

RADIO MODULE
MTX-NT800

FM TRANSMITTER MODULE

Supports the follow parts:

MTX-NT800

PRELIMINARY

DATA SHEET

Radios, Inc.

April 27, 2006 Preliminary Data Sheet

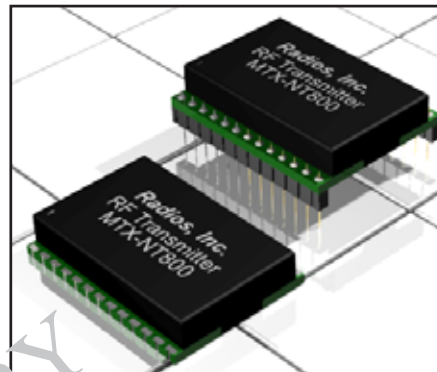
MTX-NT800

FM TRANSMITTER MODULE

The MTX-NT800 is a complete, single chip, FM Transmitter solution, which will operate in any 26 MHz band from 100-1000 MHz, including the Industrial Scientific Medical (ISM) band (902-928 MHz). Utilizing a direct modulation approach, the MTX-NT800 provides a simple RF solution. Its transmitter section contains a directly modulated VCO and RF power amplifier (PA). An internal, high-performance phase locked loop (PLL) synthesizer with VCO allows transmitter operation over the entire RF tuning range. PLL programming and VCO trim.

The MTX-NT800 provides a high level of integration with high performance operation and low power consumption. It operates over an industrial temperature range of -20C to +65C and over the supply voltage of +2.7V to +16V.

The transmit section consists of a modulation input circuit, PLL synthesizer with directly modulated voltage controlled oscillator (VCO), and a RF power amplifier (PA). The PA is capable of providing +1.5 dBm into a 50 ohm load.



Key Features

- 100 - 1000 MHz Frequency Range
- Wide Bandwidth FM Transmitter
- Suitable for FM/FSK Modulation
- Direct-Modulation Scheme
- 3-wire serial interface
- 2.7 - 16V Operation
- RF Output +1.5 dBm
- Low Cost
- BiCMOS Fabrication

Typical Applications

- Analog/Digital 900 MHz Cordless Phones
- Telemetry/Data Radios
- Wireless Local Area Networks (WLAN)
- ISM Band (900 MHz) Wireless Products

