

IT6506

DisplayPort 1.1a Receiver

ITE TECH. INC.

General Description

The IT6506 is a high-performance DisplayPort 1.1a receiver, fully compliant with DisplayPort **1.1a**, HDCP 1.3 specifications. The IT6506 with its Deep Color capability (up to 36-bit) ensures robust reception of high-quality uncompressed video content, along with state-of-the-art uncompressed and compressed digital audio content.

Aside from the various video output formats supported, the IT6506 also receives and provides up to 8 channels of I²S digital audio outputs, with sampling rate up to 192kHz and sample size up to 24 bits, facilitating direct connection to industry-standard low-cost audio DACs. Also, an S/PDIF output is provided to support up to compressed audio of 192kHz frame rate.

Each IT6506 comes preprogrammed with an unique HDCP key, in compliance with the HDCP 1.3 standard so as to provide secure transmission of high-definition content. Users of the IT6506 need not purchase any HDCP keys or ROMs.

Features

- Compliance with DisplayPort Specification **V1.1a** at **1.62/2.7 Gbps** data rate (Low bit rate/High bit rate)
- Support flexible **1/2/4** lanes configurations; Full **10.8Gbps** data rate support(4 lanes at 2.7Gbps)
- Support DPCD **Rev.1.1**
- Support HDCP **1.3** with HDCP key embedded
- Support Spread Spectrum Clocking up to **0.5%** down-spread to reduce EMI
- Support Source Connection Detection through AUX channel DC levels
- Support up to **WQXGA(2560X1600 RB60)** VESA display format
- Support Digital Video Output in 18/24/30/36(deep color) bits format with separate Sync control
- Support Pixel component format with RGB; YCbCr 422; YCbCr 444
- Support Bit depth per color with 6/8/10/12 bits
- Bi-direction Color Space Conversion (CSC) between RGB and YCbCr color spaces with programmable coefficients.

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- Up/down sampling between YCbCr 4:4:4 and YCbCr 4:2:2
- Dithering for conversion from 12-bit component to 10-bit/8-bit
- S/PDIF interface supporting PCM, Dolby Digital, DTS digital audio up to 192kHz frame rate
- Support 8-channel, uncompressed LPCM I2S audio with sample rates of 32~192 kHz and sample sizes of 16~24 bits
- Automatic Audio Error detection with soft mute function, preventing annoying harsh output sound due to audio error or hot-unplug
- Automatic loss of signal detection for Link management
- Intelligent, programmable power management
- 144-pin LQFP (20mm x 20mm) package
- RoHS Compliant (100% Green available)

Ordering Information

Model	Temperature Range	Package Type	Green/Pb free Option
IT6506E	0~70	144-pin LQFP	Green

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Pin Diagram

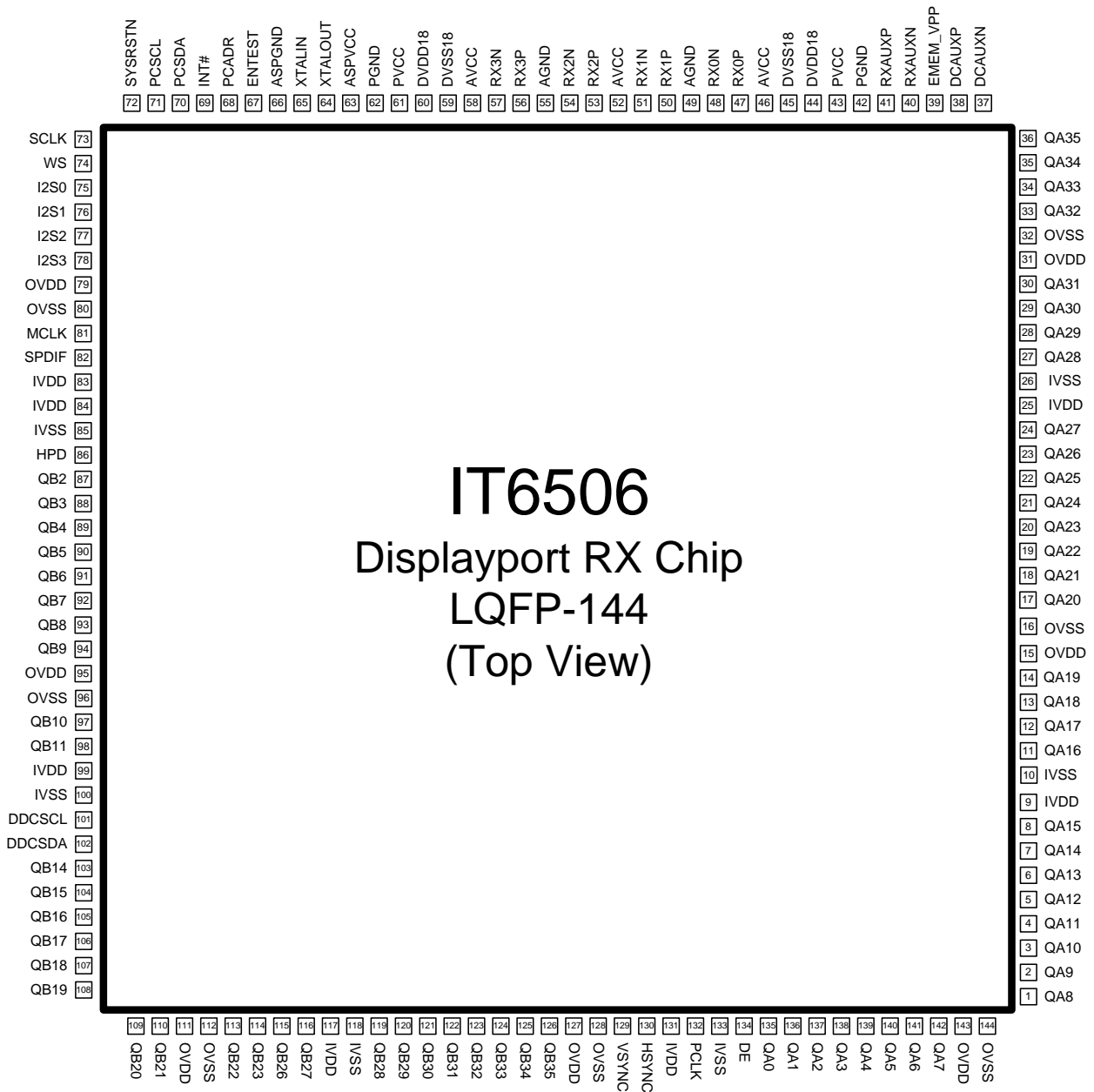


Figure 1. IT6506 pin diagram