Transmission of 24-Bit Full-Color Images over a Single Pair of Differential Signals
Gigabit Video Interface

CXB1454R, CXB1455R, CXB1456R

Sony's gigabit video interface (GVIF) can transmit personal computer image data to an LCD monitor with the data in its original digital format without conversion and without degradation.
This technology can transmit 24-bit full-color images over a single pair of differential signals, and with cable lengths of up to 10 meters. Sony's GVIF technology supports increasing resolutions and diverse applications in LCD monitors for the digital age.

- **Can be used with extremely thin cables with a single pair of differential signals**
- **Support 24-bit full-color images**
- **Supports VGA, SVGA, and XGA display modes, and can support SXGA and UXGA display modes with two pairs**
- **Single +3.3-V power supply, low power consumption**
- **LQFP package**
- **Data inputs and outputs are TTL and CMOS compatible**

The CXB1454R, CXB1455R, and CXB1456R form a chip set for serial transmission of 24-bit full-color VGA, SVGA, or XGA digital image data. Figure 1 shows the block diagrams of the CXB1454R, CXB1455R, and CXB1456R. The CXB1455R is a transmission IC that includes encoder, parallel-to-serial converter, and cable driver circuits on chip, and the CXB1454R and CXB1456R are receiver ICs that include serial-to-parallel converter and decoder circuits. They can be used depends on the needs of the application.

V O I C E

With the advent of digital telephones and digital TV, there is now a trend towards digital communication in many signal transmission areas. However, the connection between the personal computer, which is of course ultimately digital, and the LCD monitor, is still analog in most cases. The Sony GVIF transmits high-precision image data as the digital signals that are most appropriate for LCD monitors. Won't you try Sony's compact yet reliable GVIF technology?

Transmission Features

This chip set transmits 24 bits of video display data, 2 bits of synchronizing signal (H/V), and 2 bits of display control signal data over a single pair of low-amplitude differential signals. This chip set is appropriate for shielded twisted pair (STP) cable with a characteristic impedance of 100 ohms. Since the digital data transmitted is encoded, DC balance is maintained and stable transmission is provided.

Easy to Use in Notebook Personal Computers (CXB1455R and CXB1456R)

The CXB1455R and CXB1456R form a low power chip set. The CXB1455R transmission IC draws 200 mW (typical) and the CXB1456R reception IC draws 270 mW (typical). They are provided in 48-pin LQFP and 64-pin LQFP packages respectively, and either a 1-mm diameter shielded twisted pair cable or a flexible card can be used. Thus they support compact mounting and can be easily used in notebook personal computers. (See figure 2.)

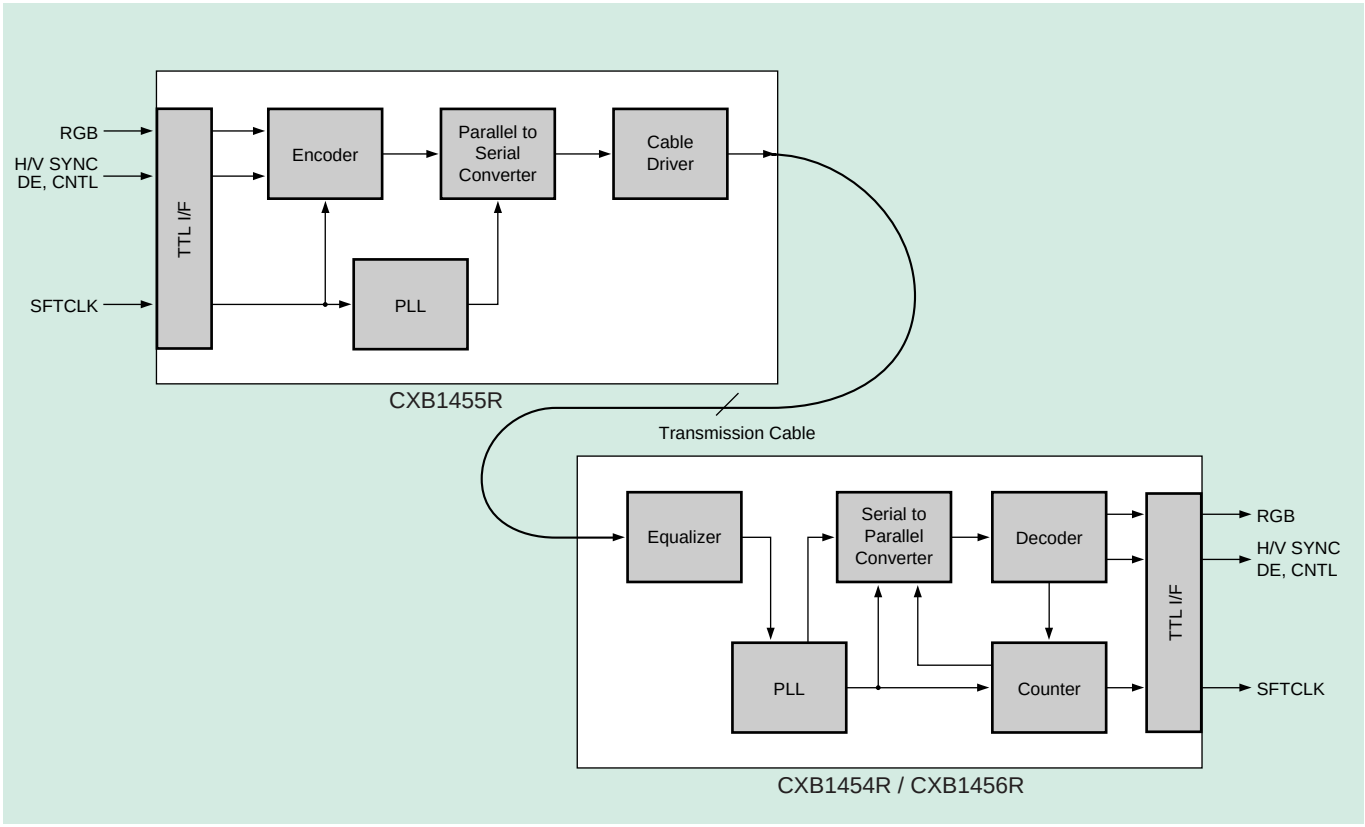
UXGA Support Using Two Pairs (CXB1455R and CXB1454R)

