TRM

1. Operation Outline

The frequency of the internal high-speed oscillator is adjusted using an external reference signal.
The adjustment repeats until the adjusted frequency becomes a target one.
It is possible to monitor the waveform after adjustment.

2. Each Setting

UART   : UT1TXDA (PU5), UT1RXD (PU6)   UART is used to display a measurement result on Tera Term.

       Serial port setting

Baud rate	: 115200(bps)
Data length	: 8(bit)
Parity	: None
Stop bit	: 1(bit)
Flow control	: None

T32A

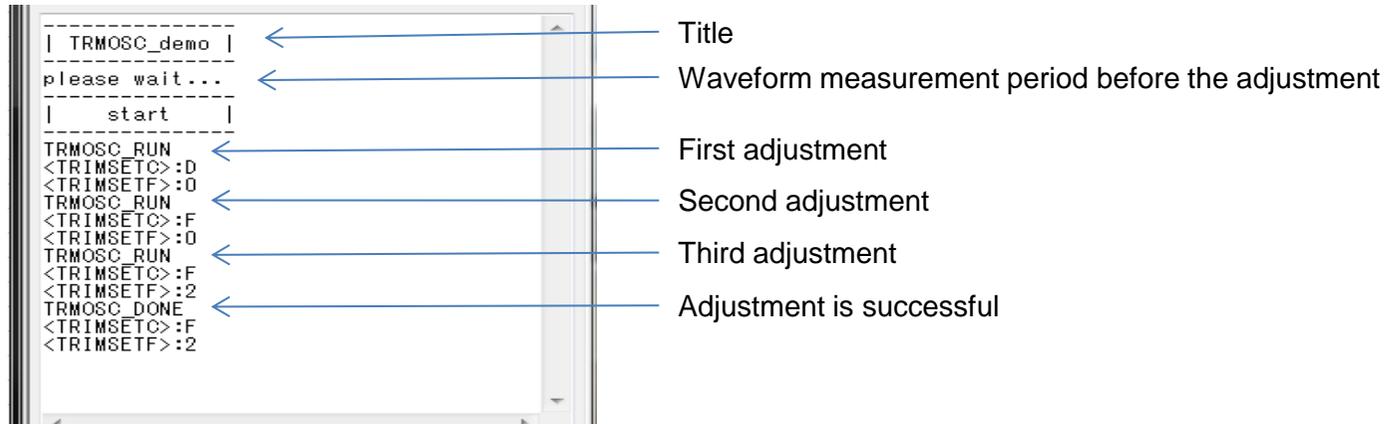|		
Reference Clock	: T32A01INA0 (PP3)	Input reference pulse(240Hz).
Output pulse monitor	: T32A03OUTA(PE2)	Output 5 MHz pulse by default.The adjusted frequency is reflected.
Timer A ch1	: T32A01CAPA0/1	Measure pulse width using capture function.

                                        The counter value is captured in :
                                             T32A01CAPA0 on the falling edge of the T32A01INA0 input pin.
                                             T32A01CAPA1 on the rising edge of the T32A01INA0 input pin.

Timer A ch3	: -	Generate pulse output from T32A03OUTA.

3. Basic Operation

1. When the reference clock is input, this program measure the frequency of the built-in oscillator by the pulse width measurement function o
2. The sample program calculates the error and sets an adjustment value to the register of the adjustment function for the built-in oscillator.
3. The adjustment result is output to the terminal software.

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| TRMOSC_demo |                          Title
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please wait...                           Waveform measurement period before the adjustment
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|    start     |
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TRMOSC_RUN                               First adjustment
<TRIMSETC>:D
<TRIMSETF>:0
TRMOSC_RUN                               Second adjustment
<TRIMSETC>:F
<TRIMSETF>:0
TRMOSC_RUN                               Third adjustment
<TRIMSETC>:F
<TRIMSETF>:2
TRMOSC_DONE                              Adjustment is successful
<TRIMSETC>:F
<TRIMSETF>:2
```

4. Monitor output signal of PE2(T32A03OUTA).

Specification of the output signal:

Adjusted frequency(expectation)	: 5MHz
Internal oscillator	: 10MHz
Source clock φT0	: 10MHz
Reverse T32A03OUTA at 10MHz	: 10MHz/2 = 5MHz

4. Note

Nothing.