



ORSR, ORMR PIT Readers

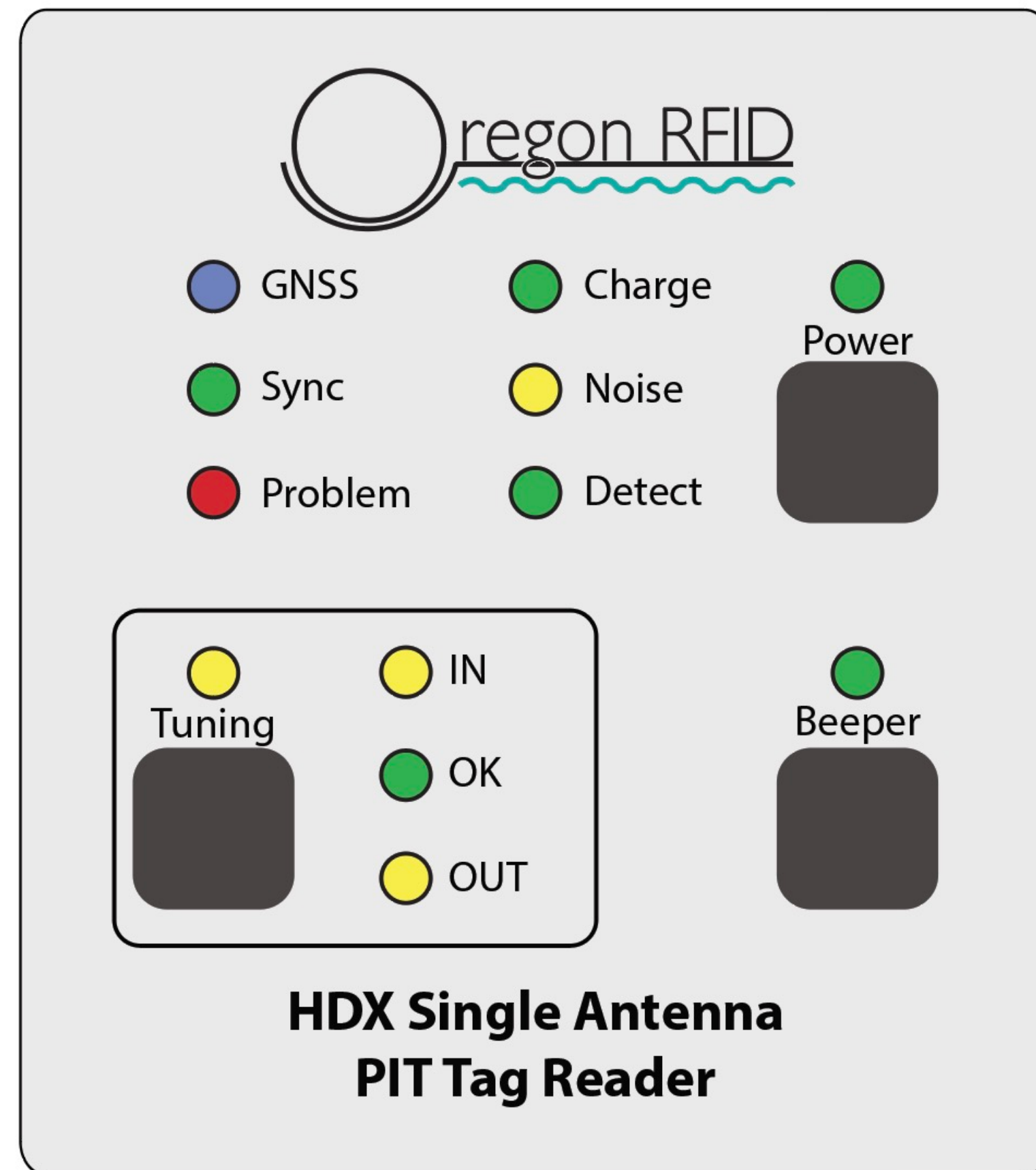
Sealed Enclosure



Waterproof connectors
Bluetooth on ORMR
Option on ORSR

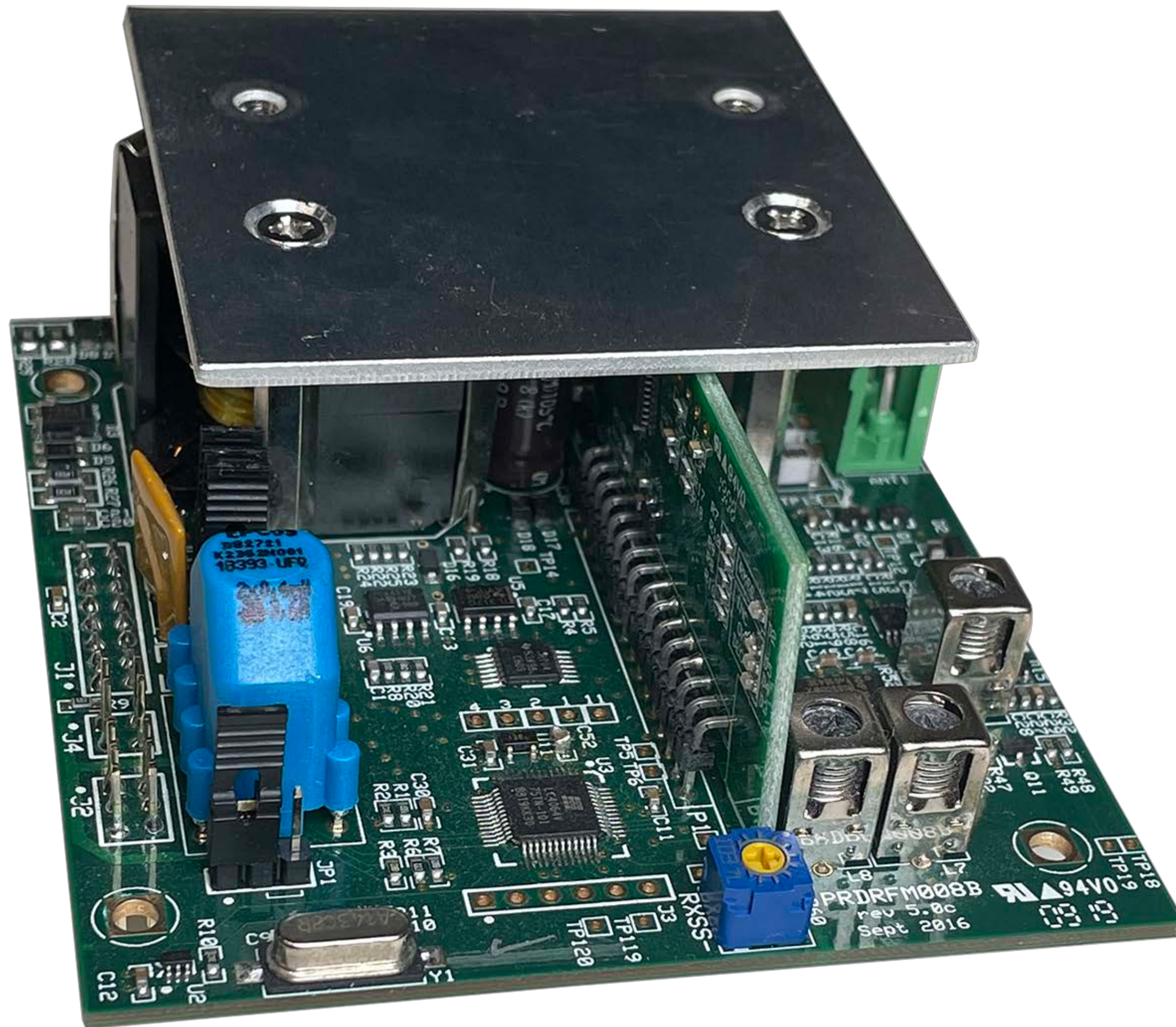


Antenna Tuning



Pushbutton tuning
