Marvell 88DE8020/25 Hybrid Demodulators

Supports DVB-C/DVB-T/Analog-TV Standards

▶ PRODUCT OVERVIEW

The Marvell® 88DE8020 and 88DE8025 hybrid demodulators with integrated ClearRF™ technology enable robust TV reception under complex signal impairment conditions in terrestrial and cable networks. The demodulators are compatible with typical low/high IF tuners and TV decoders. The 88DE8020 supports DVB-C/DVB-T/NTSC/PAL/SECAM demodulation, while the 88DE8025 supports DVB-T/NTSC/PAL/SECAM demodulation. Both devices can demodulate 2K and 8K COFDM modulated signals based on the ETSI specification (ETSI EN 300 744) and QAM modulated signals based on the DVB-C specification (ETSI EN 300 429). They can also be programmed to demodulate analog NTSC/PAL/SECAM TV inputs and output CVBS and Sound IF signals.
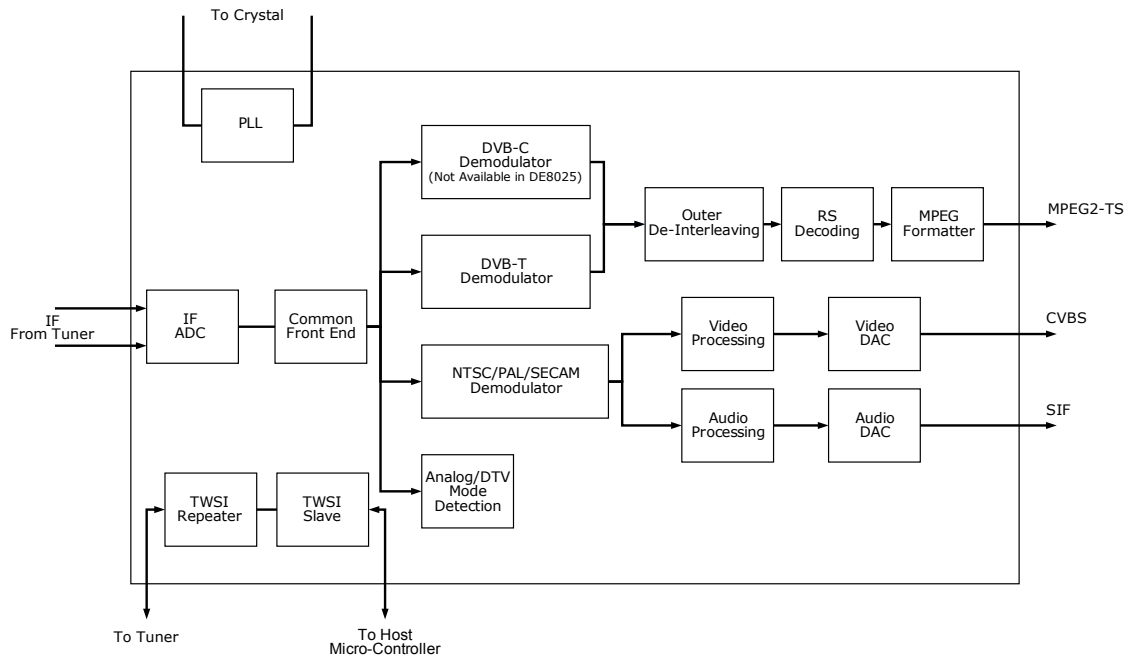
▶ BLOCK DIAGRAM

Fig 1. Block Diagram of Marvell 88DE8020 and 88DE8025 Hybrid Demodulators

▶ KEY FEATURES AND BENEFITS

FEATURES	BENEFITS
• Low profile single chip hybrid demodulator with option to use clock from tuner source	• Enables slim TV chassis with lower bill of materials. No need for multiple chips, SAW filters, crystals and passives
• Pin-compatible with Marvell demodulators supporting other standards	• Enables TV makers to develop single worldwide multiformat decoder chassis with plug-and-play RF front-end
• ClearRF technology provides robust performance exceeding standard DVB-T requirements	• Good reception in challenging field conditions including: - Adjacent/co-channel interference from changing troposphere conditions - Dynamic echoes in Single Frequency Network (SFN) countries like Germany/Spain - Local noise from household appliances, light switches and ignition systems
• ClearRF technology provides excellent C/N performance in challenging DVB-C 256QAM networks	• Robust cable reception in DVB-C networks carrying High Definition (HD) signals
• ClearRF technology provides good picture quality even for standard analog signals	• Sharp picture and tolerance to over-modulated signals
• Hybrid blind scan for simultaneous detection of analog and digital signals from terrestrial and cable networks	• Quick out-of-box TV setup for seamless analog, digital channel reception

APPLICATIONS

The hybrid demodulator when combined with a hybrid CAN tuner or silicon tuner can be used as a standalone front-end board in a variety of applications including:

• Digital Televisions (DTV)

• Digital set-top boxes, video recorders

• Network interface modules

• PC Tuner cards and sticks

To shorten system manufacturers' design cycles and accelerate time-to-market, Marvell provides complete DTV front-end development platforms and reference designs with device drivers, schematics, layout files and other documentation, including detailed Nordig, D-Book and E-Book test results.

RF AGC
IF AGC
NB
IF+/-
RF IN
TD1318 Hybrid Tuner
(DVB/PAL/SECAM)
Tuner Power Supply
+3.3V, +1.2V
Tuner Clock (4MHz)
SCLT, SDAT
MARVELL
DVB-T/DVB-C &
Analog Demodulator
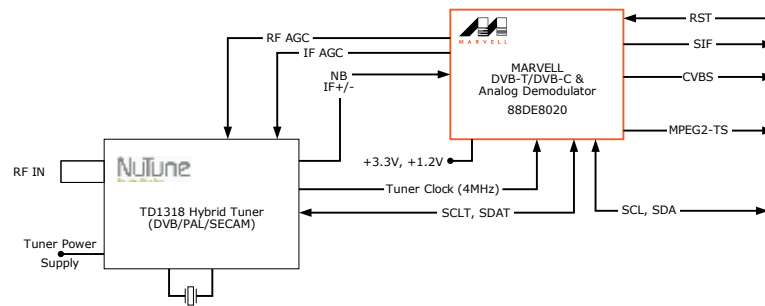88DE8020
RST
SIF
CVBS
MPEG2-TS
SCL, SDA

Fig 2. Block Diagram of the Quartz development platform with NuTune® TD1318AF hybrid tuner and Marvell 88DE8020 hybrid demodulator

Fig 3. Picture of the Quartz development platform

THE MARVELL ADVANTAGE: Marvell chipsets come with complete reference designs which include board layout designs, software, manufacturing diagnostic tools, documentation, and other items to assist customers with product evaluation and production. Marvell's worldwide field application engineers collaborate closely with end customers to develop and deliver new leading-edge products for quick time-to-market. Marvell utilizes world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low-cost total solutions.

ABOUT MARVELL: Marvell is a leader in storage, communications, and consumer silicon solutions. Marvell's diverse product portfolio includes switching, transceiver, communications controller, processor, wireless, power management, and storage solutions that power the entire communications infrastructure, including enterprise, metro, home, storage, and digital entertainment solutions. For more information, visit our Web site at www.marvell.com.