



VirginiaTech

Institute for Critical Technology and Applied Science

Ted and Karyn

Hume Center for National Security and Technology

VirginiaTech

SDR Ionosonde P

Robert V

hume@vt.edu
www.hume.vt.edu

Contains Virginia Tech proprietary information

Hume Board of Directors Meeting



VirginiaTech

Institute for Critical Technology and Applied Science

Ted and Karyn

Hume Center for National Security and Technology

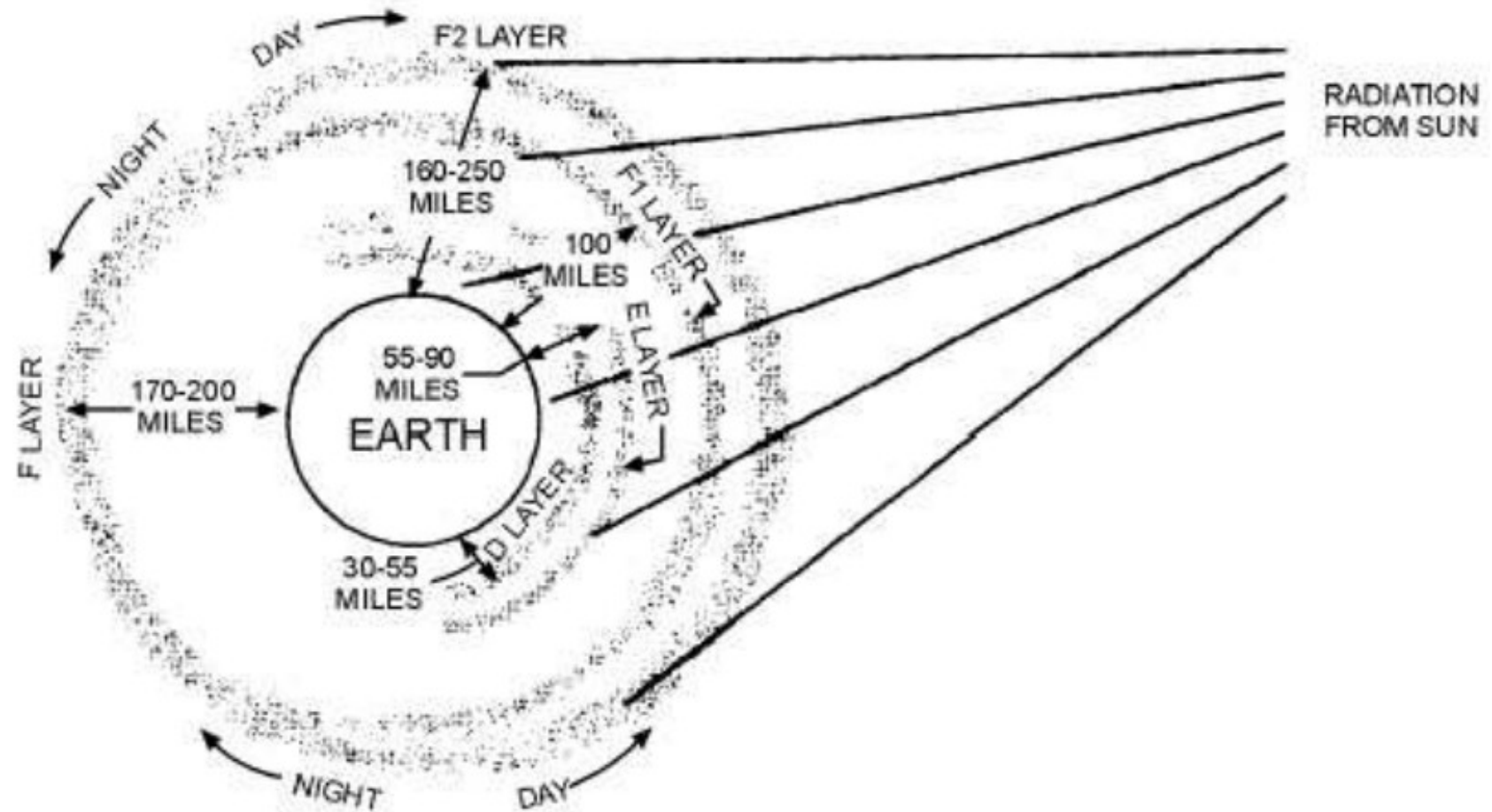
VirginiaTech

HF Propagation

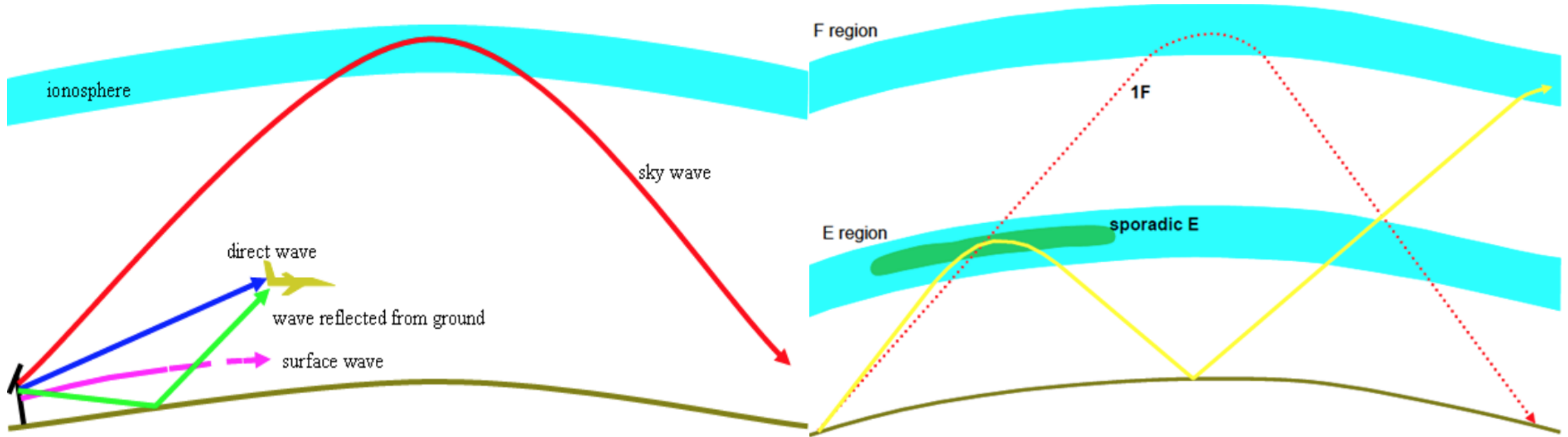
A quick look at how it all works

Simple model of the Ionosphere (Carl, K9LA)

- http://k9la.us/The_Structure_of_the_Ionosphere.pdf



Radio Propagation via Ionosphere (Aus. Gov.)



