Communications and Electronics Section Meeting/Session

Session Chair: John DeRoo
Monday June 13, 2022 9:00am-1:00pm
Location: Lions Building

The Communications and Electronics Session covers all applications of electronics in caving including surveying, photography, wired and wireless communications, lighting, data logging and radio locations and also Ham radio demonstrations and applications.

Section/Session Schedule

Time	Speaker	Topic
9:00am	Sign in and introductions	
9:30-10:00	Brian Pease	A Miniaturized radiolocation beacon With a Ferrite Core Antenna for Easier Deployment in Caves

Abstracts

(listed in alphabetical order by main presenter)

A Miniaturized radiolocation beacon With a Ferrite Core Antenna for Easier Deployment in Caves

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Traditional underground radiolocation beacons use rigid wirewound loop antennas with a typical diameter of 1 -3 feet (1/3 - 1 meter) that must be carried through the cave by hand to the location point. Alternatively, a folding wire loop with a folding frame can be carried in a cave pack, but must be assembled before use. In either case, a separate box holds the electronics and a separate battery (typically 12 Volt lead acid) must be connected to it.

This small 3496Hz beacon has both the loop antenna and the electronics contained in a waterproof PVC housing 12" long (30 cm) and 2" (5 cm) diameter that easily fits in a cave pack. It weighs a bit over 3lbs (1.4 kg). It is powered by a little 2-cell 18650 rechargable lithium pack designed for Sten helmet lights that should run it for about 5 hours. It automatically stops running before the voltage becomes low enough to damage the battery. The magnetic Moment is ~5.3 A-T-m^2. It is designed to work with my "DQ" receiver. and should easily penetrate 250 ft (76m) of rock.