trials, regulatory and market developments. In the latest report (January 5, 2012) GSA confirmed that 285 operators are investing in LTE. This figure comprises 226 LTE firm network build commitments and 59 additional on-going pre-commitment trials. 49 commercial LTE systems were launched by that date. There were 3.6 million LTE subscriptions by Q3 2011. GSA forecasts 119 networks will be in commercial service by end 2012.

The eco-system of LTE-capable user devices has rapidly established to meet current and anticipated needs of operators and customers.

GSA confirms 269 LTE User Device product announcements by 57 manufacturers, including frequency and operator-specific variants.

The number of LTE devices - 269 - announced in this report is 36% higher than the figure GSA reported on October 28, 2011. More than 200 new LTE user devices were launched in the past year (GSA reported 63 devices in its first "Status of the LTE Ecosystem" report on February 9, 2011).

LTE user devices address all market segments:



269 LTE User Devices by form factors

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There are 48 LTE smartphones, which is 6 times the number launched 6 months ago. The number of LTE-enabled tablets more than doubled in that time.

Detailed analysis of each of the 269 LTE devices is supported in the **GAMBoD - LTE tool** (www.gsacom.com/gambod). Access is restricted to logged-in registered site users from GSA member companies and network operators who supplied their corporate email address as their User ID.

Operating frequencies

LTE networks are deployed globally in many bands. GSA's analysis of how the main LTE bands are supported by the devices ecosystem is as follows:

LTE FDD	
700 MHz	142 devices
800 MHz	52 devices
1800 MHz	50 devices
2600 MHz	65 devices
800/1800/2600 MHz	43 devices
AWS	51 devices

LTE TDD	
2300 MHz Band 40	36 devices
2600 MHz Band 38	36 devices
2600 MHz Band 41	5 devices

Note 1: manufacturers have not yet declared operating frequencies or fallback modes for some products

Note 2: 3GPP defines a number of bands in 700 MHz:
 Band 12: (Lower 700 MHz) 699 MHz-716 MHz /729 MHz-746 MHz
 Band 13: (Upper C 700 MHz) 777 MHz-787 MHz /746 MHz-756 MHz
 Band 14: (Upper D 700 MHz) 788 MHz-798 MHz /758 MHz-768 MHz
 Band 17: (Lower B, C 700 MHz) 704 MHz-716 MHz /734 MHz-746 MHz
 APAC Digital Dividend (APAC700): 698 - 806 MHz

An LTE device confirmed by GSA as operating in "700 MHz" may operate in only one of these bands, and in some cases will operate in more than one of these bands

Note 3: 44 LTE TDD devices are confirmed

Interworking/fallback

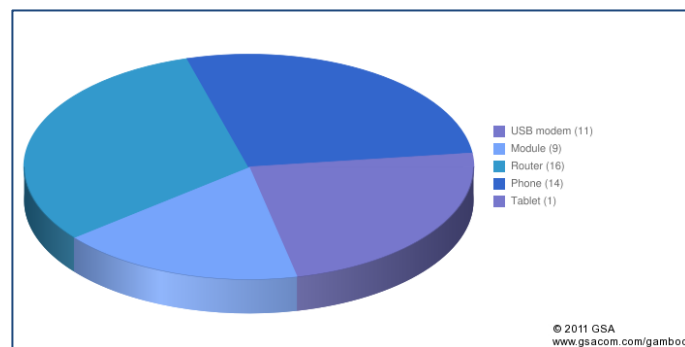
- 159 LTE devices operate on either HSPA, HSPA+ or 42 Mbps DC-HSPA+ networks
- 54 LTE devices support 42 Mbps DC-HSPA+
- 87 LTE devices operate on EV-DO networks

