

Notes on using TMS3705A1DRG4 for TI Low Frequency Read Only & Read\Write Transponders

MCU-RF Applications\Systems Team

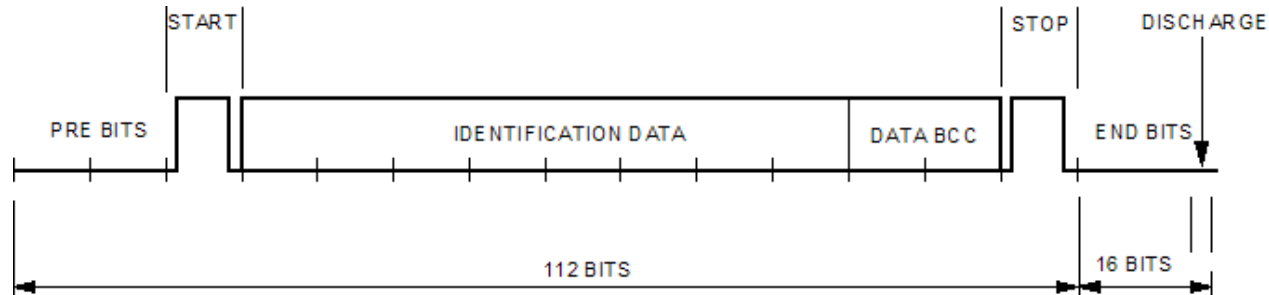
09\23\2010

Josh Wyatt

READ ONLY TAGS

Charge Only Read Sequence For Read-Only Tags (Overall Details)

- TMS3705A1DRG4 generates 50mSec Charge Burst @ 134.2kHz. (using low on TXCT line)
- RO tag responds with Pre-Bits (0x0000), Start Byte (0x7E), Tag Data, CRC16 over that data, Stop Byte(0x7E) and End Bits

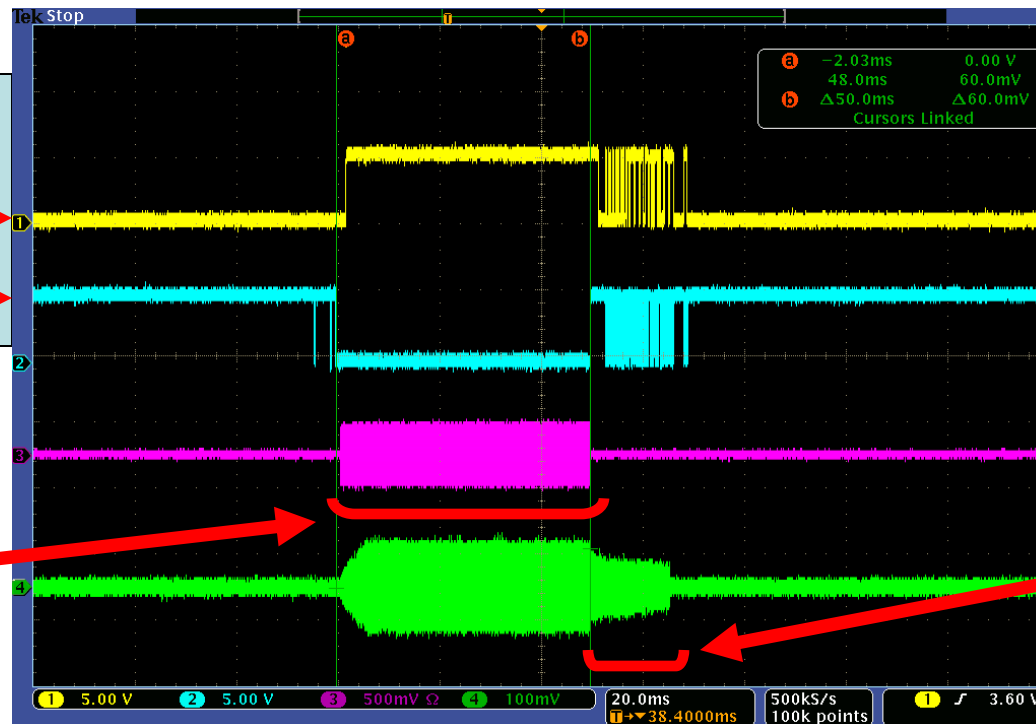


TMS3705A1DRG4 Digital Signals

SCIO Line

TXCT Line

50mSec
Charge Burst
(over the air)



