Member Newsletter

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The latest news from your digital radio society

INSIDE

UPCOMING EVENTS

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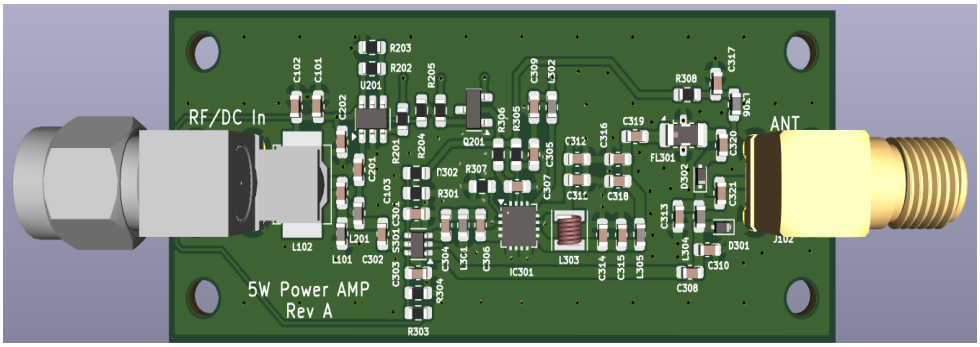

IP400 Power Node 5W Amplifier

President's Message

- Garvin Cole, VE6GFC

Some time ago I mentioned that I was pleased that our IP400 project had captured the interest of highly skilled Amateurs with backgrounds in RF architecture and signal processing, PA development and OFDM. I was glad that we validated this statement when we listed these individuals on our IP400 website. After all, we started with five people working on this project and now have sixteen. It is no wonder that this project has moved well past the half-way point, and we can see its ultimate success. Thank you to all who are making this a success and an ultimate value to our hobby.

Managing a project is never an easy task. We have been fortunate, as a not-for-profit Society, to be able to use software from Monday.com to manage our IP400 project. With multiple interconnected tasks and 16 people on the team across multiple time zones, we needed something to give everyone visibility into the project and the critical timelines. Monday.com has made this easier and made the project management task a manageable one. We thank them for their donation to the cause.

From the Board of Directors

Martin Alcock, VE6VH, Secretary and CTO

At the AGM last year we confirmed the pro tem appointment of Jerry Spring, VE6TL to be a permanent board member, and appointed Bruce Reynolds, VE6BR to the board, to round out the required five members.

Garvin Cole, VE6GFC, retains his position as President, and Wally Gardiner, VE6BGL, as Vice President. Martin Alcock, VE6VH, also retains his position as Chief Technology Officer, and leader of the IP400 project.

The main focus of the board this year is to provide management and governance for the development project, to ensure that we have the required audit trails in place for the grant funds, and that it is being spent appropriately.

What's going on

We decided to upgrade our AREDN network to the new standard on January 31st of this year.

AREDN developers decided to change their routing protocol from OLSR to Babel, for performance purposes. For some time, node firmware was produced that attempted to function in both modes, however that led to a lot of crashes and lost nodes. The new firmware now only contains Babel, which makes in no longer compatible with earlier nodes. If you have a node on the network that has not been upgraded, then it will no longer connect. Contact us at info@adrcs.org if you need help to reconnect.

Work on the next phase of the IP400 project is well under way. We are currently in discussion with a Vancouver-based contract manufacturer to restart the hardware manufacturing and distribution, we expect to be back in full production by the start of the summer, and we expect to be rolling out the IP400 power node at the same time.

Membership Update

Membership is open to any licenced amateur anywhere in the world, however board positions, due to local legislation can only be taken by Alberta residents. Applicants for board positions must have been paid up members for at least 2 years, or have participated in at least one of our projects, such as the AREDN network or IP400 project.

We are pleased to recognize members that have made outstanding contributions on our website on the membership page.

IP400 Project Update

Martin Alcock, VE6VH

The latest news is the completion of the long-awaited 5W power amplifier that connects to our existing mini nodes, and, in combination with a coaxial collinear antenna, can increase the power output to over 40 watts radiated, which is all that is required to establish a local mesh network. We are in the process of building some prototype units, with an anticipated rollout in early summer of this year.

The power node concept includes adding a POE (power over ethernet) adapter to the Pi Zero, which will be powered by from an off the shelf 24V AC adapter, using the same injector as we shipped previously. The node module has been revised to apply power to the amplifier via the coaxial connector, and the amplifier has automatic detection for transmission, and an antenna switch to change from receive to transmit. The same software runs on the Pi as before.

Some home brewing is required, as the antenna can be built from RG58 coax, and the node can be housed in off-the-shelf PVC pipe, which can be found at any plumbing store or home centre. The board stack and PA are mounted on a sled, which is inserted into the pipe, and a cap on the end holds it in place, through which the cable is fed.

The original vision for the project showed three initial phases, the first two being the Nucleo and mini nodes, and with the planned rollout of the power node these phases are now complete. We are now well into the third phase of development, which will establish our supernode, a custom raspberry Pi HAT that implements an OFDM mode, which will operate with off the shelf radios and existing repeater systems. This project is being co-developed with TARPN and will also result in a TNC that will be capable of this mode.

A custom driver for Allstar will enable a supernode to be retrofitted to any existing installation to add a new data capability to any existing repeater system. Completion is anticipated by the fall of this year, and more information is scheduled to be released in our next newsletter. Stay tuned.

Repeater News

We have acquired three 100 Watt power amplifiers that will be retrofitted to our two existing 900MHz repeaters, VE6NHM and VE6CQM, and the deployment of our third repeater, VE6IPR, will be undertaken pending the availability of the supernode and OFDM high speed data modes.

Further details will be announced when available.

Other Projects

The VHF weather announcement system has been retired by Environment Canada as of March 16th of this year, in favour of an internet-based service. It is the opinion of this society that this is a backwards move, as in a disaster cell phone and internet are the first to go down. This places the onus on us as amateurs to backfill this capability.

We intend to roll out something on the AREDN and IP400 networks, once deployed. At present we are negotiating to have access to warning information that we can propagate, that is providing the internet stays up.

A petition was circulated to keep it, however it only garnered 5,000 signatures, which was not considered enough to revive the service.

Feedback

We are always interested in hearing feedback from our membership, please use the contact form on the website to submit your ideas, they are always welcomed.