Quarterly Newsletter

Spring 2017

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Introduction

APEC 2017. As we mentioned in our early email news flash, APEC 2017 in Tampa was a big success for the PMBus organization.

The PMBus booth had constant visitors, driven primarily by product demos from three of our member companies. Artesyn Embedded Technologies showed their new iMP 12KW medically certified, modular ac-dc power supply. Ericsson Power used a smart phone app to control their high-power density DC/DC converter for base station applications. And, the Intel team used PMBus to monitor telemetry on an AC/DC Front End supply in the data center.

There were many curious visitors who stopped by the booth to gain an understanding of the PMBus protocol, learn about the consortium, and the benefits of becoming a member. As you will read later in the newsletter, the publicity afforded by the booth has already generated new membership interest. The booth also provided a convenient meeting ground for networking amongst representatives from our 40 member companies.

The PMBus-sponsored Tuesday Industry Session (IS04) saw large attendance and generated many technical questions and discussion. The session included 7 technical presentations on PMBus implementation, for which a short description of each is outlined below:

- The Circle of Life: Using PMBus from Start to Finish
- Challenges and Solutions for Multimaster/Multi-Slave PMBus Systems
- Direct Format Usage for PMBus Data Transfer
- Enabling In-Circuit Programming of Power Solutions via PMBus
- Ericsson's Config File Format and Loading Method for PMBus Devices
- Monitoring and Optimizing AC/DC Power Supply Performance for Different Applications Using PMBus
- PMBus Application Profiles for POLs

You can click here to view all of the papers on the PMBus website.

Thanks again to participants and attendees for your support and interest!

Configuration Files.
Over the last several months the Working Group has been reviewing formats for a PMBus Universal Config File. The details are near finalization, and the team expects ratification in the near future. Please stay tuned for the announcement of the formal document.

Application Profiles.
As previously mentioned, the Application Profile for DC/DC Point-of-Load converters was released in March and presented at the PMBus Industry Session during APEC. You can view the full presentation by clicking here.

The Working Group is dedicated to continuing its work on defining and refining application profiles. The following applications are being studied for future consideration:

- DC/DC Isolated Converter Module Profile
- AC/DC Non-Server Power Supply Profile
- Update of the present AC/DC Server Power Supply Profile

The Working Group solicits your thoughts and inputs regarding other applications and priorities.

Please provide your feedback or suggestions regarding the process to admin@smiforum.org.

Membership Updates

We would like to welcome our newest member to the PMBus consortium, Monolithic Power Systems. Headquartered in San Jose, California, MPS produces high-performance, integrated power solutions for industrial applications, telecom infrastructures, cloud computing, automotive, and consumer applications. The addition of MPS to the ranks brings our 'Full Membership' count to 41 companies.

Congratulations are also in order to Micro Computer Controls Corporation, based in Hopewell, New Jersey, our first official partner under the new "Tools Membership" program. MCC supplies a broad scope (no pun intended) of bus monitors, software and diagnostic tools that support the development of PMBus-compliant products.

There are several other 3rd party companies actively engaged in the development of support tools for the PMBus microcosm. As their products are released to market, we expect they will officially join the list of PMBus Tools Members.

Interested in joining PMBus? Get a detailed description of the System Management Interface Forum and membership benefits by clicking PMBus Organization Overview. Or, just send an email to admin@smiforum.org to get immediate answers to specific questions.

New Product Announcements

There were no new products announced by our member companies during the quarter. Our apologies in advance if your company released a new product but we missed it, in which case you can notify us and we will be sure to include it the next newsletter publication.

If your company has new products that you would like to be included in our next newsletter, just send an email with the subject line "new product(s)" and the details to admin@smiforum.org. Then watch this space for updates.

Website Updates

Since our last newsletter, members have made 28 additional postings to their PMBus-compliant *Products* page. A total of 315 items were listed at the end of May. Displaying your company's products on the website is one of the valuable benefits of being a member of the PMBus consortium. Be sure to contact us if you would like to update your company's product listings, and join the other 20+ members who take advantage of this benefit.

