MT8872C AND MT8872P COFDM DEMODULATOR/FEC

CONSUMER AND PROFESSIONAL DVB-T TV RECEIVER AND SET-TOP BOX APPLICATIONS

APPLICATIONS

- DVB-T TV receivers
- DVB-T set-top boxes

FEATURES

- Integrated 10-bit ADC
- 1st IF input supported
- No VCXO required because of digital resampling techniques
- Quick synchronization after channel switch (<70 ms)
- 6 MHz, 7 MHz, and 8 MHz channel-compliant with only one X-tal
- 8K and 2K modes
- Digital AFC
- Hierarchical modulation supported
- BER, S/N, packet error, constellation diagram readout via I^2C
- Very small package (80 pins TQFP)
- Tristatable serial or parallel MPEG output
- Serial MPEG2transport stream output
- Low power consumption (750 mW)
- Excellent performance (in presence of echoes, co-channel, AWGN
- Real-time channel monitoring options for professional applications (SP8871P only)
  - FFT window
  - Constellation diagram
  - Pilot spectrum

MT8872C

MT8872P

COFDM Demodulator/FEC

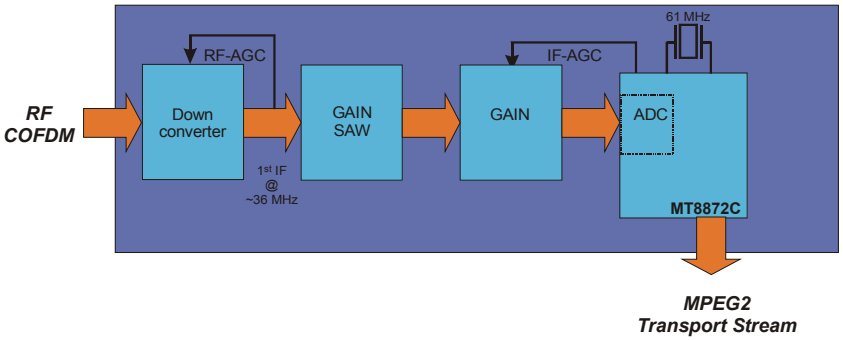
The MT8872C is an ETS 300 477-compliant integrated demodulator and forward error corrector (FEC) for DVB terrestrial digital television receivers and set-top boxes. It accepts as data baseband or 1st IF COFDM. The 1st IF sampling option further decreases system cost. The 10-bit ADC samples the incoming signal. The internal microprocessor locks to the OFDM signal fully automatically. The MT8872 can cope with very severe channel distortions due to its state-of-the-art channel estimation unit. The error correction unit corrects remaining errors and outputs a DVB common interface-compliant MPEG-2 transport stream.

MONITOR FUNCTIONS

Optionally, data transfer to and from the internal blocks of the MT8872P can be provided directly from the pins (e.g., the filtered time-domain signal, the FFT output, interpolated pilots and the equalized signal after the channel estimation unit). This enables real-time monitoring of channel characteristics for use in professional applications.

SPECIFICATIONS

- AGC frequency: 0 to 1 MHz
- Digital timing recovery accuracy: <1 ppm
- Typical supply voltage: 2.5V
- Nominal power dissipation: 0.8W
- Input signal: differential baseband or 1st IF COFDM
- Output signal: MPEG2 transport stream
- Control: via serial bus I^2C compatible
- External clock frequency: 55 MHz, 61 MHz for 1st IF
- Package: quad flat pack, 80 pins (144 pins for SP8871P)
- Ambient operating temperature: 0° to +70°C
- IEEE 1149.1 boundary scan



Block Diagram of MT8872C COFDM Demodulator/FEC

PERFORMANCE

- Co-channel carrier to interferer ratio: <-12 dB
- AWGN performance: <1 dB loss
- Echo performance: 0 dB

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