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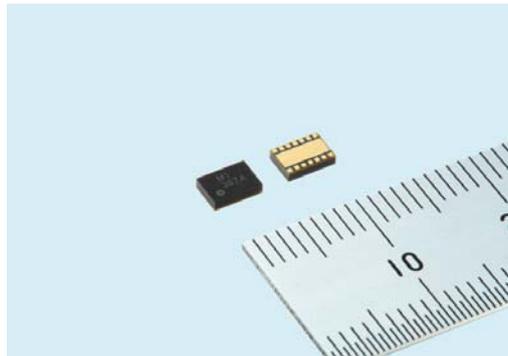
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## **Mitsubishi Electric to Launch Four-band Power Amplifier for W-CDMA and LTE Smartphones & Tablets**

*Downsizes transmitters for high-frequency front-end circuitry in global-standard smartphones, tablets*

**TOKYO, November 25, 2013** – [Mitsubishi Electric Corporation](http://www.MitsubishiElectric.com) (TOKYO: 6503) announced today to launch a new multi-band power amplifier for mobile phones and tablets, the BA012M1, which is compatible with four wireless frequency bands used commonly in Asia including Japan, the United States, Europe and other countries. Compatible with both W-CDMA and LTE network systems, the BA012M1 is a downsized power amplifier that will enable smaller-sized mobile devices. The initial production volume is three million units per month, with shipments starting on November 30. The BA012M1 will be exhibited at 2013 Microwave Workshops & Exhibition (MWE 2013) in PACIFICO YOKOHAMA exhibition complex, in Yokohama, Japan from November 27 to 29.



BA012M1

Various frequency bands have been introduced around the world to handle the growing volume of data traffic due to increased use of smartphones and tablets. Operation in various multiple countries requires a mobile device's transmitter to be integrated with multiple amplifiers to ensure compatibility with multiple frequencies. This is why the size of transmitters has become a key issue in mobile phone development.

## **Product Features**

### **1) *Four-frequency power amplifier helps reduce size of global-standard mobile devices***

- Power amplifier is compatible with 2.0GHz, 1.9GHz, 0.8GHz and 0.9GHz bands used in Asia including Japan, the United States, Europe and other countries
- Small leadless package, measuring just 3.0mm x 4.2mm x 1.0mm, helps reduce transmitter size

### **2) *High efficiency for reduced power consumption***

- Separate power modes for high and low output power
- Industry-leading power added efficiency (PAE) rating of 46% at maximum output power

### **3) *Integrated peripheral functions reduce number of peripheral parts***

- Gallium arsenide (GaAs) bipolar field effect transistors (BiFET) for easier integration
- Integrated reference voltage generator and standby wake-up mode using digital signal
- Directional coupler simplifies output-power monitoring

## **Other Features**

	Frequency [MHz]	High Power Mode			Low Power Mode	
		Output power [dBm]	Gain [dB]	Efficiency [%]	Output power [dBm]	Gain [dB]
Band 1	1920–1980	28.5	28.5	47	17	20
Band 2	1850–1910	28.5	28.5	47	17	20
Band 5	824–849	28.5	28.5	46	17	20
Band 8	880–915	28.5	28.5	46	17	20
Operating voltages	Vcc1* <sup>1</sup> [V]	3.4			3.4	
	Vcc2* <sup>1</sup> [V]	3.4			1.2	
	Venable* <sup>2</sup> [V]	1.8			1.8	
	Vmode* <sup>3</sup> [V]	0.0			1.8	

\*1 Supply voltage

\*2 Control voltage for enable mode

\*3 Control voltage for power mode

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## **About Mitsubishi Electric Corporation**

With over 90 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Embracing the spirit of its corporate statement, Changes for the Better, and its environmental statement, Eco Changes, Mitsubishi Electric endeavors to be a global, leading green company, enriching society with technology. The company recorded consolidated group sales of 3,567.1 billion yen (US\$ 37.9 billion\*) in the fiscal year ended March 31, 2013. For more information visit <http://www.MitsubishiElectric.com>

\*At an exchange rate of 94 yen to the US dollar, the rate given by the Tokyo Foreign Exchange Market on March 31, 2013