TU command
Periodic tuning

RFM009



Antenna analysis

Measures

Antenna voltage

Antenna amps

ESR at 134.2 kHz

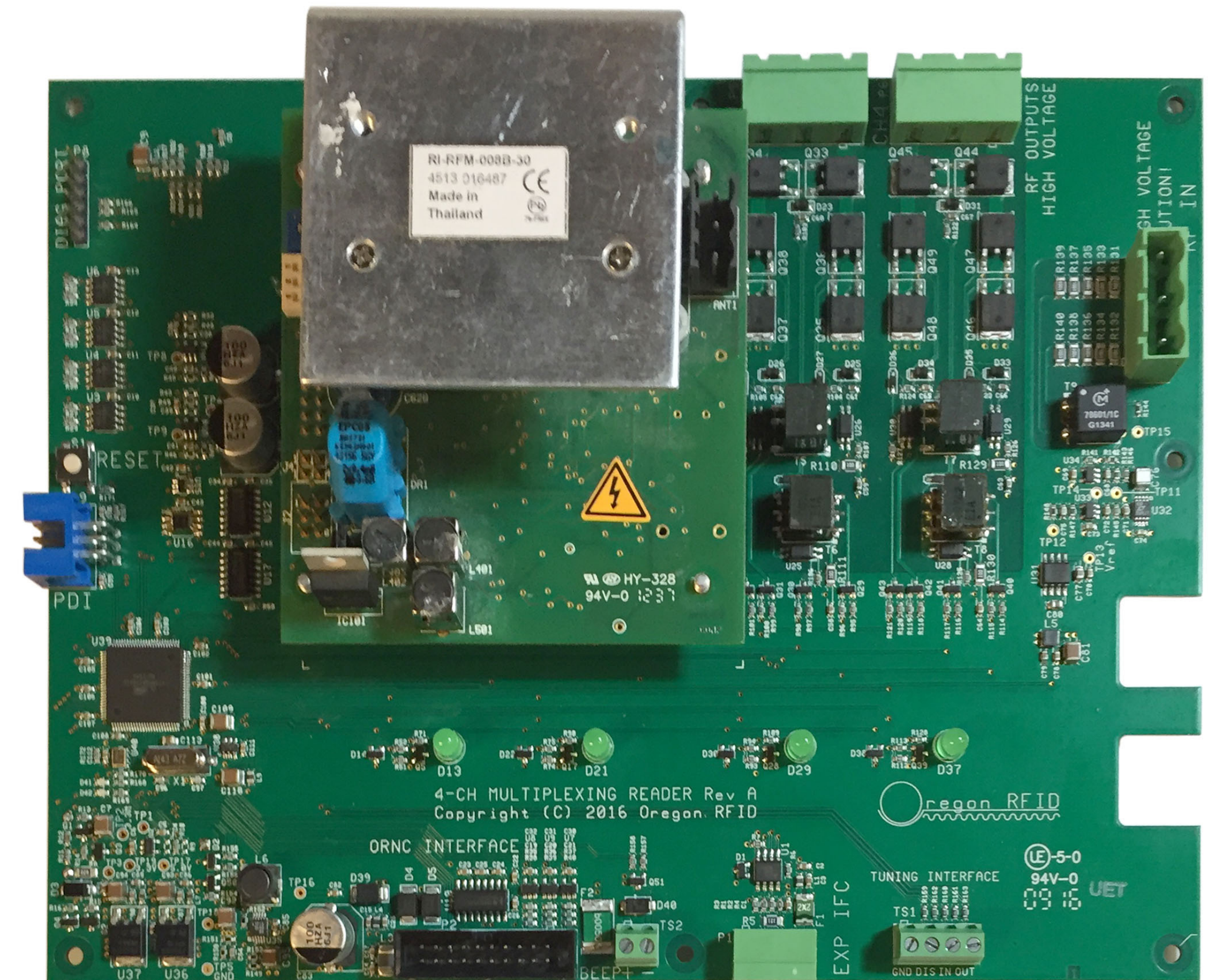
Q

1 to 40 scans per second

Fast scan mode

Redesigned Antenna Switch

Complete channel isolation
Unused channels short to prevent resonance



GNSS Receiver

Accurate time of day, within 1 μ S of UT
Location during mobile operation
Automatic HDX pulse synchronization