<20mSec Tag
Response
(over the air)

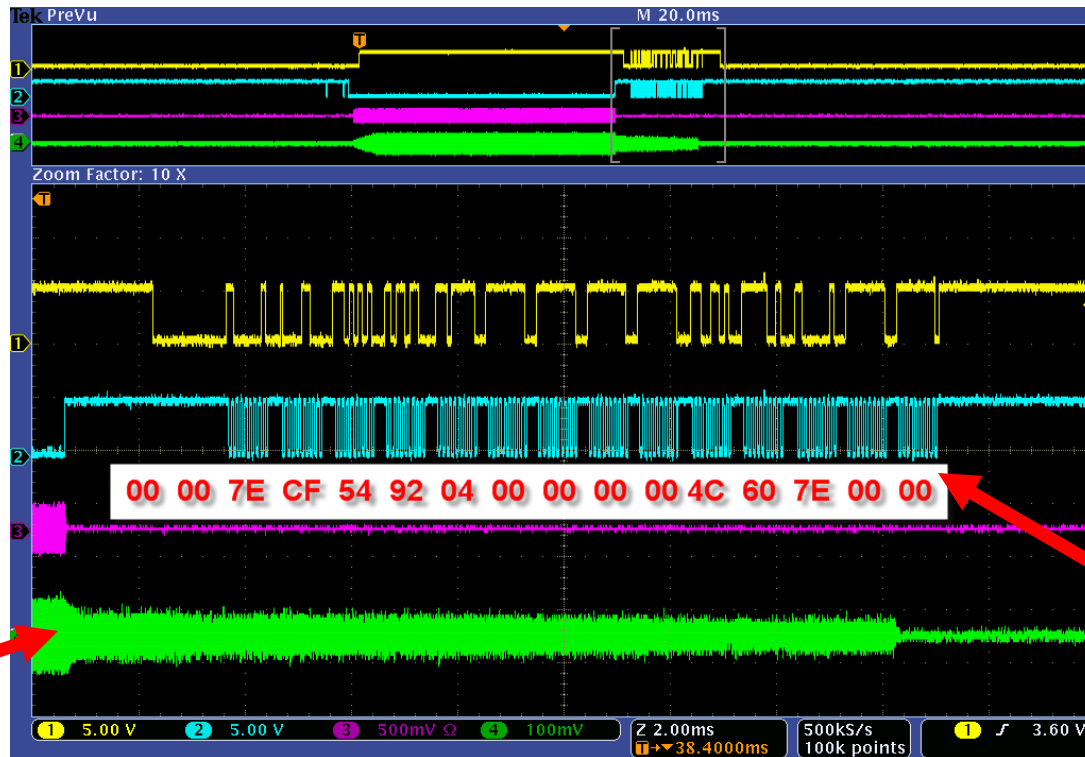
Charge Only Read Sequence for RO Tags (Overall Read Details)

- After 50mSec charge burst, RO tag responds with 128 bits total.
 - Pre-bits (16 bits, value will equal 0x0000)
 - Start Byte (8 bits, 0x7E)
 - Tag Data (64 bits)
 - CRC-16 (16 bits, over 64 bits of tag data, using polynomial of $x^{16}+x^{12}+x^5+x^1$, with start value of 0x0000). This CRC is calculated in the tag and returned for error checking purposes.
 - Stop Byte (8 bits, 0x7E)
 - End Bits (16 bits)
 - This particular tag is Read Only, has unique serial # of 00000000049254CF and a CRC of 604C

TMS3705A1DRG4
Digital Signals

SCIO Line

TXCT Line



Tag Response
(over the air)

Complete Tag
Response
(in digital format and
converted to hex for
easy reading)