



IKONVERGENZ TV Solutions Offer Smooth Transition to Digital



Torsten Frings
Managing Director
IKONVERGENZ Pte Ltd.

Torsten Frings serves as the Managing Director of IKONVERGENZ, a wholly owned subsidiary of Micronas Semiconductor Holding AG. IKONVERGENZ specializes in providing field-tested and certified production-ready digital and analog TV solutions. Frings has more than 10 years experience in the research and development (R&D) of analog and digital TV. He was formerly the General Manager for Panasonic - European TV Design Centre. He has also presented at DVB groups for Common Interface and IEEE 1394 (Home Networks) and has provided consultation to companies on LCD and digital TV development.

Frings was instrumental in the development of the first and second generations of iDTVs for Britain and continental Europe, which were mass-produced from 1999. He represented Panasonic UK in the Digital Terrestrial Group (DTG) and was actively involved from 1998 to 2000 in specifying the digital terrestrial broadcast and receiver specifications, D-Book.

www.ikonvergenz.com

The TV industry has evolved with advances in technology. Through the years, the industry has witnessed the transformation of TV technology from bulky CRTs to slim flat panel LCDs, and from a purely analog (PAL, NTSC, SECAM) medium to a digital (DVB-T, ATSC, ISDB-T) platform.

Accordingly, the terrestrial TV market is changing across the globe with many countries having clear mandates for digital terrestrial TV services and moving towards analog switch-off. Thus, TV manufacturers inevitably will have to provide integrated digital TVs (iDTVs).

While digital transmission ultimately will be the norm, TV vendors face a struggle for the next few years. Success will hinge on quickly grasping the complexities of DTV.

Digital Fit

IKONVERGENZ Pte., Ltd. is a dedicated TV R&D center providing digital (DVB-T and ATSC) and analog solutions (PAL, NTSC, SECAM) to TV manufacturers for immediate mass production. Fully tested, its iDTV solutions comply with Digital TV Group (DTG) and NorDig basic TV profile standards. The company has also received the Digital Switchover Certification Mark under the Digital Switchover Program for iDTV solutions.

Among its offerings is the Kentaurus iDTV (DVB-T) solution. It adopts a common interface, permits off air download, and features a seven-day electronic program guide (EPG). It also handles banner bar, user profile, timer recording, new service alerts, preferred language, and DVB subtitles, plus DVB Teletext and parental



iKonvergenz aims to cut time-to-market and bill-of-materials costs with its solutions.



Chassis board from iKonvergenz



iKonvergenz offers various integrated solutions for DTV.

control for continental Europe. Options like MHEG-5 are available for immediate integration to customers addressing the digital market in Britain. Also available is the fully field-tested Kentaurus iDTV (ATSC), which complies with the digital market requirements. This production-ready, HD-ready solution conforms to EIA 608, EIA 708 and EIA 768 and to ATSC A53. It features V-Chip, closed captions, VSB and QAM, and a graphical user interface that users can tailor.

Also for Analog

With the Kentaurus Global LCD TV patented solution, manufacturers can use the same main chassis (PCBA) to drive 20- to 42-inch WXGA LCD and plasma display panels for PAL, NTSC and SECAM. The Global LCD TV is compatible with all top panel brands. This allows significant savings in manufacturing and logistics, and provides the flexibility to use the same TV chassis to address the global analog TV market. □



MEMS Spells Tiny, Sophisticated Sensors

Murata Taps Three-Terminal Capacitor

5th Anniversary

IAFA Delves Into Digital Entertainment



Graphtec Pursues Overseas Expansion With New Strategy

JUNE 2006

Join us June 7
at Taipei WTC!
www.iafa.com.tw



Micronas, IKONVERGENZ Leverage Skills, Deliver iDTV Solutions

To support its customer, Micronas, together with its subsidiary IKONVERGENZ, leverage its expertise to deliver practical solutions for manufacturing complex iDTV systems with emphasis on cost, quality and faster time-to-market.

TVs have evolved in many aspects over the recent years. This evolution is evident on TV's physical characteristics and technologies, as well as on the rising integration of other technologies to improve the usual TV functions.

Physically, TVs' form was changed from the traditional box design to thinner shape with flat-panel screen. This transformation, which can be seen on the present LCD and PDP TVs, renders TVs to become fashionable part of decorative furniture items displayed to guests by home owners, apart from being a medium for information and entertainment.

As for TV-related technologies, several important changes can be observed. The traditional CRT technology subsides quickly with the rise of plasma and LCD technologies. In addition, computer monitor functions are being merged with, and are available on flat-panel TVs. Meanwhile, TVs moved from purely analog medium, which includes PAL, NTSC, and SECAM to digital platforms such as DVB-T ATSC and ISDB-T in order to obtain better picture quality and clearer sound.