Recommend: <http://www.sws.bom.gov.au/Educational/5/2/2>



VirginiaTech

Institute for Critical Technology and Applied Science

Ted and Karyn

Hume Center for National Security and Technology

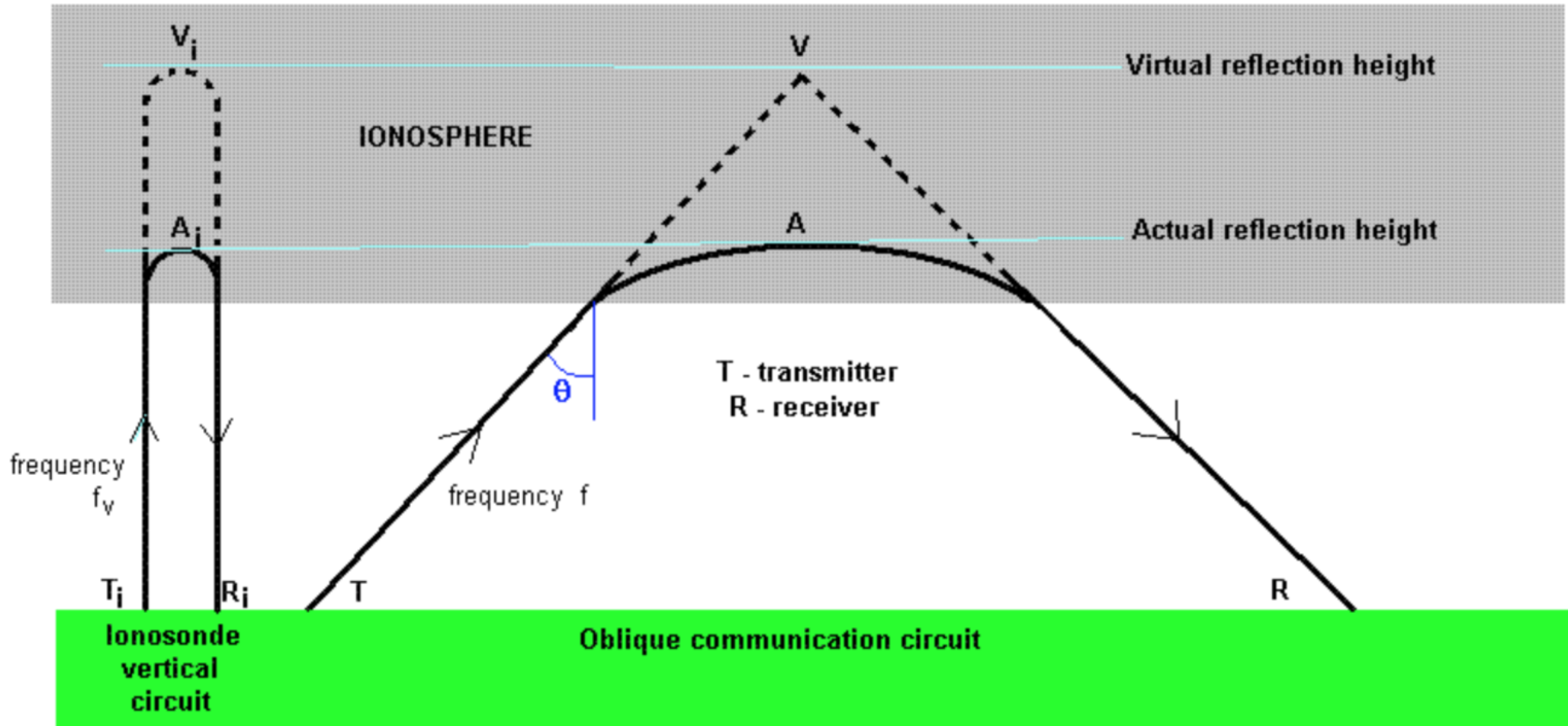
VirginiaTech

Ionosonde

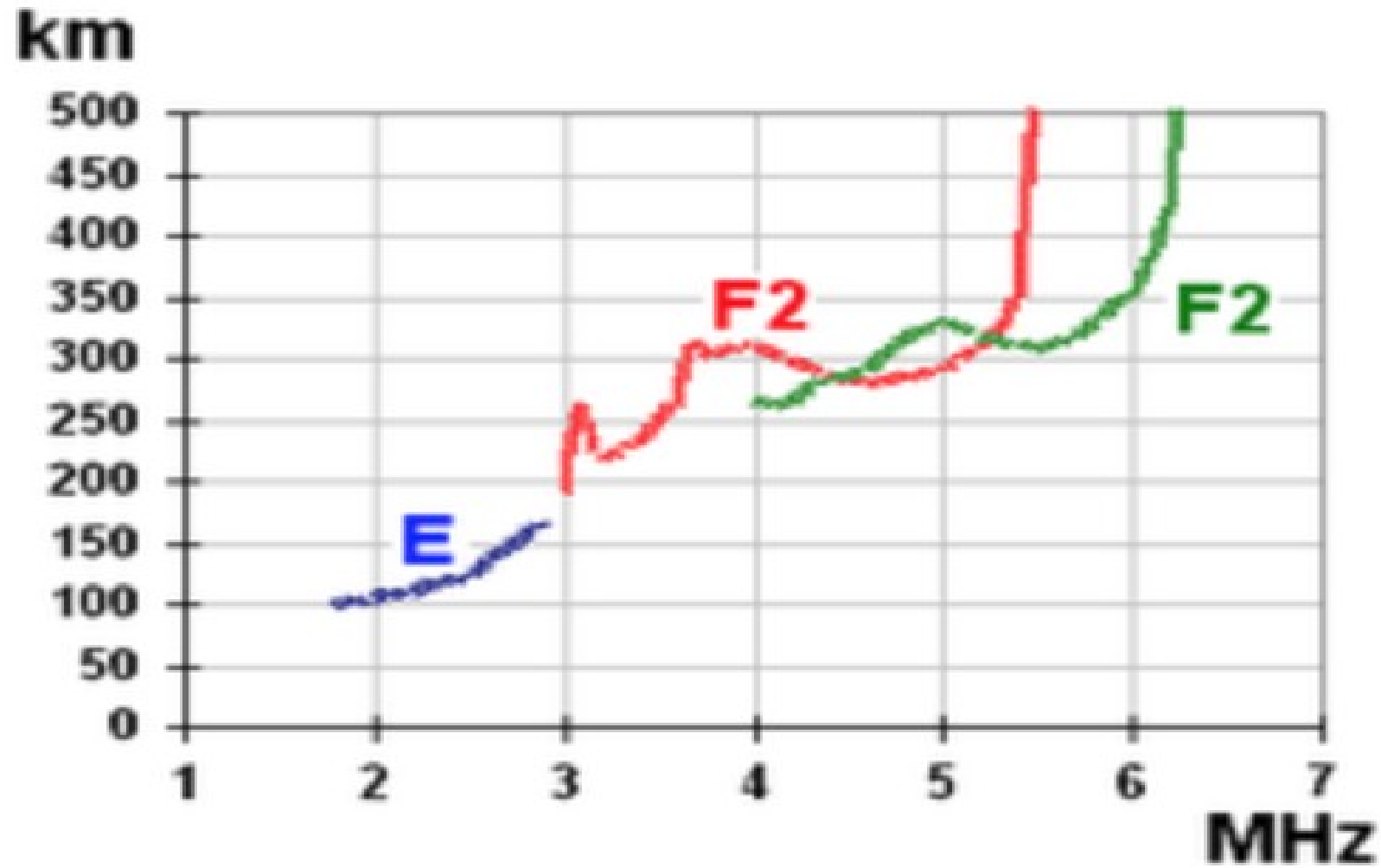
HF Ionospheric radar



Two simple views of an ionosonde in action



What kind of data do we get from ionosonde?