A = active signal (OK)

V = not valid

date

dd mm yy

```
$GPRMC,031153.000,A,4528.2604,N,12237.0970,W,0.0,0.0,040920,, ,A*76
$GPGGA,031153.000,4528.2604,N,12237.0970,W,1,06,1.5,083.18,M,-19.4,M, ,*5A
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time UT	location	number of satellites in view	altitude	HDOP
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DTY	Detection type, S summary, I individual, E event
TCH	Tag technology HDX, FDX, HF
TTY	Tag type A=Animal, R=Read only, W=Writeable, P=Phantom
PFG	Phantom flag (P or N)
TAG	Tag ID number
ANT	Antenna number (always 1 on ORSR)
ARR	Arrival date and time
TRF	Time reference G=GNSS, N=network, U=unreferenced
DEP	Departure date and time
NCD	Number of consecutive detections
EMP	Number of empty scans preceding detection
LAT	Latitude
LON	Longitude
ALT	Altitude in meters
SIV	Satellites in view
HDP	Location horizontal accuracy (m)
TSS	Tag signal strength
SPV	Power supply voltage
CPA	Power supply amperage during charge pulse
LSA	Power supply amperage with charge pulse off (listen)
EFA	Effective amps (weighted average of CPA and LSA)
CPT	Charge pulse time in milliseconds (HDC setting)
LST	Listen time in milliseconds (HDL setting)
ANV	Antenna voltage
ANA	Antenna amperage
NOI	Noise
DUR	Duration of tag detection event
CLS	Tag size class (12mm, 23mm, etc)
SCD	Site code
SPC	Output one space character

Metadata recorded on each detection

Reader Network

