

## SCT9389

### Two-way Radio Transceiver Design Reference (DMR, dPMR, Analog)

The SCT9389 is a small form factor PMR radio transceiver that supports DMR/Analog operation or dPMR/Analog operation and has been tested against EN 300 113 requirements.

#### Features

- 80 x 34 mm PCB footprint
- 2W output power
- 136-174 MHz and 400-470 MHz operation
- Single supply voltage
- Single design supports 6.25 and 12.5 kHz channel bandwidths
- Hardware Development Kit available to demonstrate operation as a complete PMR transceiver
- Simple interfacing via 30 pin connector

#### Applications

- DMR/Analog radio transceiver
- dPMR/Analog radio transceiver
- Data over Digital PMR

#### Key Advantages

- Small compact design
- Direct conversion receiver technology enables a low profile solution (4mm)
- Schematics, Gerbers and Software available enabling fast product development
- Customer Programming Software available
- Design tested to EN 300 113

The SCT9389 is available from CML's 'Sicom Technologies' product range that is specifically targeted at high volume and low cost radio applications.

The SCT9389 is based on a highly integrated digital baseband processor with embedded MCU (SCT3268TD), direct conversion receiver, integrated PLL/VCO and high efficiency power amplifier.

The baseband processor's integrated DSP contains protocol stacks for DMR and dPMR, including physical layer, data link layer and call control layer. The transmit modulation scheme is 4FSK, which supports both voice and data services.

The design features a simple digital interface with the minimum of external components and can be configured as a complete radio solution.

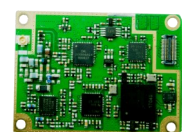
#### Supported Functionality

- Analog communication - clear voice /CTCSS/DCS
- Digital voice (dPMR/DMR) - private/group call
- Digital data (short message) (dPMR/DMR) - private/group call
- DMR direct TDMA
- Digital repeater mode (dPMR/DMR)
- Scrambling
- Power saving mode
- Automatic detection and switching between digital and analog modes
- Supports customer programming software (CPS)

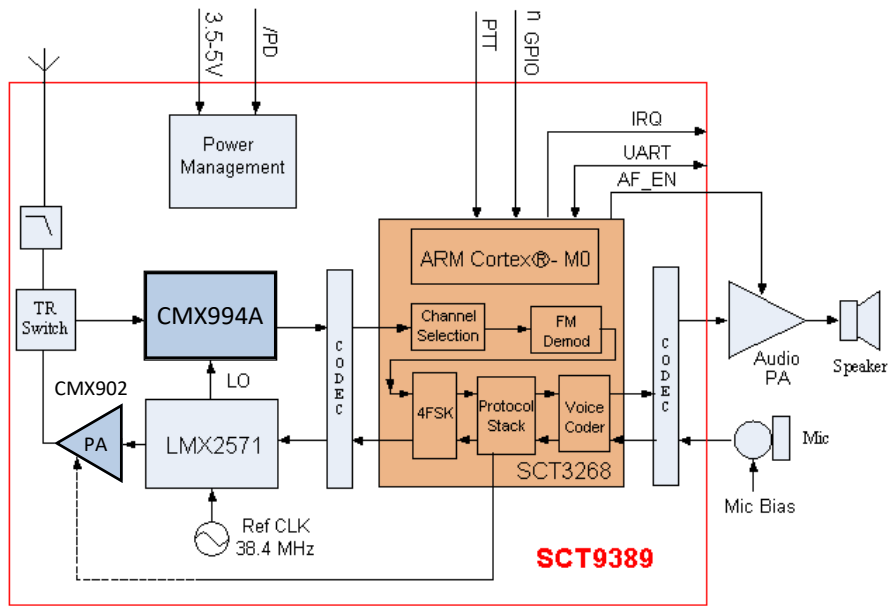
SCT9389-HDK Hardware Development Kit implements a complete radio solution based on the SCT9389 design.



SCT9389-HDK

SCT9389  
80mm x 34mm PCB footprint

## Function Block Diagram



## Measured Radio Performance

Transmitter Specification					
Frequency	UHF	400		470	MHz
Tx Power ( high power )	VCC = 4.0V		33		dBm
Tx Power ( low power )			30		dBm
Adjacent Channel Power	12.5 kHz offset	60			dBc
Receiver Specification					
Rx Sensitivity	BER = 1%			-118	dBm
ACS	BER = 1% @ 12.5 kHz offset	60	64		dBc
Spurious Response	BER = 1% @ 25 kHz offset	70			dBc
Inter-modulation	BER = 1%	65	66		dBc
Blocking	BER = 1% @ 1 MHz offset	84	87		dBc
Frequency stability		-25		25	Hz
ACTP			55		dB

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