

### General Description

This IP Cell implements the analog and digital building blocks of a 13,56MHz Tag. Analog components consist of rectifier for the operating voltage, regulator for the digital supply voltage, a demodulator with reset and a modulator for communication from Tag IC to Reader. Furthermore the analog front-end consist of a clock extractor and a power on reset (POR).

The digital core implements the **ISO15693** protocol with EEPROM interface. The EEPROM is flexible in size and fully accessible through the RFID field as well as the SPI. The tag is designed to operate potentially with PE's digital "DATAMONITOR" and can be used for smart RFID applications that employ sensor and communication technology, e.g. in medical applications or logistics control.

Additional functions and components are usable via  $\mu$ C conform SPI interface. This serial interface is designed to communicate directly and indirectly to EEPROM and PE's digital "DATAMONITOR".

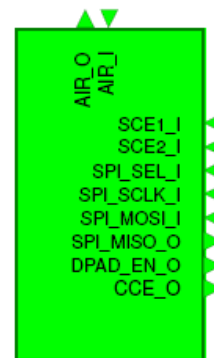
### Typical Ratings, Parameters and Condition

Parameter	Symbol	Min	Typ	Max	Unit	Comment
Operation temperature	$T_{op}$	-40	27	80	°C	
Frequency	$f_{CLK}$		13.560		MHz	
Antenna voltage	$V_{ANT}$			5,5	V	
Rectified voltage	$V_{DD}$			4,7	V	
Digital supply voltage	$V_{DDD}$	1,8	2	2,2	V	
Ripple digital supply voltage	$V_{DDripple}$	20		300	mV	
Current consumption	$I_{DD}$	15	20	30	$\mu$ A	
Active current	$I_{DDD}$	30			$\mu$ A	
Power on Reset	$t_{POR}$	45			us	
Load modulation frequency	$f_{Mod}$		423,75		kHz	ISO15693 (1 subcarrier)
	$f_{Mod}$		484,28		kHz	ISO15693 (2 subcarrier)
ASK modulation	$t_{Demod}$	6		13,94	us	ISO15693

### IO-Description

Interface	I/O	Function	Comment
ANT1	In/Out	Antenna	
ANT2	In/Out	Antenna	
SPI_SEL	In	Digital	select signal
SPI_SCLK	In	Digital	clock signal
SPI_MOSI	In	Digital	serial data in
SPI_MISO	Out	Digital	serial data out
DPAD_EN	Out	Digital	serial data out en.
SCE1	In	Digital	ext. enable SPI
SCE2	In	Digital	ext. enable SPI
CCE	Out	Digital	enable ext. comp

### Symbol / external schematic



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