

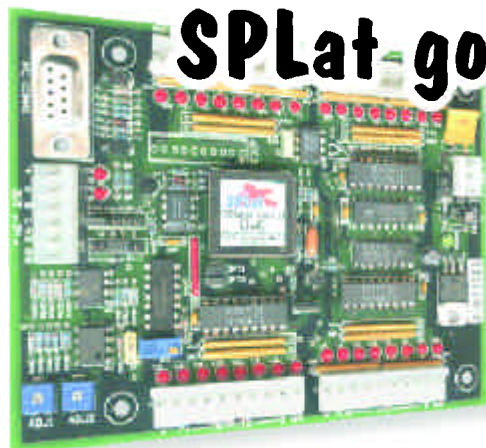
SPLat Happenings

A newsletter about machine control, automation, business and the Universe in general. Dedicated to the proposition that SPLat happens.

March 1999

You asked, we listened

SPLat goes analog, gets more I/O



The new OEM36 sports 2 analog inputs, 2 analog outputs, 32 digital I/O points, plus a raft of innovative features to make it more versatile and cost-effective.

It's not our intention to make this newsletter unbridled propaganda for SPLat. So please forgive us, we're so excited about the latest SPLat board we can't help but feature it. (We'd be pretty daft to tuck it down the bottom of the back page, wouldn't we?)

The OEM36 came about as a direct result of our participation in the Automate 98 exhibition last October. From the hundreds of inquiries received during the exhibition, two requirements were

merciless interrogation

dominant: More I/O and analog capability. The need for analog was particularly vexing, because analog can bump up the cost dramatically and requires, by implication, more computational capability than SPLat was endowed with. The need for larger (digital) I/O capacity was also challenging, simply because

some people wanted "24 in, 2 out", while others wanted "1 in, 22 out". What should we do, just forge ahead and make a board with 24 in and 24 out?

One of the things we determined by merciless interrogation of exhibition visitors, was that while they wanted analog capability, the accuracy, speed and resolution requirements were pretty relaxed. We also determined that very often all that's needed is to know if a quantity is above or below some predetermined value. Several users asked for user-set

More next page ..

Distribution Deal

SPLat gets national distributor

We are delighted to bring you news of a national distribution agreement we have just entered into with AVH Electrical Engineering Co. Pty Ltd.

AVH is a major distributor of electrical and control products with sales offices in Vic, NSW, Qld, SA and WA. The agreement also covers AVH sister company, Omega Power Equipment Pty Ltd, who distribute to electrical wholesalers and trade outlets Australia-wide.

Having a national distributor will allow us to concentrate more on developing new SPLat products and providing customer support. The agreement will not affect existing customers or our present network of resellers.



SPLat co-developer David Gibson (right) shows off the new OEM36 (see lead article) to Mr Zia Islam, General Manager of AVH and Omega Power.

Name the Plant Contest

SPLat mascot named

In the previous issue of SH we ran a contest to name our SPLat mascot, a 4.8m rubber plant. (It's now actually nearer 5m, having put on a growth spurt in the Aussie summer heat). We received entries from all over the world. And the winner is ... Tim Douglas of Collinsvale in Tasmania. Tim won a SPLat SL88A board. We wanted to fly him over to be pictured next to the newly named "SPLant", but somehow the budget wasn't there. Instead we asked Tasmanian SPLat reseller Active Electronics to make the presentation and take a photo of the solemn occasion.

Tim is an instrument technician with considerable experience in process and machine automation, who has developed a healthy dislike of ladder logic. He currently works for Pasminco, a major mining company. He plans to use his prize at home for a combined burglar alarm, bush fire



Tim (left) receives his prize from Phil Taylor of Active Electronics, our Hobart SPLat reseller.

sprinkler system and sun tracker for his photo-voltaic generation system.

New contest

Win a SPLat OEM36 analog board, get free Internet advertising

We have heard of quite a few interesting applications of SPLat, but now we want to know which is the most interesting of them all. So drop us a line describing your SPLat app. The best ones received will be featured on our Internet site.

The entry we judge to be the *most interesting story* will win an OEM36. We need a description of what your SPLat does and the story behind it, and a photo that illustrates the application. By

entering you are giving us your permission to publish, *the most interesting story* except we will hold any programming details in confidence. Just mail or email

your entry to us (address details on next page). If you email a photo, please crop it fairly tight and use scanner settings that give a 24 bit

colour bmp file of about 500K and zip the file (if you have a digital camera use the best resolution and send us a raw jpg file). Entries close April 15th.

SPLat masters origami!

DES is a system developed by Envelopments, located in Fitzroy, a suburb of Melbourne. DES stands for Direct Easy System. It is a system for automating direct mailing. Properly used, direct mail is a valuable tool both for developing new business and for keeping in touch with existing customers.

Existing automated direct mail systems are suitable only for mail-outs of tens of thousands of pieces. DES is suitable for runs down to around 1000.

