



NFC analog front-end IP in 55 nm CMOS

Overview

DELTA has developed a contact-less NFC transceiver front-end for general purpose applications in the 13.56 MHz range ISO 14443A.

- PLL for 13.56 MHz clock generation at 100% modulation

Technology

GLOBALFOUNDRIES 55LPX

Features

- Low power low voltage operation
- Contact-less power supply (on-chip full wave rectifier)
- Radio frequency 13.56 MHz inductive coupling
- Supports: Type A ASK 100% Miller.
- Edge sensitive demodulator with programmable threshold
- Carrier detector
- Load modulator for 'back-scatter' transmission
- 1.2 V voltage regulator with correlated power-on-reset

For further information please contact us

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Pin list

Pin name	Type	Description
VssA	Power	Negative supply
VddA	Power	Positive supply (Regulated to 1.8 V, external filter cap needed)
RF1	Analog/Power	RF power-link, external coil and capacitor connection
RF2	Analog/Power	
RstNot	Digital, output	Power-On-Reset-Not, Active low (resetting)
RFmodout	Digital, output	Modulation output, [0] => 'dark period', 0% modulation
RFclkout	Digital, output	Extracted RF carrier (Note: NOT valid in TxD and 'dark' periods)
PLLclkout	Digital, output	System clock 13.56 MHz (PLL generated in 'dark period')
TxD	Digital, input	Active high, RF coil clamped/back-scatter (PLL free running)

Electrical characteristics

Parameter	Conditions	Min	Type	Max	Unit
RF carrier frequency			13.56		MHz
Supply voltage	Regulated supply voltage (VddA)		1.2		V
VPOR_th_up	Power-on-reset rising threshold		1.2		
Coil current	Average			60	mA