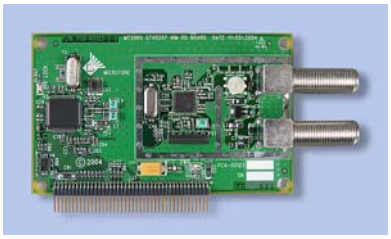
MICROTUNE

RF SILICON AND SUBSYSTEMS SOLUTIONS
FOR BROADBAND COMMUNICATIONS AND AUTOMOTIVE ELECTRONICS

M2060-STV0297-RD DVB-C REFERENCE DESIGN

PRODUCT BRIEF

The MT2060-STV0297-RD is an inexpensive, integrated tuner-demodulator Reference Design solution for DVB-C applications.



M2060-STV0297-RD DVB-C REFERENCE DESIGN

The MT2060-STV0297-RD is a cost-optimized, high-performance Reference Design that eases DVB-C implementation in cable set-top boxes. The combination of the MicroTuner™ MT2060 and the STMicroelectronics STV0297 demodulator, enhanced by special adjacent channel filtering and in-band flatness, meets or exceeds required DVB-C performance. The design also features low power consumption and low component count.

ABOUT THE MT2060

The MicroTuner™ MT2060 is an advanced, low-power single-chip broadband tuner that enables high-performance RF reception in DVB-C set-top boxes.

It receives frequencies ranging from 90 MHz to 862 MHz, converting the selected channel to a standard 36.125 MHz intermediate frequency (IF).

The highly-integrated, dual-conversion architecture of the MT2060 includes on-board band selection filters. This minimizes external component count, resulting in an extremely cost-effective, low-risk DVB-C design. The MT2060's low distortion and low close-in phase noise makes it an excellent choice for QAM signal processing systems. The controlled input impedance across the entire input band, and the outstanding image rejection with low in-band emissions and spurs makes it the silicon tuner of choice for such applications.

ABOUT THE STV0297

The STV0297 is a single chip QAM demodulator that converts an IF signal to an MPEG-2 datastream. It is fully compliant with the DVB-C specification (ITU J83A/C bitstream) for the transmission of compressed television, sound and data signals over cable.

The integrated A/D converter in the IC allows it to handle 16 to 256 QAM signals and a wide range of symbol rates without an external feedback loop or an additional down-converter stage. The IC delivers an error-corrected MPEG-2 transport stream with programmable data clock frequency to an MPEG-decoder.

The STV0297 is fully controlled using the two-wire serial bus. It integrates seamlessly with the MT2060 tuner in this Reference Design, using a 36.125 MHz IF frequency.

FEATURES

- DVB-C compliant
- 90 MHz to 862 MHz input range
- Easy interfacing using SPI parallel-bus output (LVDS option available)
- Cost-optimized BOM (Bill Of Materials) with minimal external component count
- No manually-tuned parts required
- Low-power dual-conversion RF architecture
- Turnkey Reference Design speeds time-to-market
- Reference Design Evaluation Boards with complete software and documentation package available
- Fully controlled by two-wire serial bus

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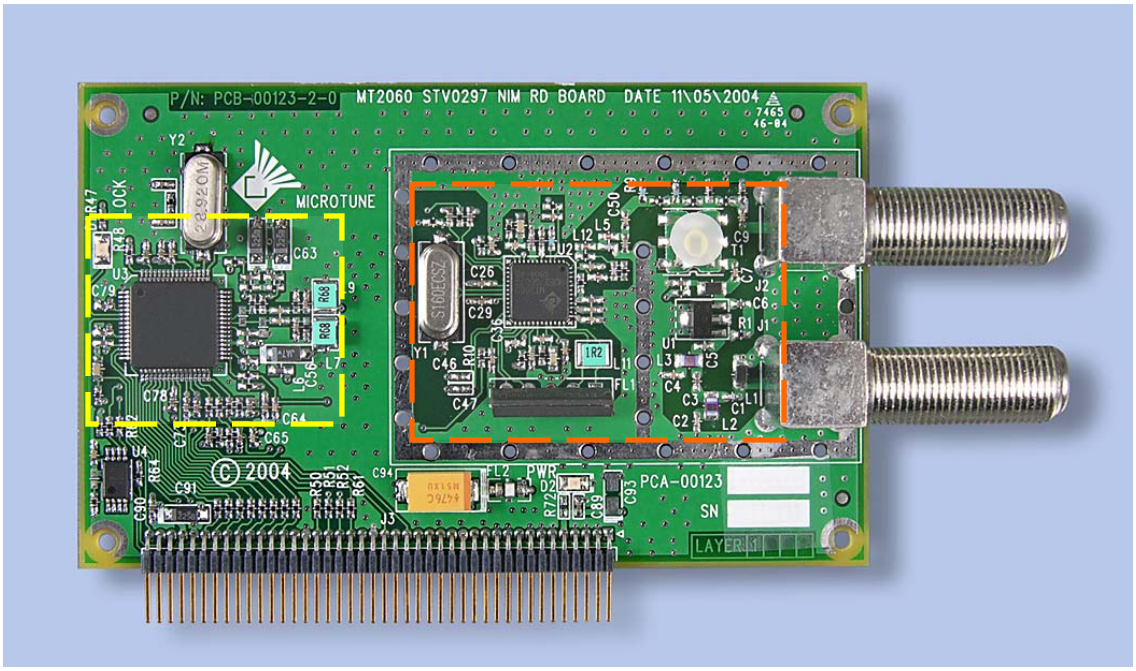
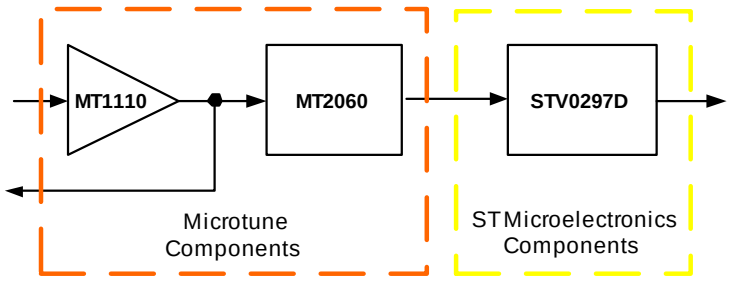
TYPICAL SYSTEM PERFORMANCE

PARAMETER	TEST CONDITIONS	PERFORMANCE (BER)
Bit Error Rate (BER) without added noise	Input Signal : -13 dBmV Frequency Range: 140 - 850 MHz Symbol Rate: 6.952 Msym/s QAM: 256	< 5 x 10^{-6}
BER with added noise	Input Signal : -13 dBmV Frequency Range: 140 - 850 MHz Symbol Rate: 6.952 Msym/s QAM: 256 CNR: >33	<= 2.00 x 10^{-4}





MT2060-STV0297-RD BLOCK DIAGRAM

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