You can also change or add a "Featured Product", which includes graphics on your company's *Products* page. Just click here to see an example on the GE Energy product page which was recently updated. Please send any request for changes to admin@simforum.org.

Promotional Activities

For the last quarter, Promotional activities were focused around the recent APEC Conference. We will continue our efforts during the coming quarter to make sure that PMBus remains highly visible in the industry. Please feel free to contribute by contacting us if you have ideas for articles for publication or other ideas for publicity. We stand ready to contribute any resources that could assist in the effort!

Upcoming Events

ESC 2017. In conjunction with Excelsys Technologies, PMBus has submitted to present at the Embedded Systems Conference in San Jose, CA on December 5-7. The theme is "Using PMBus for Making System Power Part of the IoT (Internet of Things). The goal is for system developers to learn about the PMBus open standard as method to communicate with power supplies, battery systems and general power sources to enable an embedded system to communicate system health and perform diagnostics and remote systems management.

APEC 2018. PMBus will be exhibiting in next year's APEC Conference being held in San Antonio, Texas on March 4-8. While we have not yet started preparations, we do plan on having product demonstrations and technical presentations by our member companies. We encourage anyone interested in participating to let us know as soon as possible so that we can begin planning---similar to last year, we expect the spaces to fill up quickly. For those of you planning to attend, be sure to visit us at booth #440.

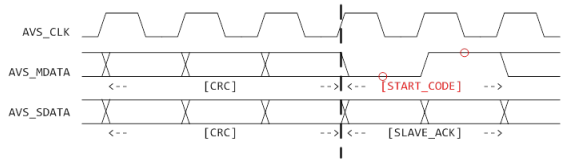
FAQ

The newsletter's *Frequently Asked Question* section includes a selected question which has been received along with the detailed answer.

Question: *What should be done to ensure that the AVS_DATA line returns to the idle condition? Or, What should be the master timeout to understand a low level as an interrupt (alert)?*

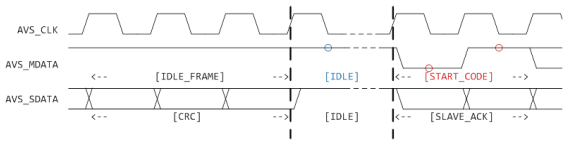
Answer: The Master must complete the last clock period at the end of a transfer with a rising edge. Otherwise, what it looks like to a slave is that the clock was frozen low during the second half of the last bit.

In back-to-back frames, the boundary between two frames is a rising edge of the clock:



When the master wants to leave idle space between frames, it must complete the last frame of one group (all the way to the rising edge that completes the clock cycle for the last CRC bit), then suspend the clock by driving it low (which allows the slave to cleanly go into idle by sampling a '1' where it would have expected a '0' as part of the '01' start code), and resume the clock when necessary to send the '01'.

Refer to the circles inserted into the AVS_MDATA timing diagram. They show the moment when the slave samples that line and changes its state. Clearly, the slave cannot detect the idle condition if the falling clock edge is not present, and it needs to be at Idle to make the decision to issue an interrupt.



Have a question about the PMBus or SMBus specifications? The System Management Forum provides free support. Send your question to techquestions@smiforum.org and a PMBus or SMBus consultant will respond.

Other Items

The PMBus logo is a registered trademark of SMIF. PMBus adopters who are SMIF members in good standing are allowed free, unlimited commercial use of the PMBus name and logo. Proper usage of the name and logo is important in order to retain our rights. Please encourage your company's marketing communications department to collaborate with SMIF whenever there are publications or questions.

Please remember to use the ™ symbol when referencing PMBus and AVSBus in data sheets, press releases or other written material. It does not have to be done for every occurrence, but should be included in any title or blurb and with the first usage in the main text for articles. The logo graphics for web postings and hi-res print can be downloaded from the resources section of the PMBus website.

Contacts:

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