NL show list of readers

SL select one for remote console

RS422 - RPi interface

RS232 port will still work

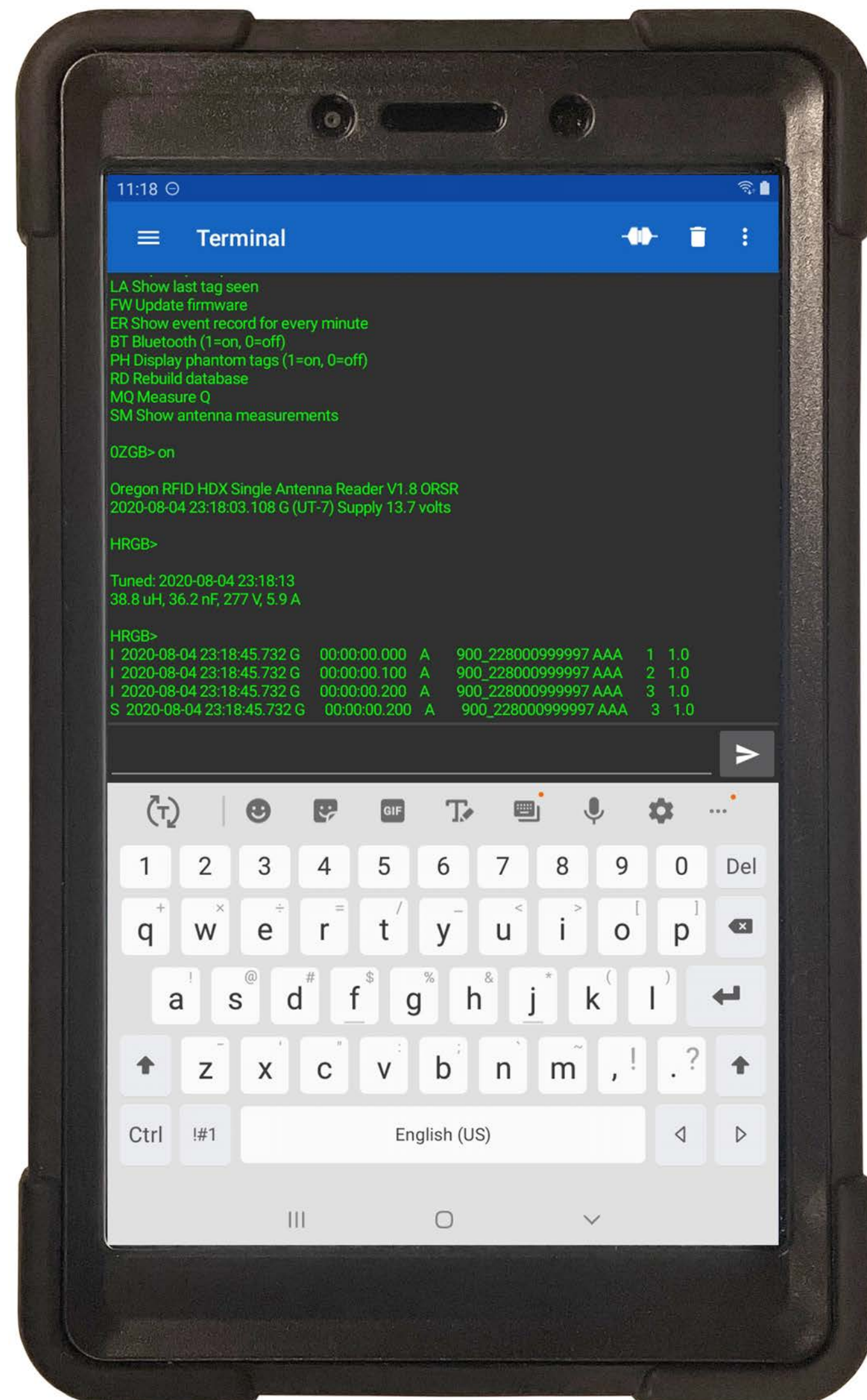
HZGB> NL

		Type	Version	St	Mode	SupplyV	EffA	New/Recs	Beep	Site Name
Host	MUX	ORMR	V1.999	OK	Z	13.6	0.1		1	Multiple Ant Reader
1	SGL	ORSR	V1.999	OK	R	12.4	0.1	25 / 430	0	Single Ant Reader
2	HFR	ORHF	V1.999	OK	S	24.6	0.2	156 / 156	1	HF Reader

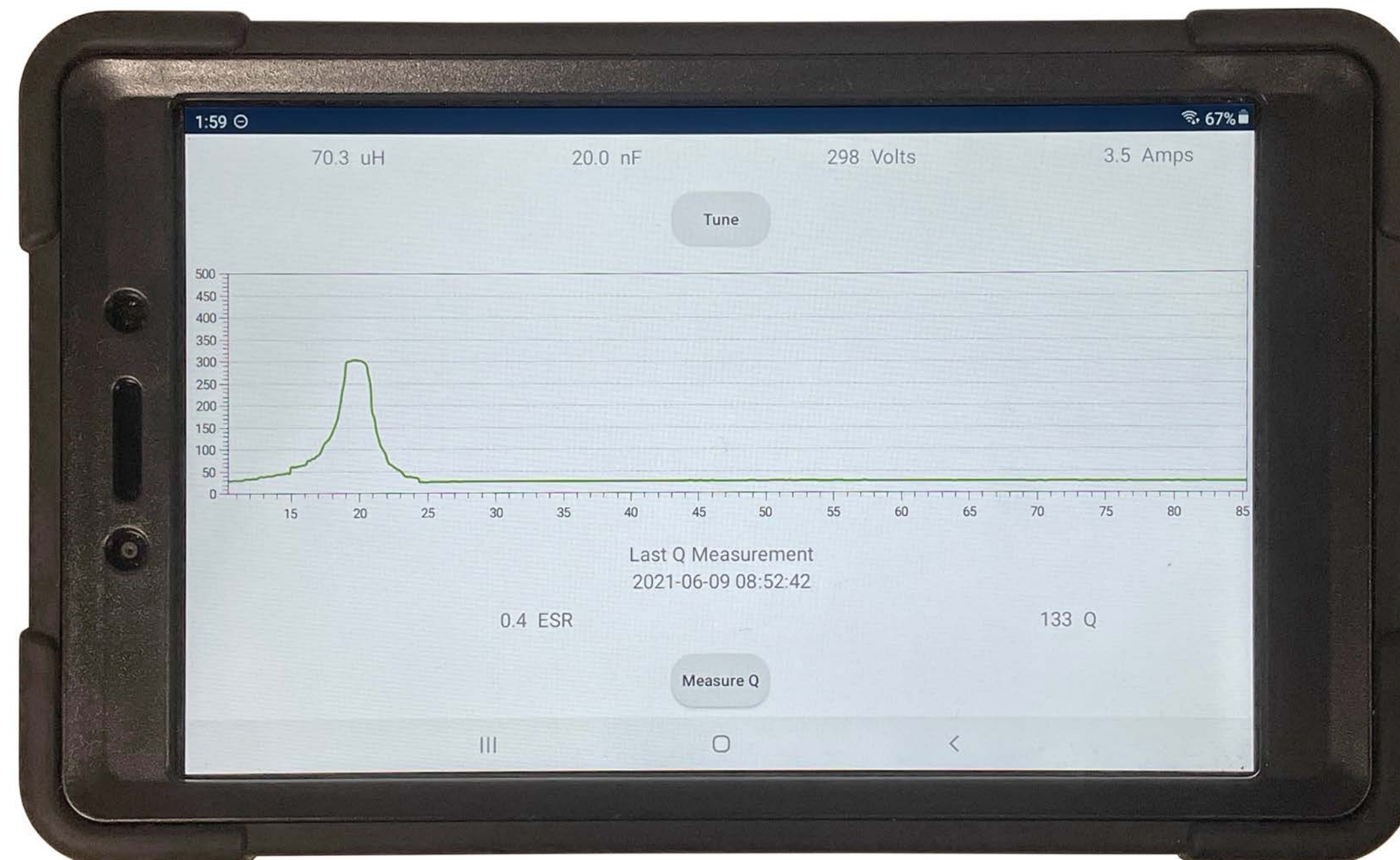


Site Code

Remote Monitor and Control



Tune
Check status
Turn reader on and off



System Status Saved Once per Minute

NSNB> ER

Date		V	A_L	A_C	EA	AntN	R	H	T	V	Chg	Lst
2023-01-15	10:48	12.4	0.1	1.1	0.1	27	R	N	G	15	50	50
2023-01-15	10:49	12.3	0.1	1.1	0.1	15	R	N	G	9	50	50

