

THEORY OF OPERATION

a The DC V/I at the final RF amplifier device

DC voltage	4.2V
DC current	20uA

b) Freq. Stabilizing, Limiting TX Power

TCX951 VCTCXO This is a reference source of frequency synthesizer

IC901 RF-IC This is a RF transceiver IC for GSM900/DCS1800/PCS1900 Triple band cellular systems. This incorporates triple RF LNAs , triple direct conversion mixers which are IQ demodulators , a auto offset calibrated programmable gain amplifier with baseband filter for both IQ chains , RF synthesizer for the receiver , and IQ modulator , offset PLL and IF synthesizer for the triple band transmitter .

IC971 RFVCO The RFVCO generates the RF local signal with voltage control

IC851 TXVCO The TXVCO generates TX signal with voltage control

IC831 PA The PA amplify the TXVCO's output signal with power control

IC881 APC IC This IC controls output power by closed loop with coupler

c) Gaussian Filter for MSK

The GMSK modulator is implemented using digital logic and a ROM look-up table.

The input data is differentially encoded and used to address a ROM which combines the Gaussian pulse shaping and the minimum shift-keying (MSK) modulation.

The Gaussian pulse shaping has an impulse response of four bit periods.

The resulting signal has a bandwidth-time period (BT) product of 0.3.