

CXA3361AGG

W-CDMA service, which is already available in Japan, is rapidly becoming available in other markets worldwide. Due to this development there are now increasing demands for transceivers that can support the frequency bands used in the different countries adopting this system.

Although Sony has, up to now, developed single-band, dual-band, and triple-band ICs for the Japanese domestic market, Sony has now deployed this technology in developing a new triple-band IC that supports all the frequency bands used worldwide.

This new IC, the CXA3361AGG, can support all the W-CDMA/UMTS carrier frequencies used around the world.

- Direct conversion architecture
- Built-in matching circuits
- Integrated high-speed/low-noise synthesizer
- Supports the frequency bands used in all countries

The CXA3361AGG is a single-chip transceiver IC for the W-CDMA/UMTS cellular phone system. It also supports HSDPA* (category 6).

*HSDPA (high-speed downlink packet access):
A mobile communication method that speeds up the W-CDMA downlink.

■ Direct Conversion Architecture

The CXA3361AGG achieves a significant reduction in external components compared to the conventional superheterodyne technique by adopting a direct conversion architecture.

■ Built-in Matching Circuits

The CXA3361AGG achieves a significant reduction in external components by integrating the matching circuits (TXPA driver output and RX mixer input) required for the high-frequency signal lines on the same chip.

Furthermore, by adopting a miniature package (a 6 mm square, 1 mm thick, 97-pin VFPGA package), the CXA3361AGG can reduce the circuit board area required for this functionality including the external components by one third to one half.

■ Integrated High-Speed/Low-Noise Synthesizer

The CXA3361AGG also integrates the VCO and PLL circuits required for local signal generation.

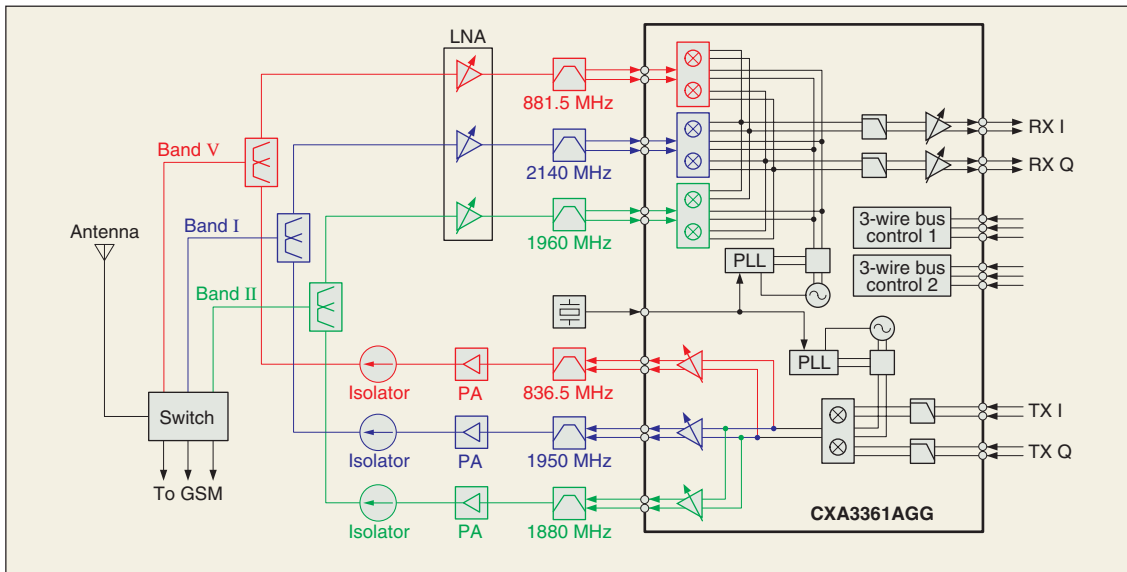
■ Supports the Frequency Bands used in All Countries

The CXA3361AGG supports bands I, II, III, IV, V, VI, VIII, and IX. By selecting three of these bands, the CXA3361AGG can be used in any country in Europe, North America, Asia, or Japan. This device also supports HSDPA (category 6). Since the basic structure has been unified with the ICs that predate the CXA3361AGG (the single-band and dual-band ICs), the customer can select an IC that most closely matches the needs of each of the customer's products.

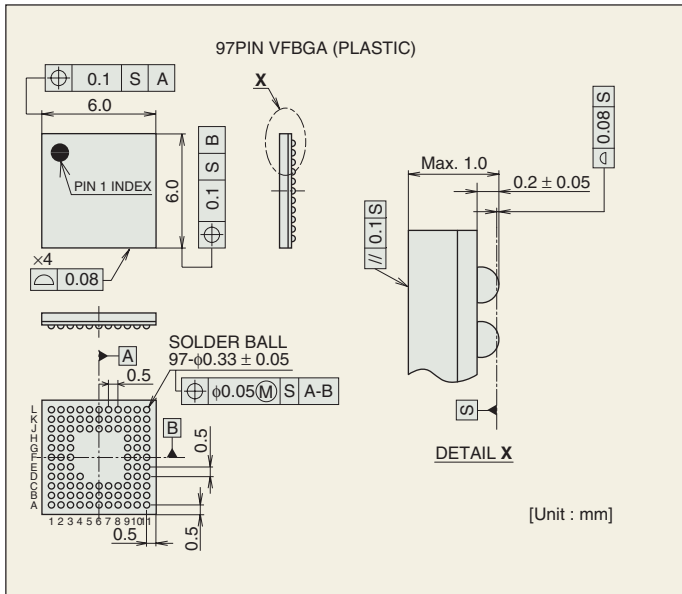
Furthermore, since the CXA3361AGG adopts a standard 3-wire bus control interface, it can be connected to a wide range of digital baseband ICs.

V O I C E

When we started development of this W-CDMA transceiver IC, we adopted a TX/RX two-chip structure that would support a single band (band 1). It was only later that, to respond to changing market needs, we considered adopting a single-chip structure and multi-band support. This was because W-CDMA was also adopted in the US and Europe and HSDPA services were inaugurated. That the specifications kept changing made this a difficult project. But the result is that the CXA3361AGG is an IC that supports all the standards that are in place worldwide.



■ Figure 1 System Structure Example (for the US band)



■ Figure 2 Package Dimensions

■ Table 1 W-CDMA/UMTS Transceiver IC Lineup

- CXA3359ER Global single band
- CXA3358ER Japan dual band
- CXA3360GG Japan triple band
- CXA3361GG US triple band
- CXA3361AGG Global phone

Band	TX	RX	UMTS	W-CDMA (Japan)		US	Global
			CXA3359ER	CXA3358ER	CXA3360GG	CXA3361GG	CXA3361AGG
I	1920 to 1980 MHz	2110 to 2170 MHz	✓	✓	✓	✓	✓
II	1850 to 1910 MHz	1930 to 1990 MHz	—	—	—	✓	✓
III	1710 to 1785 MHz	1805 to 1880 MHz	—	—	—	—	✓
IV	1710 to 1755 MHz	2110 to 2155 MHz	—	—	—	—	✓
V	824 to 849 MHz	869 to 894 MHz	—	—	—	✓	✓
VI	830 to 840 MHz	875 to 885 MHz	—	✓	✓	✓	✓
VII	2500 to 2570 MHz	2620 to 2690 MHz	—	—	—	—	—
VIII	880 to 915 MHz	925 to 960 MHz	—	—	—	—	✓
IX	1750 to 1785 MHz	1845 to 1880 MHz	—	—	✓	—	✓