UXGA display mode can be supported by using two CXB1455R and two CXB1454R ICs. (See figure 3.) Since the CXB1455R includes a low-amplitude differential signal cable driver and the CXB1454R includes a self-adaptive cable equalizer, these chips can form an inexpensive yet high quality transmission system for LCD monitors and other flat panel displays. Furthermore, since the cable equalizer automatically compensates for the attenuation of the cable in accordance with the length of the cable, any cable length up to 10 meters can be used.

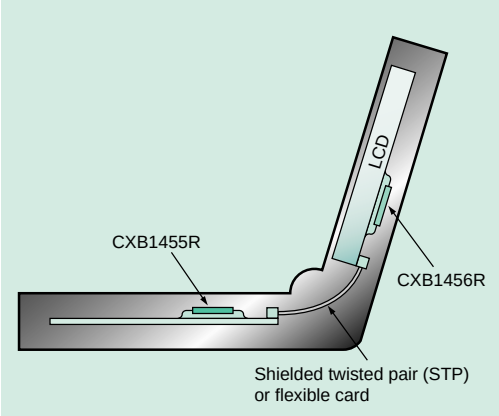
Easy Interface to LCD Modules and Peripheral Circuits

These chips provide TTL and CMOS compatible digital data inputs and outputs. Furthermore, they use a single +3.3-V power-supply voltage and

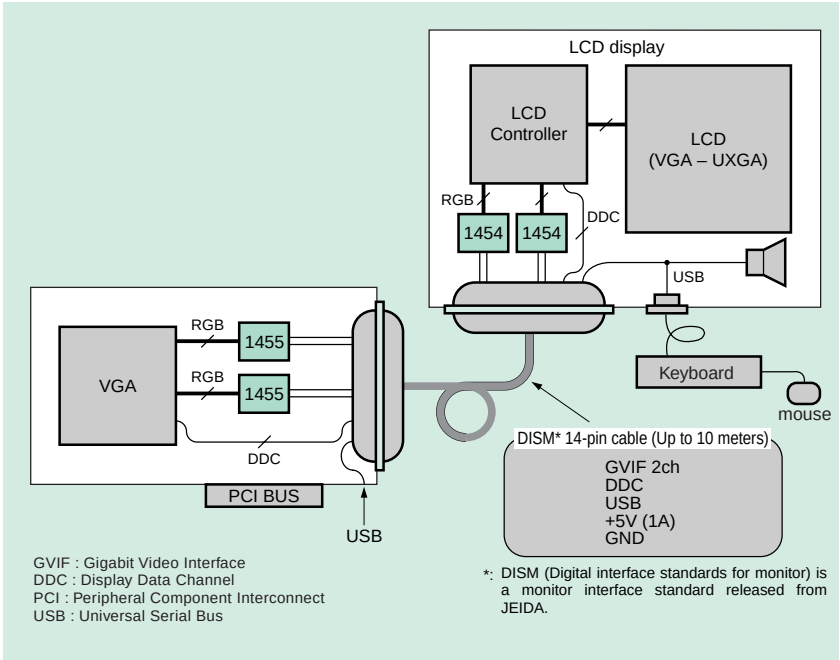
New Products



■ **Figure 1 CXB1454R, CXB1455R, and CXB1456R Block Diagram**



■ **Figure 2 Sample CXB1455R and CXB1456R Application (Notebook personal computer)**



■ **Figure 3 Sample CXB1455R and CXB1454R Application**