



International Presence

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-  Research & Development
-  Sales & Applications
-  Manufacturing



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Melexis

INSPIRED ENGINEERING

SELECTION GUIDE

WIRELESS

We offer a wide range of transceivers combining both a transmitter and a receiver in a single package for TPMS, keyless entry and industrial, scientific and medical applications.

Microbats generate ultrasound via the larynx and emit the sound through the nose or open mouth: from 14,000 to over 100,000 hertz, well beyond the range of the human ear. The emitted vocalizations form a broad beam of sound used to probe the environment, as well as communicate with other bats.

RF Transmitters - fixed frequency, medium RF power											
Transmitter IC	TH 72001	TH 72002	TH 72005	TH 72011	TH 72012	TH 72015	TH 72016	TH 72031	TH 72032	TH 72035	TH 72036
Frequency Range [MHz]	310 to 350			380 to 45				850 to 930			
Supply Range [V]	1.95 to 5.5			1.95 to 5.5				1.95 to 5.5			
Temperature Range [°C]	-40 to +125			-40 to +125				-40 to +125			
Supply Current [mA]	3.2 – 10.3			3.4 – 10.6			3.8 – 11.0	5.1 – 13.4			5.5 – 13.8
Standby Current [nA]	10			10				10			
Modulation	FSK	ASK OOK	FSK ASK OOK	FSK	ASK OOK	FSK ASK OOK	FSK ASK OOK	FSK	ASK OOK	FSK ASK OOK	FSK ASK OOK
RF Output [dBm]	-13 to 11			-13 to 10				-13 to 10			
Clock Output	no			no		yes		no		yes	
Low-voltage det.	yes			yes				yes			
Package	SOIC 8	SOIC 8	10L DFN 3x3	SOIC 8	SOIC 8	10L DFN 3x3	10L DFN 3x3	SOIC 8	SOIC 8	10L DFN 3x3	10L DFN 3x3

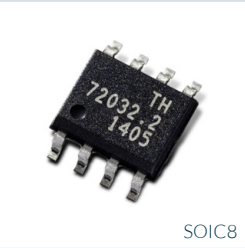
RF Transmitter - fixed frequency, high RF power	
Transmitter IC	MLX72013
Frequency Range [MHz]	425 to 445
Supply Range [V]	1.95 to 5.5
Temperature Range [°C]	-40 to +125
Supply Current [mA]	3.5 – 15.9
Standby Current [nA]	10
Modulation	FSK, ASK, OOK
RF Output [dBm]	-13 to 12
Clock Output	no
Low-voltage det.	yes
Package	SOIC8

	LF		HF RFID and NFC			
	125 kHz		13.56 MHz			
			ISO 14443 A & B	ISO 15693	ISO 18000-3 (mode 1)	ISO 18092 and NFC Forum
Sensor Tag						
MLX90129 NFC Sensor Tag				✓		
Readers						
MLX90109 125kHz RFID Reader	✓					
MLX90132 NFC Reader		✓	✓	✓	✓	✓
LF Driver						
MLX74190 2-Channel LF Initiator	✓					

RF Receivers - highly integrated, fixed frequency and frequency agile			
Receiver IC	MLX71120	MLX71121	MLX71122
Frequency Range (standard)	300 to 930MHz	300 to 930MHz	300 to 930MHz
Frequency Range (extended)	N/A	N/A	27 to 950MHz
Programmability	fixed frequency and band switching	fixed frequency and band switching	frequency agile and fully programmable via 3-wire SPI
Supply Range	2.1 to 5.5V	2.1 to 5.5V	3.0 to 5.5V
Temperature Range	-40 to +125°C	-40 to +125°C	-40 to +110°C
Operating Current	6.5 – 8.1mA	10.0 – 11.1mA	9.5 – 15mA
Standby Current	50nA	50nA	50nA
Demodulation	FSK, OOK	FSK, OOK	FSK, OOK
Frequency Conversion	double superhet	double superhet	double superhet
FSK Demodulator	internal	internal	internal
IF Filter	External at 455kHz or 10.7MHz	Internal with 300kHz bandwidth	Internal with 230kHz bandwidth
Antenna Diversity	2 LNAs with 2 antennas	2 LNAs with 2 antennas	no
Frequency Diversity	433/868MHz	433/868MHz	any frequency
AFC (carrier acceptance range)	±20 to ±400kHz	up to ±80kHz	up to ±150kHz
Min. Channel Spacing			25kHz
Input Sensitivity (typ.) internal IF filter with 230kHz IF BW			-107dBm FSK -112dBm OOK
Input Sensitivity (typ.) internal IF filter with 300kHz IF BW		-107dBm FSK (1 LNA) -115dBm FSK (2 LNAs) -112dBm OOK (1 LNA)	
Input Sensitivity (typ.) external 10.7MHz IF filter with 180kHz IF BW	-108dBm FSK (1 LNA) -116dBm FSK (2 LNAs) -113dBm OOK (1 LNA)		
Input Sensitivity (typ.) external 455kHz IF filter with 20kHz BW	-112dBm FSK (1 LNA) -118dBm FSK (2 LNAs)		
MCU clock output	2-3.4MHz	2-3.4MHz	10MHz
Peak detection mode	yes	yes	yes
Max. FSK data rat	100kbps NRZ	100kbps NRZ	100kbps NRZ
Max. ASK data rate	100kbps NRZ	100kbps NRZ	100kbps NRZ
Max. Input Signal	0dBm, FSK -10dBm, OOK	0dBm, FSK -10dBm, OOK	0dBm, FSK -10dBm, OOK
Image Rejection (with external SAW filter)	> 65dB	> 65dB	> 65dB
Spurious Emission	< -54dBm	< -54dBm	< -70dBm
Package	32L QFN5x5	32L QFN5x5	32L QFN5x5



DFN 3x3



SOIC8



QFN 5x5