PRODUCT ORDER INFORMATION

Part Number	Description
MTX-NT800(D)(S)	NT2800 FM/FSK Module Transmitter

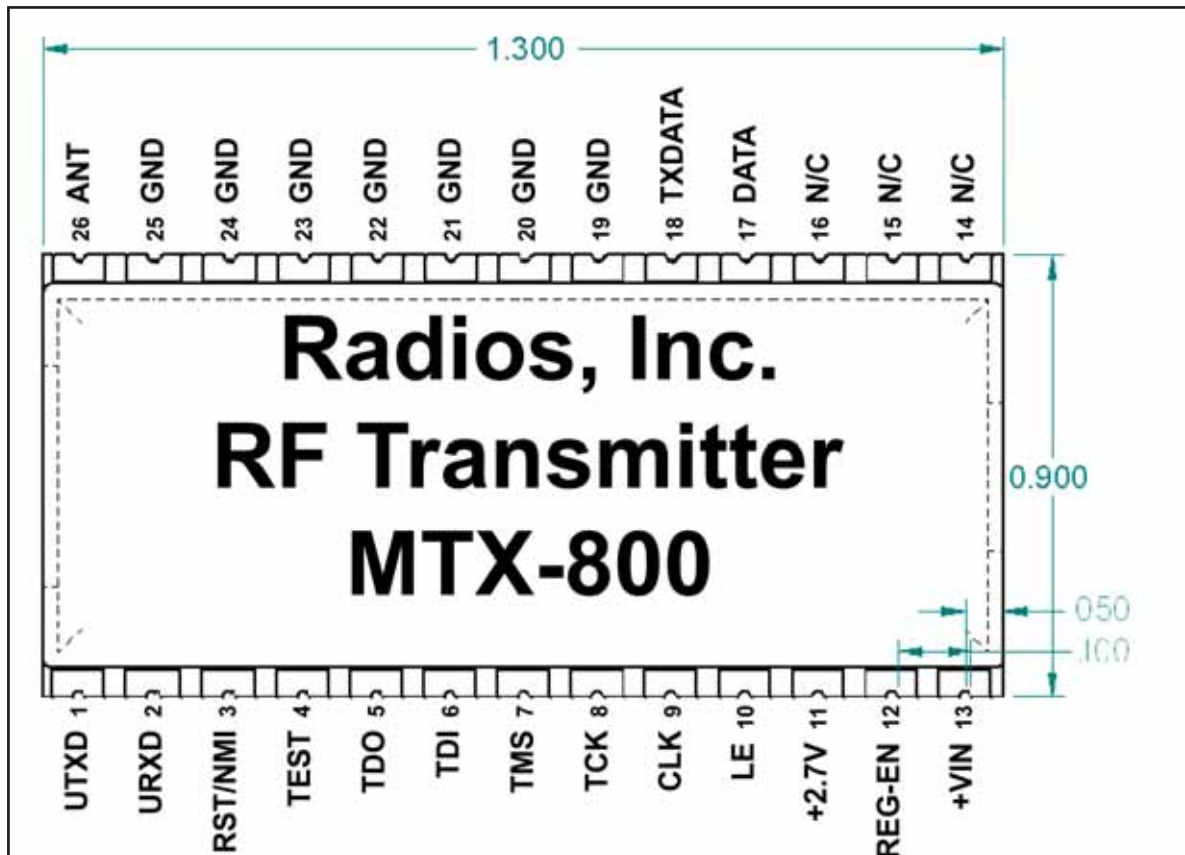
Contact Information

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Mechanical and Pin Diagram



Pin Description

Pin Num	Pin Name	Description	Pin Num	Pin Name	Description
Pin 1	UTXD	UART Transmit Data Out	Pin 14	N/C	No Connect
Pin 2	URXD	UART Receive Data In	Pin 15	N/C	No Connect
Pin 3	RST/NMI	Reset/Nonmaskable interrupt input	Pin 16	N/C	No Connect
Pin 4	TEST	Selects Test Mode	Pin 17	DATA	Serial Data Input
Pin 5	TDO	Test Data Output	Pin 18	TXDATA	Transmitted Data
Pin 6	TDI	Test Data Input	Pin 19	Gnd	Ground
Pin 7	TMS	Test Mode Select	Pin 20	Gnd	Ground
Pin 8	TCK	Test Clock	Pin 21	Gnd	Ground
Pin 9	CLK	Serial Clock	Pin 22	Gnd	Ground
Pin 10	LE	Load Enable	Pin 23	Gnd	Ground
Pin 11	+2.7V	Regulated Output	Pin 24	Gnd	Ground
Pin 12	REG-EN	Regulator Enable	Pin 25	Gnd	Ground
Pin 13	+VIN	Positive Supply Pin	Pin 26	Ant	RF Input

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Electrical Limits

Sym	Parameters	Min	Typ	Max	Unit	Notes
Absolute Maximum Ratings						
VDD	Supply Voltage	2.7		16	V	
	Storage Temperature Range	-65		150	°C	
	Lead Temperature		260		°C	
V _{EN}	Enable Input Voltage	-20		+20	V	
Operating Ratings						
	Maximum Supply Ripple Voltage			TBD	mV	
V _{EN}	Enable Input Voltage	0		TBD	V	
TA	Ambient operating temperature	-20		65	°C	

Electrical Characteristics

This device is ESD sensitive. Do not operate or store near strong electrostatic fields. Use appropriate ESD precautions. All voltages are with respect to Ground.

Parameters	Test Conditions	Min	Typ	Max	Unit
Channel Spacing			150		kHz
Channel Step Size		50			kHz
L.O. Spurious Output			-60	-57	dBc
TX Output Power	At antenna output	-3	-0.5	1	dBm
TX Tuning Range		100		1000	MHz
Frequency of Operation		100		1000	MHz
Power Supply					
TX Current Consumption			25		mA
Standby Current			5		mA
Quiescent Current	V _{EN} <= 0.4V (shutdown)		0.01	1	μA
	V _{EN} <= 0.18V (shutdown)			5	μA
PLL (TX)					
Phase Noise	10 kHz offset		-85		dBc/Hz
	100 kHz offset		-105		dBc/Hz
	1.0 MHz offset		-125		dBc/Hz
	22.75 MHz offset		-150		dBc/Hz
Spurious Products	Unwanted	-60			dBc
Step Size		50			kHz
Reference Oscillator	Internal	5		20	MHz
Power Amplifier (PA)					
Power Output		0	1.5	3	dBm
Harmonic Level	2nd		-54.2		dBc
	3rd		-44.2		dBc
	4th		-70.9		dBc
Output Impedance (Differential)		500	600	700	

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Electrical Characteristics - CONT.

Transmit Audio Response					
Input Level	Standard Test Conditions		200		mVrms
Input Sensitivity			26 MHz/V		V
Bandwidth	-3 dB	0.3		70	kHz
ENABLE Input					
Enable Input Logic-Low Voltage(V_{IL})	regulator shutdown			0.4	V
				0.18	V
Enable Input Logic-High Voltage(V_{IH})	regulator enabled	2.0			V
Enable Input Current	$V_{IL} \leq 0.4V$	2	5	0.01	μA
	$V_{IL} \leq 0.18V$			-1	μA
	$V_{IH} = 2.0V$			20	μA
	$V_{IH} = 2.0V$			25	μA

Note 1. Exceeding the absolute maximum rating may damage the device.

Note 2. The device is not guaranteed to function outside its operating rating.

Note 3. Devices are ESD sensitive. Handling precautions recommended. Human body model, 1.5k in series with 100pF.

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Editorial Information:

	(Date)
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