VirginiaTech

Institute for Critical Technology and Applied Science

Ted and Karyn

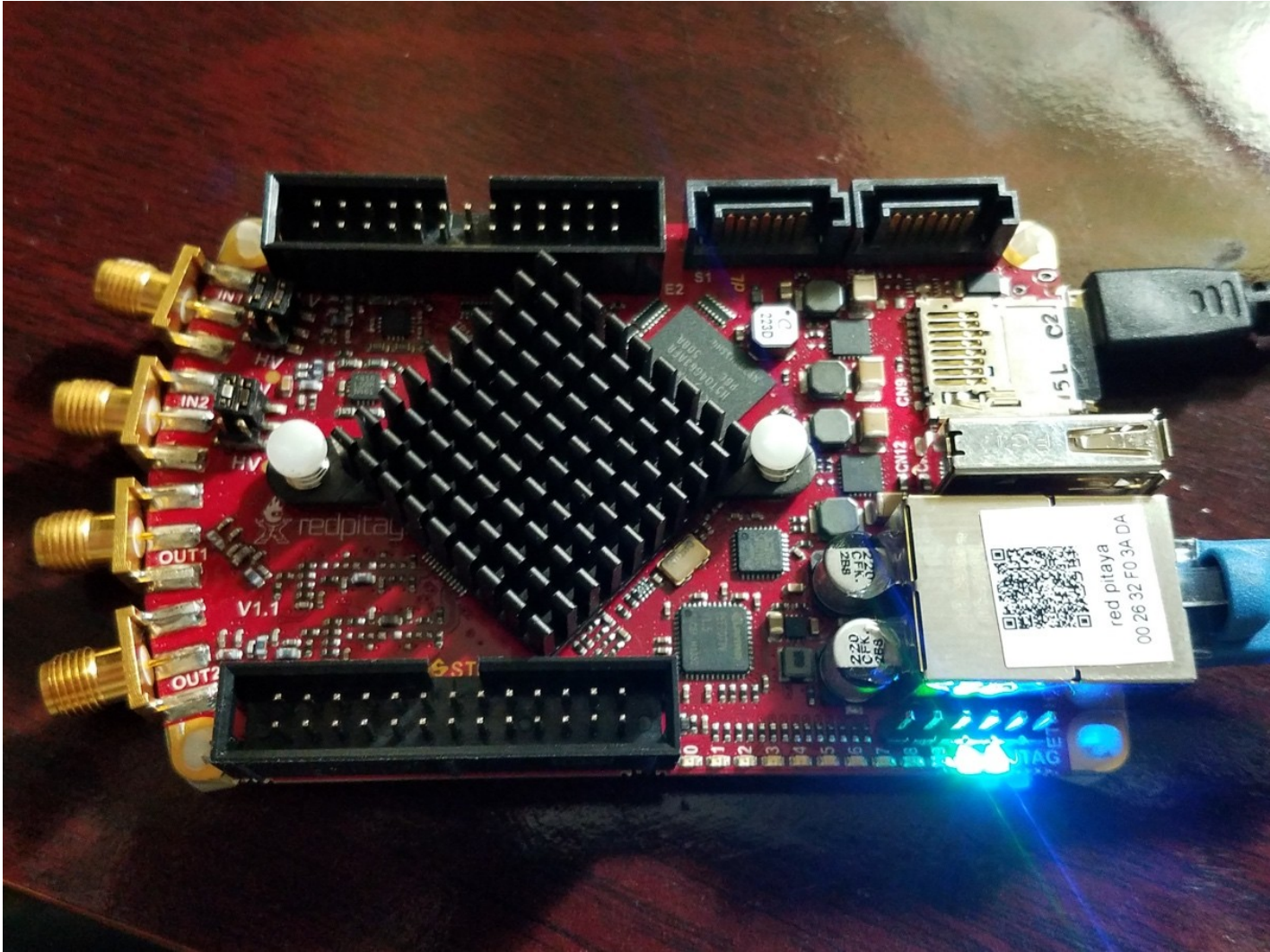
Hume Center for National Security and Technology

