

DPRG RBNV Chat Record – August 8, 2023

Carl Ott

7:43 PM

Ted Harold Michael I Ray Doug P John K

Jim F - CalgaryAB

7:44 PM

Hello everyone & Y'All, from Jim F in YYC / Calgary Alberta Canada.

Carl Ott

7:44 PM

Hi Jim!

Carl Ott

7:46 PM

~7:43pm - Ted - Update on DW1000 / RF time of flight distance measurer board with ESP32. Experimented with setting 2 or more as anchor points, then the third on a rover can triangulate to get location / +/- 1/2 foot - once got past math issues - had some success - bounces around w/in about 1 foot radius - but worked. With just 2 anchors, is one direction is ambiguous (don't know which side of line you're on). Also - only measures 2 dimensional / have to factor in things like terrain slope.

believe could get 200m line of site range.

Carl Ott

7:47 PM

used line of cosines for one dimension, then $a^2 + b^2 = c^2$ for another dimension.

Carl Ott

7:48 PM

~7:47pm - Ted showed video of a 2014 SparkFun competition entry with a semi-automated Jeep...

Mickey Dean

7:50 PM

and this was nearly a decade ago! impressive

Jim F - CalgaryAB

7:52 PM

@ted GitHub link please

Harold Pulcher

7:54 PM

https://l.facebook.com/l.php?u=https%3A%2F%2Fmicrotresla.com%2F%3Ffbclid%3DIwAR22GRHjyce5bRiQ3UB8bw17bX2q5Hb_FjOpctcohJZxc9r9vQ4oUzLH18&h=AT0_gstQOYcqFTr4wdKrJAOCM60PmzINzIG1FNsrD8TwFEfFsOn3Qb_b3Q6_DrhxUTb1uGVzorpMg9q1xkCZyZ5ebqeGRxfcXYXej5gfuencv1YQJsd4XB5C-EtmAU1YGLIF6Q726L-9LE3KMIvmM

Carl Ott

7:55 PM

~7:52pm - Harold showed an outfit in Houston: "MicroTesla offers a non-magnetics calibration and non-magnetics research facility in Northwest Houston. The lab workspace provides 12K ft.2 with a non-magnetic gradient of less than 10 nT across the entire facility."

Harold Pulcher

7:59 PM

<https://www.youtube.com/watch?v=2fq95WvVHcg>

Carl Ott

8:02 PM

Harold shared that video - with cool robots to do various everyday tasks - slushy dispenser, a bar tender - iPhone claw machine - Pizza Hut, etc...

"worlds best vending machines"

Carl Ott

8:05 PM

FWIW - the MicroTesla company Harold mentioned connected to the Oil industry - serving "MWD companies" e.g. Measurement while drilling (MWD) systems monitor wellbore position, drill bit performance, and drill string orientation. Instruments in a module in the steering tool of the drill string transmit real-time data to the MWD operator. It is related to logging-while-drilling (LWD).

Michael Ivison

8:06 PM

<https://www.youtube.com/watch?v=mSvj31o5uVo>

Carl Ott

8:09 PM

~8:08pm - Michael showed progress on his Claw Machine -> STAR for Michael!

Video is from the blooper reel / since a gear popped off....

Carl Ott

8:11 PM

~8:10pm - Ray gave update on RF Module - based on SIM7080, has ESP32, socket for camera, socket for TF card, most all the SIMs have GPS / got that to work. Was able to use a high gain antenna from Tanners years back. Was able to send a text from the module.

even has a socket on the back for a single 18650 battery, also has power management / can put into super low power & wake up on interrupt to the ESP32...

Ted Meyers

8:12 PM

Here is the link to my git repos: <https://github.com/TedMeyers?tab=repositories> Looking at it, it appears that I haven't put much out to git in a while. I do have some interesting projects that I will add (including my Makerfab UWB project (TOF ranging)).

Carl Ott

8:13 PM

used the Tiny GSM library / so includes methods to send SMS / but doesn't have ability to receive. However Adafruit does have libraries to seek specific strings in a message / and white-list source numbers which you want to receive SMS from.

Module is only \$36.

Mickey Dean

8:14 PM

Thanks for sharing Ted, I am about to start learning best git practices so I can contribute in the near future, most of my contributions for now will be Obsidian Plug-ins

Carl Ott

8:15 PM

Supports GSM/ GPRS/ LTE. Ray uses Band 12 - 700 MHz (ie. old, repurposed TV spectrum)

Ted Meyers

8:15 PM

Cool, just note that I do not follow good git practices for my personal projects!

Mickey Dean

8:16 PM

I won't judge, I just want to know how for myself.

Jim F - CalgaryAB

8:17 PM

@Ted Meyers Thank You. 👍

Mickey Dean

8:19 PM

Ray can you post a link to that board, or have you in a past meeting already?

Jinx

Ray Casler

8:20 PM

https://www.amazon.com/dp/B0BW3NN54L?psc=1&ref=ppx_yo2ov_dt_b_product_details

Jim F - CalgaryAB

8:20 PM

Random Nerd Tutorial Link <https://randomnerdtutorials.com/lilygo-t-sim7000g-esp32-lte-gprs-gps/>

Carl Ott

8:21 PM

This is the board Ray used: LILYGO ESP32-S3 T-SIM7080G-S3 SIM7080 TTGO Development Board Supports Cat-M NB-IoT with GPS

Carl Ott

8:22 PM

Ray plans to use this as basis for a security system...

Carl Ott

8:25 PM

~8:23pm - Doug P - showed a 3mm aluminum test strip where he managed to mill 1.5mm pockets (Feed: 125mm/min, DOC: 0.2mm) and v-groove text on his milling machine! He took it slow and easy since is an expensive one flute bit.

Carl Ott

8:28 PM

Cut without chatter and good chips, was working great. Found that to make it work - had to electrically isolate the piece of aluminum from the frame. Found that when the bit touched the aluminum it would turn off- but as soon as he put cardboard between the aluminum strip and frame it was clamped to - then it worked ok.

Mickey Dean

8:43 PM

Doug, can you put that link in?

Carl Ott

8:44 PM

~8:43pm - showed a SparkFun board - can deliver centimeter level accuracy without needing separate RTK or NTRIP corrections... a GPS-22560 - <https://www.sparkfun.com/products/22560>

Mickey Dean

8:44 PM

ty Carl, I can't read it well on screen.

Carl Ott

8:47 PM

This describes the ublox PointPerfect service - which appears needed to make that module work properly..

<https://www.u-blox.com/en/product/pointperfect>

Carl Ott

8:48 PM

somehow related data services based on MQTT <https://portal.thingstream.io/pricing/>

You

8:49 PM

Single Flute End Mill 1/4" Shank, Upcut CNC Spiral Router Bit (\$18):

https://www.amazon.com/dp/B0C621DPC6?psc=1&ref=ppx_yo2ov_dt_b_product_details

Michael Ivison

9:01 PM

<https://www.youtube.com/watch?v=Fx24-IFthkq>

Crappie video I made.

Carl Ott

9:05 PM

~9:03pm - John K looking at arms - found TICO | Tic-Tac-Toe robot, powered by Arduino | Plot Clock remix

<https://www.thingiverse.com/thing:4946788>

Jim F - CalgaryAB

9:07 PM

<https://www.instructables.com/TICO-Tic-Tac-Toe-Arduino-Robot/>