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OzFLARM News

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Some interesting facts and events:

- 3,000 FLARM units sold world-wide
- N.Z already trialing FLARM with good results
- Swiss army interested in using obstacle database for their Helicopters
- 4 comps this year in Oz targeted, N.S.W, JoeyGlide, Gawler Multi class nats and Benalla Club class Nats
- Special price for 1st 100 units sold—hurry, only 40 left

Inside this issue:

OzFLARM nears completion

Welcome to the first official publication relating to FLARM and ADS-B in gliding. OzFLARM is an all Australian made product which utilizes the tried and proven Swiss FLARM glider awareness system and combines it with our own micro which has unique display and alerting, as well as catering for future ADS-B technologies when they arrive. The OzFLARM unit is identical in size, and weighs only 90 grams more than the Swiss-FLARM. Our system operates on a different frequency to Europe, namely 921Mhz. The Swiss unit can be re programmed to this frequency just with a software change, however, the performance is slightly down due to the Swiss units being optimized for 825 MHz.

How many times have you seen this happen, or maybe haven't seen it and the other guy just shrugs it off as a "Near Miss!"

OzFLARM unit are 100% compatible with Swiss FLARM, even the updates sent out by FLARM will work fine on our unit. We also will send out updates whenever our display and audio alerting is modified. Additional to the alerting capabilities (covered in the next page) OzFLARM is also a data logger with pressure altitude as well as GPS. To download , you use our supplied windows P.C software, it will then convert the files to IGC for viewing under CU or other viewing software. Pal PDA's can use the internal GPS in OzFLARM for position information, as we send NMEA sentences, additional to this we also send NMEA FLARM sentences which allows your PDA to display FLARM targets. There are a host of ad on gizmo's for FLARM and OzFLARM, such as voice command units and additional cockpit displays for 2 seater gliders. More and more are introduced each week making FLARM one of the more exciting technologies in recent times, and having the most potential to save lives! Production will start in a few weeks in time for the N.S.W State Comps in November.

Lake Keepit to host first mass trial of OzFLARM in Australia.

The first large scale trial of FLARM will be carried out mid November at the Lake Keepit N.S.W State gliding championships. Just on 60 gliders will be fitted as well as 5 tugs. This is probably the first large scale single implementation of FLARM in the world. Lake Keepit was chosen because of it's close proximity to our location, allowing us to travel and spend time on site (I will also be competing). This will be a new experience for all of us and I am excited about this especially as it aids good airmanship (see and avoid). At the end of the week each glider has the option to purchase the units, Lake Keepit will advise you of the arrangement as there is some exciting news in this area. From my end I will be shipping power leads to the organizers to pre send out to competitors to fit their gliders. All you need is + and—volts, any connection will do as it draws only 60ma average, and will run down to 5 volts. The GPS antenna is internal, with an external 80cm whip for the transceiver. Velcro on top of the dash and that's it!

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specifications:

SwissFLARM unit, OzFLARM is identical in size except the antenna is at the rear, and the display is as shown on page 3

"OzFLARM will never replace good see and avoid techniques, this device is an aid to situation awareness only"

Size: 75mm x 110mm by 25mm

Weight: < 150grams

Antenna: 80 mm whip

Power: 5 to 28 Vdc 60ma Average, 100ma with all LEDS ON

Transmit Pwr: 10 Mw

Range:1 to 3 + Km's

GPS - 16 Channels uBLOX rec

GPS antenna - Internal, external option

Colour- Black, ABS Plastic

Mount– 2 Screws or Velcro

Notes: OzFLARM utilizes the 921 MHz ISM band, which is a range of frequencies allocated to low power remote control and telemetry. The risk of interference from other services is extremely low, given the short range of these devices. However, it could happen. You must ensure that any potential interference sources are reduced. Mobile phone could be a concern. Trial and error is the only test. If you have limited coverage or no coverage, try switching off devices in the air till it comes good. Do this with a mate flying along side, say 1km away. Shielding of cables can help, especially if a PDA is a known source. Try and avoid covering the top surface with anything metal, the GPS antenna is housed here. Remember, you can purchase external GPS antennas from us as well as a suction cap transceiver antenna designed to stick to the canopy away from the dash (right up front) Like anything 90% of the time it will run first go, no problems, the other 10% just be patient—we are here to help at as well.

Accessories

A range of accessories for FLARM have been developed by third party vendors. 2 that are available now are an external display and a voice alert module. The external display has a similar format to our standard display in that there is a compass rose and other indicators. This unit is designed to plug in OzFLARM via the general port connector. Power is supplied as well as data. The display can then be remotely mounted, ideal for 2 seater configuration. The limitation of this display is that it will not show green LED's (more than 1km) as it has only a red display. Still, they are cheap and offer a second display for a rear seat. Contact details are: www.ediatic.ch

The price is 55 Euro dollars.