VirginiaTech

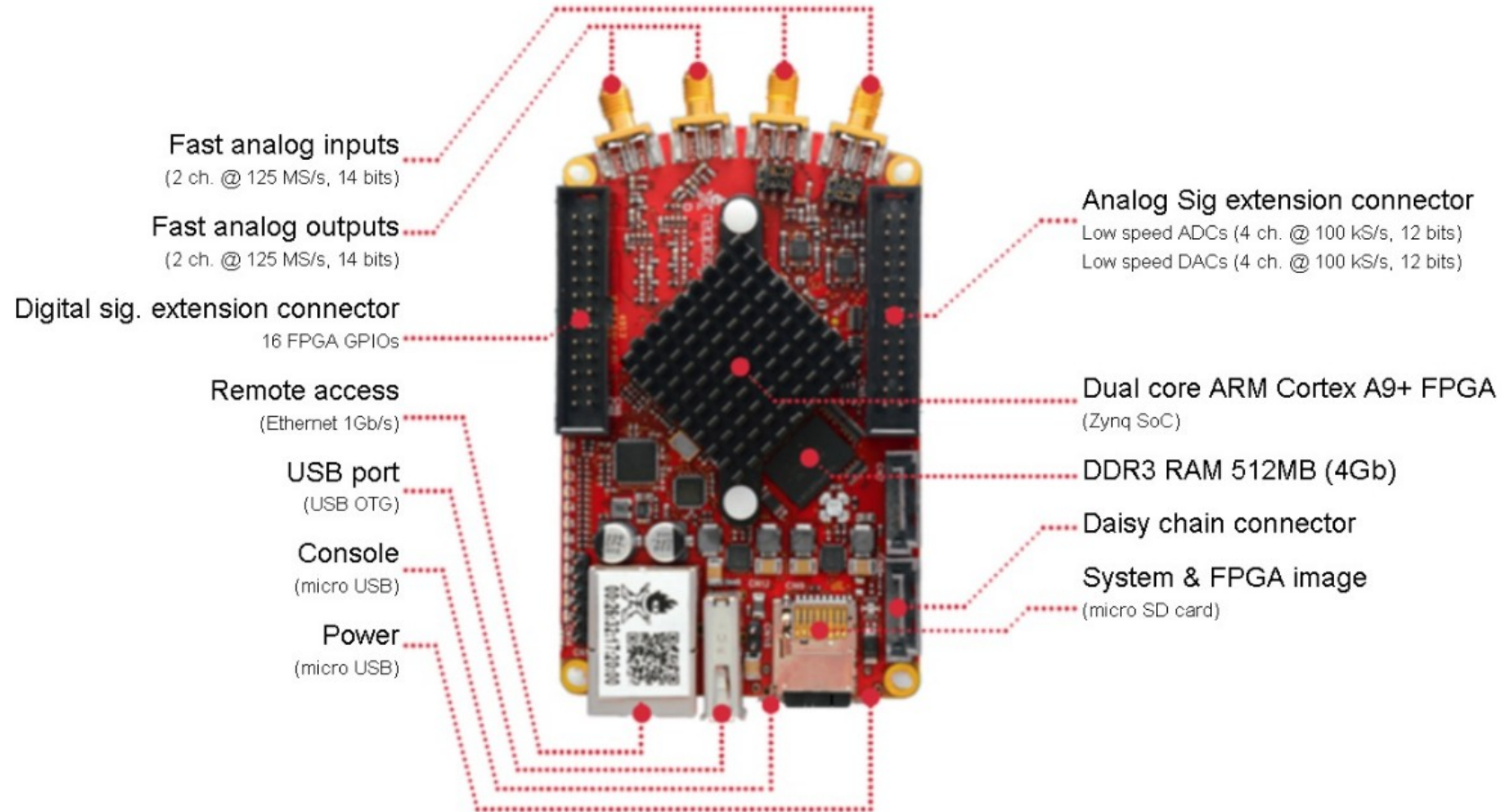
Our Ionosonde

Current implementation details and plans going forward

Red Pitaya SDR



Hardware Overview



Questions, contact

- Questions?
- Contact: Dr. Bob McGwier, rwmcgwi@vt.edu



Institute for Critical Technology and Applied Science

Hume Center for National Security and Technology