

## SCT9366D

### Handheld Transceiver Design Reference (DMR, dPMR, Analog)

The SCT9366D is a PMR radio transceiver design that supports DMR/Analog or dPMR/Analog operation. The design is based on a digital baseband processor SCT3258TD, MCU, direct conversion receiver, integrated PLL/VCO and high efficiency power amplifier and has been tested against EN 300 113

#### Features

- 5W output power
- 400-470MHz operation
- Single 7.4V supply voltage
- Single design supports 6.25 and 12.5kHz channel bandwidths
- Digital/Analogue detection with automatic mode switching
- Voice prompts
- Chinese/English language support

#### Applications

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

#### Key Advantages

- Schematics, Gerbers and Software available enabling fast product development
- Customer Programming Software available
- Design tested to EN 300 113

The SCT9366D is available from CML's 'Sicom Technologies' product range that is specifically targeted at high volume and low cost radio applications.

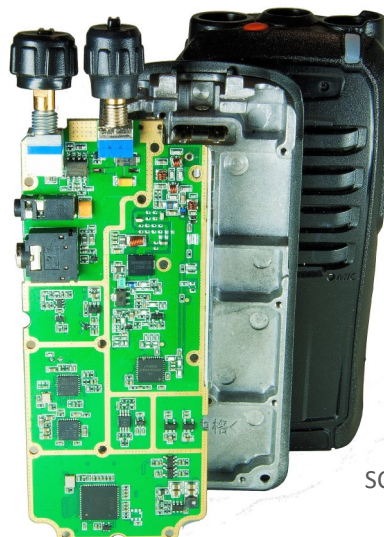
The SCT9366D Design Reference is a complete 5 Watt hand held transceiver design operating at UHF frequencies and supporting Tier 1 and 2 operation. It is been implemented on a single PCB that has the same form factor as a typical portable PMR radio in the market today.

The design supports dual mode analog and digital operation, supporting either DMR/Analog or dPMR/Analog systems.

Both digital operating modes employ an AMBE+2™ vocoder to ensure interworking with digital radios already on the market.

Supporting 128 channels in 8 call groups via a 16 channel selector, the design also has 3 soft programmable keys that allow One Touch access for functions defined using the Customer Programming Software that is available as part of the design support package.

When operating in digital modes both voice and data communication is possible. Peer to peer and group calls are supported along with digital short messaging.



SCT9366D Internal View

For further details please visit CML's website and Technical portal at [www.cmlmicro.com](http://www.cmlmicro.com).

## Measured Radio Performance

Receiver			
Digital Rx sensitivity	$\leq -119\text{dBm @ BER=5\%}$ $\leq -116\text{dBm @ BER=1\%}$		
Analog Rx sensitivity	$\leq -118\text{dBm @ SINAD=14 dB}$		
Adjacent channel selectivity	$>55\text{dB @ 6.25 kHz}$		
	$>60\text{dB @ 12.5 kHz}$		
Inter-modulation	$>65\text{ dB}$		
Co-channel suppression	$-11\text{dB}$		
Spurious response suppression	$>70\text{dB}$		
Spurious radiation	$-57\text{dBm @ } < 1\text{GHz}, -47\text{dBm @ } > 1\text{GHz}$		
Blocking	$>90\text{dB}$		
Rated audio power	$1\text{W @ THD=10\%}$		
Audio distortion	$<3\%$		
Audio response	$\pm 3\text{dB}$		
Transmitter			
Frequency stability	$\pm 100\text{Hz}$		
Tx power	<table border="1"> <tr> <td>400-470MHz</td> <td> <math>4\text{W} \leq \text{PH} \leq 5\text{W}</math>  <math>1\text{W} \leq \text{PL} \leq 1.5\text{W}</math> </td> </tr> </table>	400-470MHz	$4\text{W} \leq \text{PH} \leq 5\text{W}$ $1\text{W} \leq \text{PL} \leq 1.5\text{W}$
400-470MHz	$4\text{W} \leq \text{PH} \leq 5\text{W}$ $1\text{W} \leq \text{PL} \leq 1.5\text{W}$		
FM noise	$40\text{dB}$		
Spurious radiation	$-36\text{dBm @ } < 1\text{GHz}, -30\text{dBm @ } > 1\text{GHz}$		
Adjacent channel power	$-60\text{dB @ 12.5 kHz}$		
Modulation limitation	$1.7\text{-}2.2\text{KHz @ 12.5 kHz}$		
Modulation sensitivity	$8\text{-}12\text{mV}$		
Modulation characteristic	$+1\text{dB} \sim -3\text{dB}$		
Digital Tx Bit Error Rate (BER)	$\leq 3\%$		

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## WHAT TO DO NEXT

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