

RF Transmitters (2nd generation, not recommended for new designs)

2 nd Generation Transmitter ICs	TH7107	TH71071	TH71072	TH7108	TH71081
Frequency Range	310 – 450 MHz	310 – 450 MHz	310 – 450 MHz	850 – 920 MHz	850 – 920 MHz
Supply Range	2.2 – 5.5 V	2.2 – 5.5 V	2.2 – 5.5 V	2.2 – 5.5 V	2.2 – 5.5 V
Supply Current	4.8 – 11.5 mA	4.8 – 11.5 mA	6.2 – 11.5 mA	6.2 – 12.5 mA	6.2 – 12.5 mA
Standby Current	50 nA	50 nA	50 nA	50 nA	50 nA
Modulation	FSK, ASK	ASK	ASK	FSK, ASK	ASK
RF Output	differential -12 to 2 dBm	differential -12 to 2 dBm	single-ended -15 to -1 dBm	differential -15 to 1 dBm	differential -15 to 1 dBm
Clock Output	yes	no	yes	yes	no
Package	QSOP16	SOIC8	SOIC8	QSOP16	SOIC8
Delivery	package or die	package or die	package or die	package or die	package or die
Latest data sheet	Rev. 010	Rev. 009	Rev. 009	Rev. 010	Rev. 009
Latest EVB descrip.	Rev. 010	Rev. 006	---	Rev. 010	Rev. 006

note 1: all parts in production, evaluation boards available, T_a = -30 to +85 C

note 2: all parts can also be used for analog FM

RF Transmitters (3rd generation)

3 rd Generation Transmitter ICs	TH 72001	TH 72002	TH 72005	TH 72011	TH 72012	TH 72015	TH 72016	TH 72031	TH 72032	TH 72035
Frequency Range	290 – 350 MHz			380 – 450 MHz				850 – 930 MHz		
Supply Range	1.95 – 5.5 V			1.95 – 5.5 V				1.95 – 5.5 V		
Supply Current	3.2 – 10.3 mA			3.4 – 10.6 mA			3.4 – 12.8 mA	5.1 – 13.4 mA		
Standby Current	0.2 nA			0.2 nA				0.2 nA		
Modulation	FSK	ASK	FSK, ASK	FSK	ASK	FSK, ASK	FSK, ASK	FSK	ASK	FSK, ASK
RF Output	single-ended -10 to 11 dBm			single-ended -11 to 10 dBm				single-ended -11 to 10 dBm		
Clock Output	no			no			yes	no		
Low-voltage PA shut-off	yes			yes				yes		
Package	SOIC8	SOIC8	10L MLPD 3x3	SOIC8	SOIC8	10L MLPD 3x3	10L MLPD 3x3	SOIC8	SOIC8	10L MLPD 3x3
Delivery	package or die			package or die				package or die		
Latest data sheet	Rev. 005	Rev. 005	Rev. 005	Rev. 006	Rev. 006	Rev. 005	Rev. 001	Rev. 006	Rev. 006	Rev. 005
Latest EVB description	Rev. 005	Rev. 005	Rev. 003	Rev. 006	Rev. 006	Rev. 003	Rev. 001	Rev. 006	Rev. 006	Rev. 003

note 1: all parts in production, evaluation boards on request, T_a = -40 to +125 C

note 2: all parts can also be used for analog FM

note 3: TH72016 samples

RF Receiver

Receiver ICs	TH71101	TH71102	TH71111	TH71112
Frequency Range	300 – 450 MHz	260 – 510 MHz	800 – 930 MHz	750 – 990 MHz
Supply Range	2.3 – 5.5 V @ ASK 2.5 – 5.5 V @ FSK	2.3 – 5.5 V @ ASK 2.5 – 5.5 V @ FSK	2.3 – 5.5 V @ ASK 2.5 – 5.5 V @ FSK	2.3 – 5.5 V @ ASK 2.5 – 5.5 V @ FSK
Operating Current	6.5 – 8.2 mA	6.5 – 8.2 mA	7.5 – 9.2 mA	7.5 – 9.2 mA
Standby Current	50 nA	50 nA	50 nA	50 nA
Demodulation	FSK, ASK	FSK, ASK	FSK, ASK	FSK, ASK
Frequency Conversion	single superhet	double superhet	single superhet	double superhet
Input Sensitivity narrow band @ 40 kHz IF BW	-114 dBm, FSK -112 dBm, ASK	-114 dBm, FSK -112 dBm, ASK	-112 dBm, FSK -111 dBm, ASK	-112 dBm, FSK -111 dBm, ASK
Input Sensitivity wide band @ 150 kHz IF BW	-107 dBm, FSK -109 dBm, ASK	-107 dBm, FSK -109 dBm, ASK	-105 dBm, FSK -107 dBm, ASK	-105 dBm, FSK -107 dBm, ASK
Max. Input Signal	0 dBm, FSK -10 dBm, ASK	0 dBm, FSK -10 dBm, ASK	0 dBm, FSK -10 dBm, ASK	0 dBm, FSK -10 dBm, ASK
Image Rejection (incl. SAW filter)	> 50 dB	> 65 dB	> 50 dB	> 65 dB
Spurious Emission	< -70 dBm	< -70 dBm	< -70 dBm	< -70 dBm
Package	LQFP32	LQFP32	LQFP32	LQFP32
Latest data sheet	Rev. 011	Rev. 011	Rev. 011	Rev. 011
Latest EVB descrip.	Rev. 009	Rev. 009	Rev. 009	Rev. 009

note 1: all parts in production, evaluation boards available, $T_a = -40$ to $+85$ C

note 2: all parts can also be used for analog FM

RF Transceivers

Transceiver ICs	TH7122	TH71221
Frequency Range in programmable user mode	300 – 930 MHz	
Extended Frequency Range with external VCO varactor diode	27 – 930 MHz	
Fixed-Frequency Settings in stand-alone user mode	315.0, 433.92, 868.3, 915.0 MHz	
Supply Range	2.2 – 5.5 V	
Operating Current in receive mode at max. gain	7 – 11 mA	
Operating Current in transmit mode at 6 dBm	14 – 24 mA	
Standby Current	50 nA	
Modulation/Demodulation	FSK, ASK, FM	
Adjustable Output Power Range	-20 dBm - +10 dBm	
RX Input Sensitivity at 150 kHz IF filter BW	-105 dBm at FSK, -107 dBm at ASK	
Maximum Input Level	-10 dBm at FSK, -20 dBm at ASK	
Maximum Data Rate	115 kbit/s NRZ	
Programmability	all parameters fully programmable via 3wire bus serial control interface (SCI)	
Crystal Reference Frequency	3 – 12 MHz	
Package	LQFP32	MLPQ32 5x5
Latest data sheet	Rev. 004	Rev. 002
Latest EVB description	Rev. 002	Rev. 001

note 1: TH7122 in production, evaluation boards available

note 2: TH71221 in pre-production