

# MTP\_REG\_CRC\_DET IP SPEC

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## Introduction

Check the CRC value of MTP shadow registers every 2ms, if no right, output MTP\_REG\_CRC\_FLT is high.

## Feature

Monitor the MTP shadow register to ensure all values are right.

## Register Definition

### Register Map

Table 1 1MTP\_REG\_CRC\_DET Register Map

Name	Add	D7	D6	D5	D4	D3	D2	D1	D0	default
FACT_CRCH	0x107E	FACT_CRC16[15:8]								0x00
FACT_CRCL	0x107F	FACT_CRC16[7:0]								0x00
SYS_FLT2	0x5114				MTP_CRC					0x00

## Functional Details

### Block Diagram

The following diagram shows the MTP\_REG\_CRC\_DET inputs and outputs.



Figure1 MTP\_REG\_CRC\_DET diagram

### Module input/output list

Name	Dir	Width	Discription	duration
MTP_REG_CRC_FLT	O	1	MTP shadow register crc fault bit	Level(CLK_SLOW2 domain)
CLK_SLOW2_SC	I	1	Redundant CLK_SLOW	256KHz, 50%duty
resetb_SR_CLK_SLOW	I	1	Scan_muxed resetb and soft resetb for CLK_SLOW domain	level
load_done	I	1	MTP load done	Level(CLK_MTP domain)

pulse_SLOW2_2ms	I	1	2ms pulse in CLK_SLOW2 domain	1 CLK_SLOW2
reg1000~107F	I	8*128	MTPuraton registers 1000~107F (MTP shadow registers)	Level(CLK_REG domain)

## Clock Domain

The clock for MTP\_REG\_CRC\_DET is CLK\_SLOW2\_SC.

## MTP\_REG\_CRC\_DET function description

IBM algorithm with polynomial  $(x^{16}+x^{15}+x^2+1)$  and default value 16'hFFFF is used for CRC.

MTP\_adr[6:0] is defined that goes through all MTP shadow registers, i.e., 16'h1000~107F.

MTP\_CRC\_data[7:0] changes to corresponding register value every time MTP\_adr changes.

CRC calculator updates every time MTP\_data[7:0] changes. Once MTP\_adr[6:0] went through all the registers, check the calculator result, if not 0, MTP\_REG\_CRC\_FLT is high.

[\(HWSR001\\_MTP\\_REG\\_CRC\\_DET\)](#)