The Digital Shift

Various nations across the globe are

on the transitional period of digital terrestrial TV broadcast transformation, which will certainly replace analog signals as the broadcasting standard of the future. The most compelling basis for this switch is the probability to broadcast more content inside the available bandwidth and/or better picture quality with higher resolution. For every frequency converted from analog to digital broadcast, there can be four to five digital standard definition (SD) services with maximum resolution of 720 x 576 for PAL. Alternatively, each analog bandwidth can be converted to one digital high-definition (HD) bandwidth with maximum resolution of 1,920 x 1,080. Thus, the digital transmission is inevitable. However, this could be done with compromise to either more bandwidth or better picture quality.

Rising Business Complexity

Considering the evolution of TV technology and future digital TV broadcasting, many companies once successful in their own markets will face new challenges and competition. Companies once



Wladimir Punt, Director System Marketing, Micronas



Donald Tan, Director, Sales and Marketing, IKONVERGENZ

segmented by the computer and TV markets are today competing for the same set of products and to some extent, the same customers. Manufacturers are swamped with choices of solutions and suppliers, and with new product development cycle lasting only several months, a wrong decision by research and development (R&D) could prove costly if TV maker does not have the means to recover. For example, TVs gradually become slimmer in form and increasing in size with more attention to picture quality, like increased refresh rates (120p), higher display resolution (full-HD or 1080p) and high-definition (HD) motion compensation (movie de-judder). With new demands for TVs, several players have already departed from the business.

Manufacturers struggle during this

early development stage with the fragmented and new regional requirements all over the world. Analog TV in itself is complex with different video- (PAL, SECAM, NTSC) and audio- (A2, NICAM, BTSC) systems varying from one country to another. This complexity multiplied manifolds when integrated-digital TV (iDTV) is added into the equation. This is due to the different variation of requirements needed for analog and digital transmission, often leading to stretched resources and high development, logistic and inventory costs to cater the respective markets. For instance, TVs for Taiwan will require NTSC/BTSC + DVB-T while TVs for Germany require minimal PAL B, G/A2 + DVB-T. Furthermore, TVs for the United States require NTSC / BTSC + ATSC while in France, SECAM-L/NICAM + DVB-T. Even for the digital broadcast, when two countries use the similar standard, variations still occur. A British DVB-T receiver requires for instance additional data services (MHEG-5) compared to a German one. In addition, countries vary in terms of requirements for common interface (CI), supporting pay-TV services or very high radio frequency (RF) performance, due to the country's broadcast network infrastructure. TV manufacturers catering to all these countries are facing fragmented market requirements and must have a large and experienced development team, manufacturing and logistic facilities to accommodate all the differing markets.

With several hundred million TV households worldwide having the potential to replace their living room TV sets with the latest iDTV, the business in itself is very attractive to many TV manufacturers, and too large to be ignored for serious TV

makers. Many new entrants to the TV business will compete with existing manufacturers for the "same piece of the pie". In the long-run, TV makers without clear understanding of the TV markets and the right partners will become casualties in this highly complex business. Only companies with the ability to adapt and provide products and solutions for the fast developing TV technology will survive.

Need for Practical Solutions

Micronas, a semiconductor designer and manufacturer as well as supplier of cutting-edge IC and sensor system solutions for consumer and automotive electronics, is up for the challenge to take further steps for its customers. As innovative global TV system solutions provider, Micronas leverages its expertise into emerging digital audio and video content markets. While it is common for silicon vendors to offer manufacturers reference designs or evaluation platforms, many of these references still require a lot work for TV makers to bring them into production. Thus, to support its customers, Micronas established a wholly-owned subsidiary IKONVERGENZ in 2003 to offer production-ready solutions for OEMs and ODMs to license.

Reliable, Viable Solutions

Separate from Micronas' IC design unit, the IKONVERGENZ team has experience and knowledge in instrumental development of iDTV for DVB-T and ATSC markets as well as involvement in detailing D-Book or digital terrestrial broadcast and receiver specifications, and development of patented global digital and analog TV solutions. The solutions that IKONVERGENZ bring to TV makers are flexible and field-tested allowing the latter to address the

complicated digital and analog TV markets worldwide cost effectively within a few months.

In order for TV makers to meet their respective market needs, Micronas provides reference designs using their own resources for TV development, while IKONVERGENZ offers production-ready solutions to manufacturers who need to realize faster time-to-market. With IKONVERGENZ' solutions, TV manufacturers with no time, resources and experience can obtain flexibility as well as implement cost-saving measures without compromising picture quality.

Boundless Challenge

The continuous challenge for TV manufacturers is to deliver latest TV models at the most attractive price while maintaining a certain level of quality standard. Any TV manufacturer struggling with resource issues need to explore options to maintain its competitiveness and ensure its survival in the future.

About this Article:

The authors are Wladimir Punt, who is Director of System Marketing at Micronas, and Donald Tan, who is Director of Sales and Marketing at IKONVERGENZ.