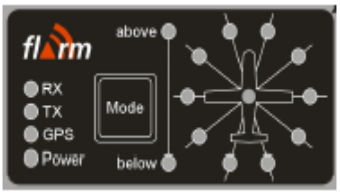
The second unit is an audio module, with voice alerts, example , "traffic at 12 o'clock' etc More information on the web at :

www.triad.ch. This would be particularly useful in tugs as it can be interfaced to your headset audio.

ADS-B add on receiver module, estimate mid 2006- www.avionicsaustralasia.com

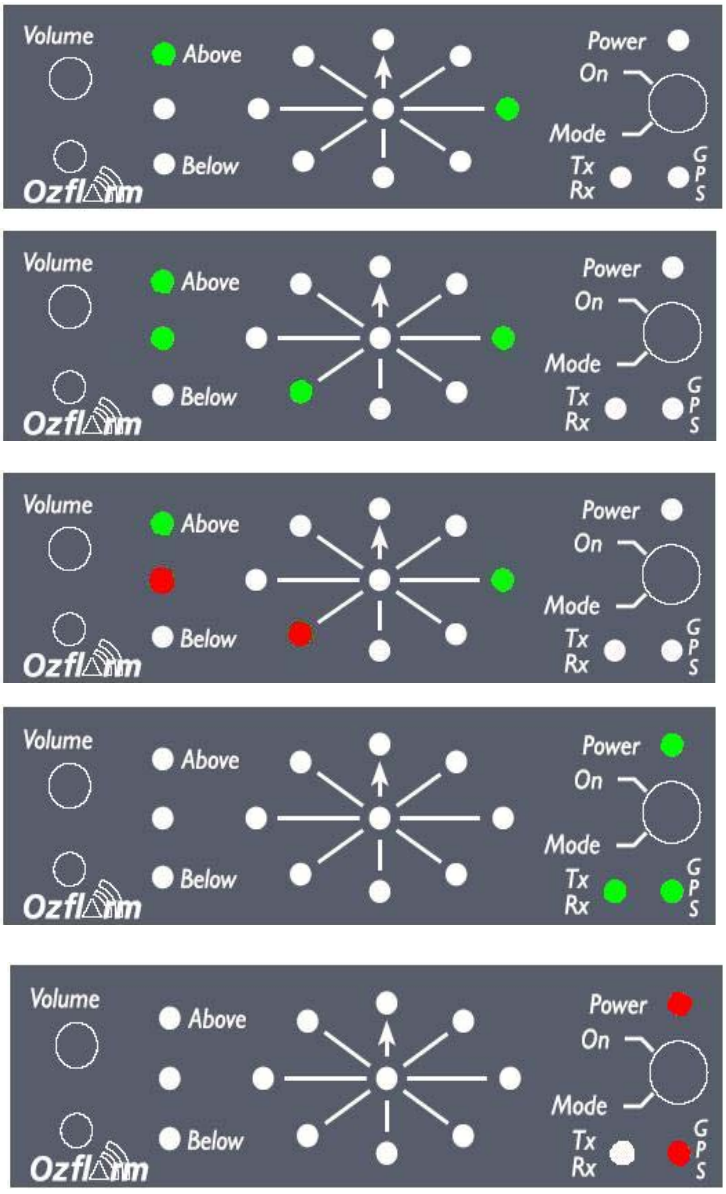
Price -TBA

Accessory Pictures



The many faces of OzFLARM

Basically, there are two methods of getting information across, the first is visual, the second is audible. Visual is broken up into 3 modes: On the compass rose, any green lit LED indicates a glider more than 1km away, there can be multiple targets. Pic one shows a glider 090 degrees, above (between 600 and 1,000ft or more) Pic 2 shows multiple targets , all outside 1 km. PDA displays show more information, such as precise altitude and position, remember, more and more PDA gliding software packages are using FLARM NMEA sentencing,. A well known Oz gliding instrument company is also looking at using FLARM messaging on their product—more on that as information comes to hand. The 3rd pic shows one of the green targets turning red. Steady red indicates a glider inside the 1km radius. Steady means there has been no detected potential issues. Blinking red followed by an alert (steady tone pulse , 1 second duration on / off for 3 seconds) indicates medium level threat, this could be a potential issue—take action now (good lookout, maybe zig zag to look around). Flashing red and 2 tone alert (High low , 5 seconds) indicates that FLARM has calculated a real threat , usually a 17 second pre warning—have a real good lookout and move away from the threat until you know you are safe. There may be times when it alarms, but you know the circumstance, i.e. your mate is flying across to join you and intends to break left to avoid hitting you—FLARM doesn't know this so don't get mad with it. You can, at anytime , silence the alarm by depressing the mode button down for a second, or turn the volume down by rotating the volume knob. DO NOT TURN THE UNIT OFF—you need no thought on this, it just takes one person to be silent to cause an accident! The next pic shows a normal power , GPS and TX/RX. Power will blink aprox every second green for normal. GPS will blink every time it receives a valid sentence, around once a second. TX/RX led will shine green when there are no detected gliders in range. The next pic shows a low voltage power supply problem, it will stay red. Bad GPS will also stay red, you must then assume FLARM is not working.