LTE1800

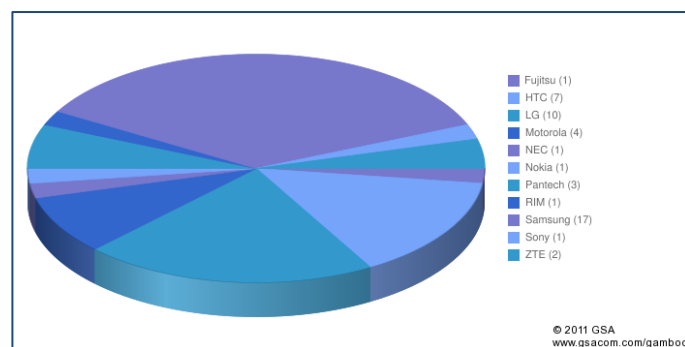
LTE network deployment in 1800 MHz spectrum (3GPP Band 3) is a crucial strategy option for many operators. Commercial LTE services using 1800 MHz have been launched in Europe, Middle East, and APAC. Re-farming of 1800 MHz spectrum, originally used for GSM, is increasingly being favored, especially where new spectrum in 2.6 GHz or digital dividend (799, 800 MHz) bands has not yet been allocated. A report by GSA "Embracing the 1800MHz opportunity: Driving mobile forward with LTE in the 1800MHz band" (free download at www.gsacom.com) demonstrates the strong appeal of using 1800 MHz spectrum for mobile broadband, showing from practical, economic and business perspectives why 1800 MHz will emerge as a prime band for LTE deployments in virtually all regions of the world, and will also be important for international

roaming. There is an excellent choice of LTE1800 devices in the market today. 50 LTE1800 devices have been announced. The number of LTE1800 devices has tripled over the past 6 months.

Sample charts generated by GAMBoD:



51 LTE devices in AWS band - by form factor
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48 LTE smartphones – models per vendor
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Reminder: to be authorized to use GAMBoD you must be an employee of a GSA member company or an employee of a network operator and have registered on the GSA website with your corporate email address.

GSA (Global mobile Suppliers Association) represents GSM/EDGE/WCDMA-HSPA/HSPA+ and LTE suppliers. GSA brings together a global industry community of telecoms professionals through the website and practical activities. The GSA website www.gsacom.com has over 45,000 registered users for knowledge gathering and information sharing of key facts, trends and analysis. Register for free downloads of reports, information papers, maps, charts, etc. www.gsacom.com/php/register_form.php4

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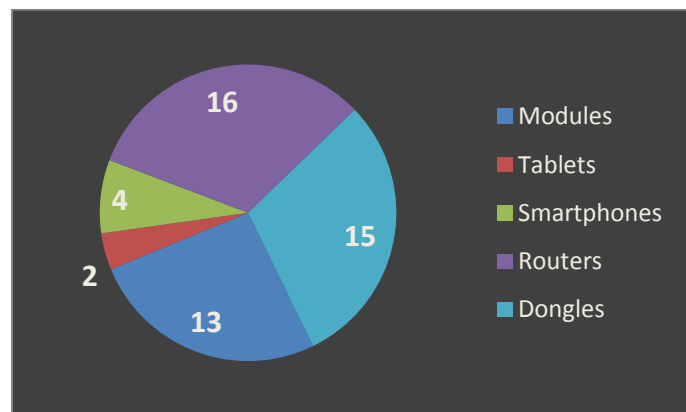
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NOTES:

1. Errors & Omissions Excepted
2. User devices are not available in all markets
3. Broad announcements relating e.g. to future product collaborations or launches are not included

Send updates please to info@gsacom.com



50 LTE1800 User Devices by form factor
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GAMBoD is the **GSA Analyzer for Mobile Broadband Devices**, a unique search and analysis tool developed by GSA for mobile broadband devices, allowing searches by supplier, form factor, features, peak downlink and uplink speeds, and operating frequency. Results are presented as a list, or as a spreadsheet, or in charts. An RSS feed can be subscribed to for alerts as new devices of interest are added to the database. Charts may be inserted into documents or presentations, subject to accreditation of GSA as the source.

GAMBoD is available only to qualified site users, which GSA has defined as employees of GSA member companies who have registered using their corporate email address, or representatives of network operators who have registered using their corporate email address.

Two databases are available for personalized analysis – one is for HSPA, HSPA+ and DC-HSPA+ user devices. The second database references all the LTE devices confirmed for this report; this is called GAMBoD-LTE. Both databases, especially for LTE, are very popular and heavily visited and used.

Both GAMBoD databases are located at www.gsacom.com/gambod