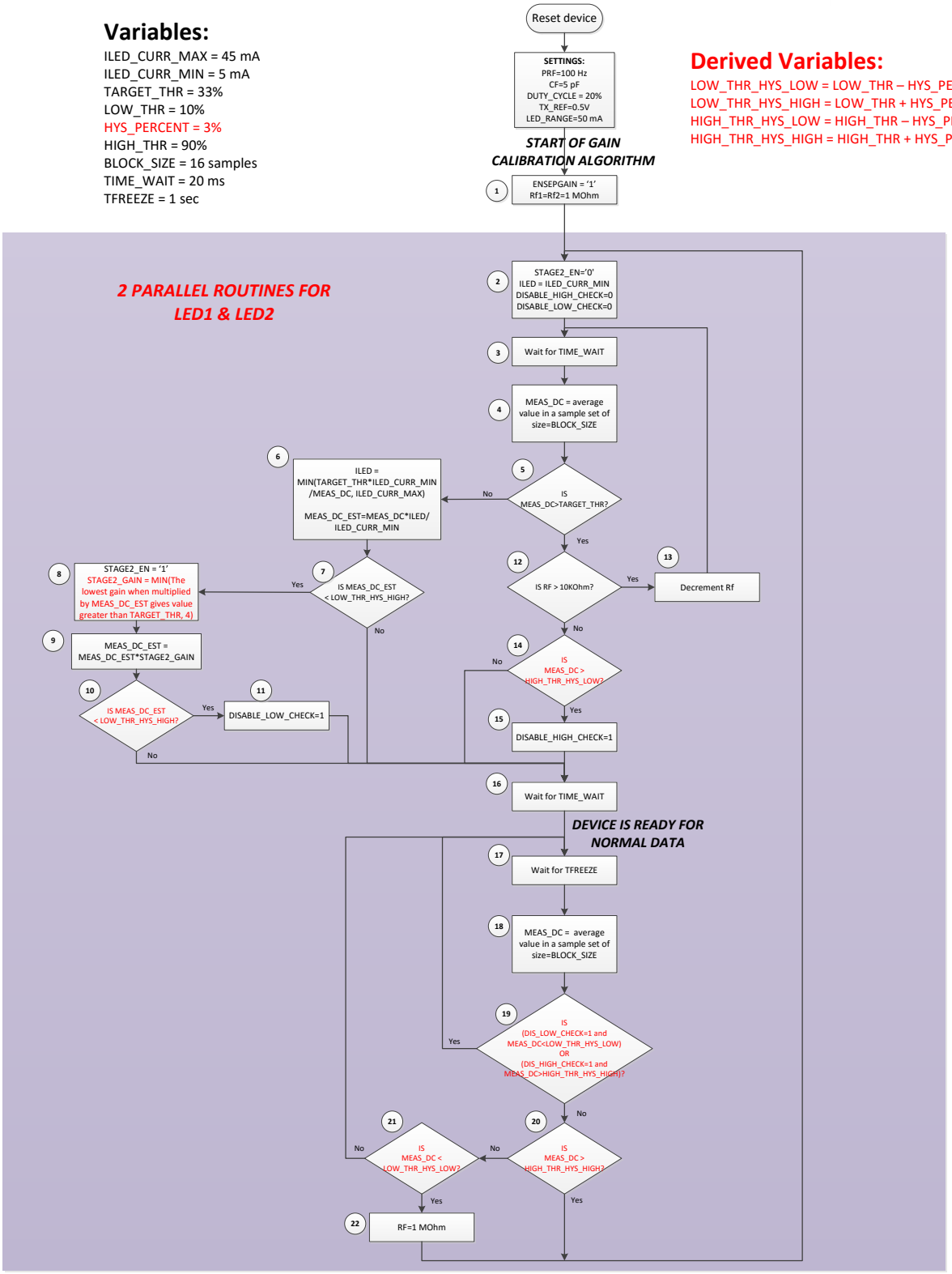
AFE44xx GAIN CALIBRATION ROUTINE

Variables:

ILED_CURR_MAX = 45 mA
ILED_CURR_MIN = 5 mA
TARGET_THR = 33%
LOW_THR = 10%
HYS_PERCENT = 3%
HIGH_THR = 90%
BLOCK_SIZE = 16 samples
TIME_WAIT = 20 ms
TFREEZE = 1 sec

Derived Variables:

LOW_THR_HYS_LOW = LOW_THR – HYS_PERCENT
LOW_THR_HYS_HIGH = LOW_THR + HYS_PERCENT
HIGH_THR_HYS_LOW = HIGH_THR – HYS_PERCENT
HIGH_THR_HYS_HIGH = HIGH_THR + HYS_PERCENT



REGISTERS IN FLOWCHART

Register Format:

Write register: Write_reg (Address, Value, Mask) **-** *only values corresponding to bit positions that have value '1' in Mask should be written. Rest of the bits should be written with their previous value.*
Eg. If mask is 0x8007, then it means that only bits D15,D2,D1,D0 are updated with the value specified in the "Value" field. Rest of the bits are supposed to be written to their previous value.
Read register: Read_reg(Address)

Register settings corresponding to flowchart boxes

Flowchart Box #	Register: Routine for LED1	Register: Routine for LED2
1	Write_reg(0x20, 0x008006, 0xFFFFFF) Write_reg(0x21, 0x000006, 0xFFFFFF)	
2	Write_reg(0x20, 0x000000,0x004000) Write_reg(0x22, 0x00YY00, 0x00FF00) *YY = hex(256*LED_CURR_MIN1/50-1)*	Write_reg(0x21, 0x000000,0x004000) Write_reg(0x22, 0x0000YY, 0x0000FF) *YY = hex(256*LED_CURR_MIN2/50-1)*
4	Read_reg(0x2C)	Read_reg(0x2A)
6	Write_reg(0x22, 0x00YY00, 0x00FF00) *YY = hex(256*ILED1/50-1)*	Write_reg(0x22, 0x0000YY, 0x0000FF) *YY = hex(256*ILED2/50-1)*
8	Write_reg(0x20, 0x004000,0x004000) Write_reg(0x20, 0x000Y00, 0x000700) *Y = STAGE2_GAIN1*	Write_reg(0x21, 0x004000,0x004000) Write_reg(0x21, 0x000Y00, 0x000700) *Y = STAGE2_GAIN2*
13	Write_reg(0x20, 0x00000Y,0x000007) *Y = RF1*	Write_reg(0x21, 0x00000Y,0x000007) *Y = RF2*
18	Read_reg(0x2C)	Read_reg(0x2A)
22	Write_reg(0x20, 0x000006,0x000007)	Write_reg(0x21, 0x000006,0x000007)

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