DES is based on a paper product that combines pre-folded envelopes and A4 letter paper into fan-fold stationery. This is printed, with full mail-merging capability, on a tractor feed colour inkjet printer. This gives an attractive letter and envelope that are rich in colour, with logo, photographs etc. The piece can be fully personalised to the recipient, a factor which research has shown can improve

**.. SPLat ..
costs less,
looks better,
does more**

marketing responses 4-fold or more. The DES burster and inserter machine (pictured) separates letter from envelope, folds the letter, inserts

it in the envelope and even seals the flap. DES is controlled by a SPLatMMI88microPLC.

An extra feature is that DES can selectively insert any combination of 2 additional loose-leaf inserts. The combination of inserts required is individually encoded onto each envelope during printing, in the form of 1 to 5 small marks that can be sensed by a fibre-optic photo sensor. The pulses from the sensor are counted by the MMI88 using the COUNT7 instruction, which was actually created for Envelopments.

If you received this copy of SPLat Happenings in our main mail-out, it was folded and inserted into its envelope by the DES system. So in a very real sense, this newsletter was brought to you by a SPLat! 

Will SPLat happen?

Y2K: beat-up or the end of the world?

As the ignorant fuel the hysteria, disreputable consultants jump on the gravy train and the plain stupid bury their heads in the sand, one thing is for sure, Y2K ain't going to go away for a while yet.

So, what does Y2K mean to you and your business? Unfortunately there are no clear-cut answers, but here are a few thoughts:

If it's not date-sensitive it won't have a problem. Take SPLat: No model of SPLat at present contains a clock or calendar in any form. It can't have a problem. The same applies to your electric toaster. Your VCR will not blow up on New Year's Day.

Some of the most common calendar chips (we use one in a data logger we make for someone), carry the year in two digits but will correctly make 2000 a leap year.

You won't get this humble writer in an aircraft at the critical time.

For your in-house computer systems, identify and concentrate on the mission critical applications and computers such as accounts and purchasing. A disrupted buying schedule could be fatal, while a problem with a word processor is likely to be merely annoying.



Envelopments industrial designer/engineer Tamas Hume (right) shows Microconsultants David Gibson how the front panel on the DES Burster and Inserter uses a custom graphics overlay on its MMI88 controller. The background poster depicts an earlier model that used industrial controls in conjunction with a conventional PLC. According to Hume The SPLat-based solution costs less, looks better and does more. Future models will use the SPLat OEM32, just released, to provide up to 8 optional loose-leaf inserts.

The NSW government Y2K web site is an excellent jump-off point for further research. <http://www.y2k.gov.au/> (Our Y2K compliance statement is posted on our web site) 

Frequently asked question

How many timers can I have?

Existing SPLat boards contain 8 timers (plus a precision pulse output generator in some models). However, it is perfectly possible to have more than 8 or 9 timing functions going at once. The trick lies in the programming. You can program SPLat so that one single timer ticks away, and the ticks are counted in several general data memories. That way one timer can generate 8, 16 or even more separate time intervals. The SPLat tutorial contains an example of this. Just look in the index for Program Example 2: Many, many timers. 

Tech Tip

One relay adds diagnostic indicator

Here's a simple idea that can hugely simplify field-repairs on your SPLat-controlled product.

Add a relay that switches the main power to all other controlled outputs, i.e. in the common return line for solenoids, other relays etc. Drive that relay off a SPLat output. That one output can now disable the whole machine (this assumes that no-power is the safe condition).

In your program, there will be places where a problem is easy to detect, say when an operation times out before it has completed (This was covered in "Don't wait forever" in the December 98 SPLat Happenings). At each such point in the program, turn off the enable relay and then start "flashing" one of the outputs. Flash a different output for each possible detectable fault condition. The output indicator LEDs have now become fault readouts. For the cost of one relay and one SPLat output you have a head-start on finding the problem in the field. 

SPLat goes analog

from page 1

timers, so on-board potentiometers would be useful. Opinion was about evenly split on voltage in and current loop in.

The final design has 2 analog inputs and 2 analog outputs. The inputs can be 0-10V, 0-20mA or from an onboard potentiometer. The inputs can also be used as programmable threshold analog comparators, so they can easily be used to set a high/low threshold. The

... some hard thinking ...

outputs are 0-10V, suitable for say controlling a variable speed drive. All in all an innovative set of features giving

maximum flexibility at a very attractive price.

We also did some hard thinking outside the square to resolve the digital I/O dilemma: Should we do lots of inputs, lots of outputs, or both? Our answer was to make half the digital I/Os capable of being either an input or an output. The end result is 8 inputs, 8 outputs and 16 points that can be either. This will cover 24 in/8 out through to 8 in/24 out, all in one board.

Finally, we had to provide some number crunching capability. After much deliberation (this particularly thorny question has been on the agenda for about 3 years!) we decided to go the whole hog and put in floating point arithmetic. Normally found only in top of the line PLCs, floating point will allow quantities to be represented with a precision of about 6 decimal places over a number range from 10^{-38} to 10^{+38} . This means is that you have little to worry about with loss of accuracy and scaling of intermediate answers.

The OEM36 will be available for shipment during April. Please contact us or check out our web site for more technical information. 