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| MMP/ITP v5.40 Release Note | | February 17, 2020 |
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Summary of Release v5.40: Profiler firmware release v5.40 contains the following.

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| I. Bug fix | Applied a critical fix that resolves the Real Time Clock (RTC) bug by using the correct time base of 2000. |
| II. New feature | Implemented real time clock maintenance routines to detect and recover from unexpected RTC problems. |
| III. New feature | Added a Profile-Independent Telemetry Session (PITS) to the sleep loop. |

I. Bug Fix: In Release v5.40 the Real Time Clock (RTC) uses the correct time base of 2000 rather than a time base incorrectly referenced to 1900. For more detailed information, see Technical Support Bulletin 2020-03.

II. New feature: In Release v.5.40, in the rare event that a time error is reported by either the CF2 real time clock or the more precise Maxim DS1306 real time clock, the MMP/ITP will restore the best estimate of the correct time to both clocks.

If a time error is detected, a forced watchdog reset occurs. If a time error is detected during a profile, the profile is terminated, and the sensors shut down before the watchdog reset. For more detailed information, see Technical Support Bulletin 2020-03.

III. New feature: Release v5.40 includes a new Profile Independent Telemetry Session (PITS) in the firmware sleep loop. This feature starts an emergency IMM session if a session has not occurred in the programmed count (in days, hours, or minutes). The IMM session behaves the same way as a scheduled profile end IMM session (for example, 3 wake up attempts). Count is programmed in 20 minute intervals (20 minutes is the minimum).

The Profile-independent telemetry interval is set on the Advanced Interface menu (see Figure 1). The default settings are 'Enabled' and '2' days, '0' hours, '0' minutes'. To change these settings, complete the following steps:

1. From the Main Menu, type *A* and type the password *adv*.
2. Select option <Y>, 'Profile-independent telemetry interval'.
3. Change the enable/disable setting if needed.
4. Enter the profile independent telemetry session interval in days, hours, and/or minutes.
5. Accept the values and type *X* to exit and save the changes.

For more detailed information, see Technical Support Bulletin 2020-03.

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Config: MPP_IM_CM_CT_MP_PA_SC                               CF2 V5.40

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                Pattern Profiler
                Advanced Interface
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                Mon Feb 24 13:10:45 2020

<0> full Speed                0.250 dbar/sec
<1> pressure Rate threshold   0.000 dbar/sec
<2> pressure rate Time limit   60 seconds

<3> Sensor warmup             120 seconds
<4> Sensor warmdown           120 seconds
<7> Configure active sensors   A-C--M----
<8> Configure offload queue    A-C--M----

<A> Annunciate comm traffic    NO
<B> Backtrack iterations       3
<D> Display verbose messages   NO
<F> IMM use Force capture      YES
<G> Get pressure during ramp    NO
<H> History reset
<I> Infinite deployment        ENABLED
<J> use Slower uart clock      YES
<K> IM ACK|NAK|ETK reply timer 100 seconds
<L> IM Listening loop timer      120 seconds
<M> profiling Mode             PATTERN
<N> adjust profile couNter     -1
<P> caPture file enabled       NO
<S> IMM configure Surface      NO
<T> Terminate profile in ramp   NO
<U> Ramp duration              30
<W> IMM send Wakeup tone       YES
<Y> Profile-independent telemetry interval 2 Days 0 Hours 0 Minutes

<X> Save changes  <R> Reset factory defaults  <^c> Cancel changes

Selection [] ? y
Enable profile-independent telemetry session [Y] ?

Enter the profile-independent telemetry session interval:
Days (0-14) [2] ? 0
Hours (0-23) [0] ?
Minutes (0, 20, or 40) [0] ? 20
Accept values? [Y] ?
```

Figure 1: Profile-independent telemetry session