HSUB> ER

Date		V	A_L	A_C	AntN	A_C	AntN	A_C	AntN	A_C	AntN	EA	R	H	T	V	Chg	Lst
2023-01-21	12:05	13.2	0.2	0.0	0.0	22	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0		S H U	0 50 50
2023-01-21	12:06	13.6	0.2	0.0	0.0	16	0.0	0.0	0	0.0	0.0	0	0.0	0.0	0		S H U	0 50 50

Supply voltage

Amperage during listen cycle

Amperage during charge pulse

Antenna noise level

Effective Amperage

Run or standby mode

Host or node status

Time reference

GNSS satellites in view

Charge pulse time ms

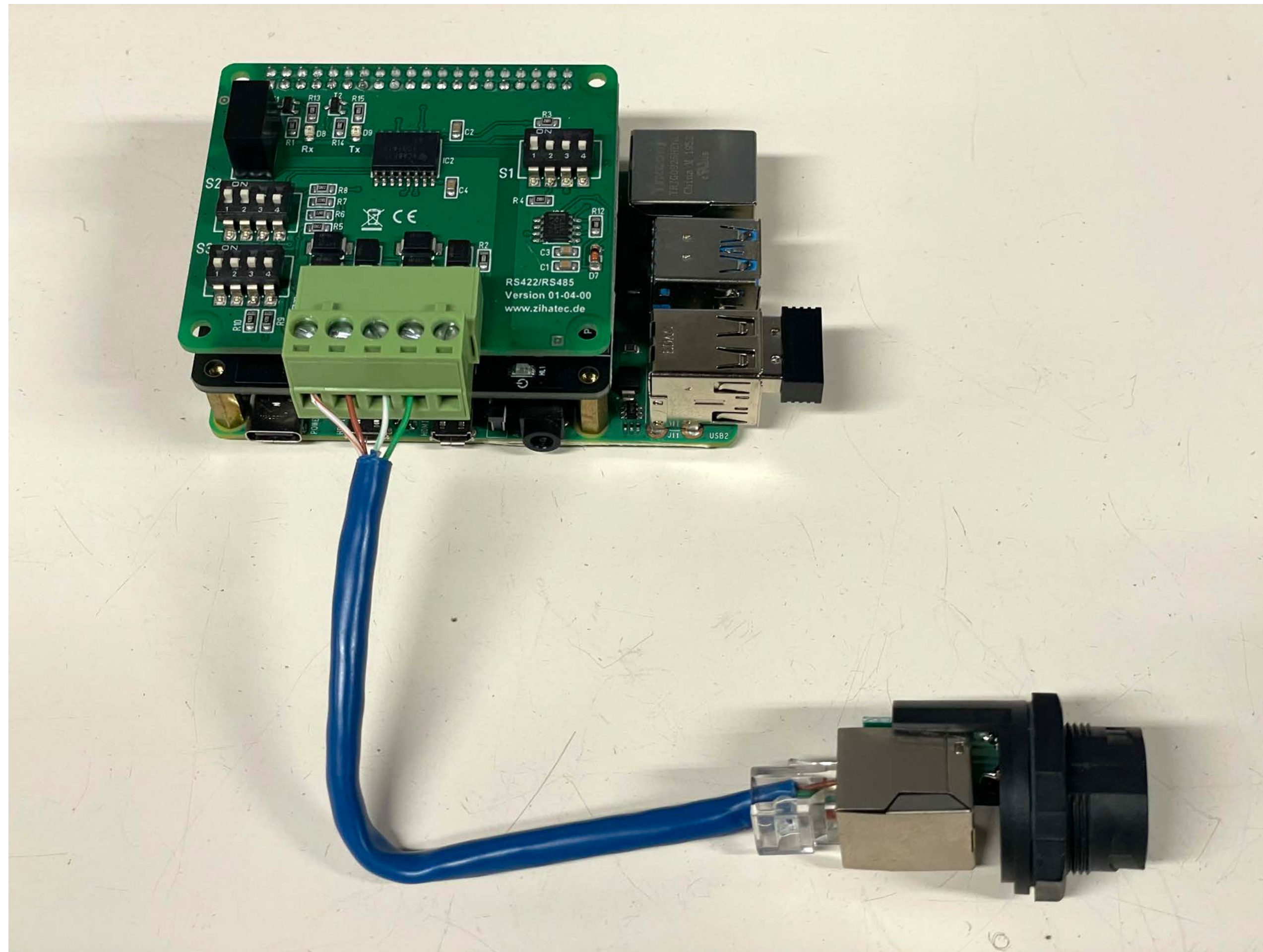
Listen ms

ORSR Mobile Operation



Map display with Android app
Proximity beep
Mopup mode

Raspberry Pi



RS422 HAT to network
ORFID App
Send commands
Save response
Call from other apps