Some Facts about OzFLARM

This device will **never** replace good airmanship , None of us take any responsibility for other pilots flying their gliders safely or for not having seen a glider. OzFLARM in some instances may not alert you (poor GPS coverage, cockpit interference etc) we take no responsibility for this-you must still lookout! The range of OzFLARM varies between 1km worst case to 3 plus KM's , this all depends on position and mounting of antennas. The supplied antenna on the box will give you good performance. In some instances you might need to remote the transceiver antenna, we supply a full range of options. Try and locate the FLARM where possible out of direct sunlight. The unit has been designed to withstand +55 degrees plus, but why tempt fate, under the brow of the dash is a good spot, so long as the GPS antenna can have a clear view , again, you can use a remote GPS antenna if you wish, they are an add on accessory.

Electronics for Sports Aircraft

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RF Developments is owned by Nigel and Michele Andrews. Previous companies include Microair Avionics and Advanced Telemetry Products, Microair having the now famous Microair 760 transceiver. Our main work is in the area of Avionics both in R&D and in manufacturing. Another company we are involved in Avionics Australasia, has its main focus on ADS-B technology. My work with ADS-B started in 1998 with some VHF ADS-B trials. So, ADS-B and FLARM compliment each other. RFD is well placed to take advantage of this and will be offering both in the future (RFD for FLARMS , Avionics Australasia for ADS-B)

Additional to ADS-B Avionics Australasia will be manufacturing the Filser range of radios and Transponders here in Australia and sold at Australian prices. Filser have an excellent range of German designed equipment (see www.filser.de) which provide excellent 57mm equipment suitable for gliders and sports aircraft.

RFD produces the OzFLARM product at two locations, the first is a ISO9002 facility which loads the surface mount components and tests at board level. The second is our in house assembly at Lake Moogerah, in S.E Queensland. Here we assemble and test. Each unit is heat soaked and run for 48 Hours prior to delivery. Michele handles all orders and delivery. Shortly our web page will be upgraded to handle internet orders and support (estimate mid November). But for now orders can be placed via fax, email or phone. Shipping will commence on the 22nd of November (earlier if you are attending the N.S.W State comps at Keepit)

OzFLARM—Coming to a comp near you.

Cool idea!

Because OzFLARM transmits on a radio frequency, it is possible with a high gain antenna and amplifier to increase the reception 10 fold. This could allow a comp to display on the ground gliders within 5 or 10kms and up to 9,000ft on a map. Wouldn't that scare the pants of them , seeing all the gaggles. We will try and do this for Lake Keepit . The antenna and amplifier are under $50.00 and we should be able to use Ozi explorer for the map. Finish lines could also take advantage of this.

The Future

OzFLARM and Swiss FLARM are state of the art aircraft awareness systems, as well as providing a back up logger, barometer obstacle database and a GPS engine for your glide computer or PDA. The current units are continually being improved, namely in the software area. As better detection algorithms (that's software geek talk for calculations) are developed these will be passed on free of charge to the users. FLARM is a universal patent free protocol, which is published. RFD has a licence to use the core FLARM algorithms which we pay a royalty so as to ensure future updates. RFD will continue to improve the design, offering upgrades for future interfacing to ADS-B. This will allow you to display only, other ADS-B targets as green flashing LEDS (as opposed to steady green and steady red or flashing red) Your PDA's will be able to display ADS-B as well . This allows us to see other G.A aircraft with a range limit set by yourself, as ADS-B is typically line of sight. We will also offer the same to G.A aircraft, allowing them to see FLARM target using enhanced OzFLARM receivers (range increased to 10km's plus) . So in effect both systems can work together. If your club is 100 percent flarm fitted, why not try and get the local ultralights and flying schools to do the same. This system is well suited for ultralights up to 120 knots max speed and most flying schools who visit your field would appreciate another level of safety especially flying into weekend glider operations.