DigiPi Deployment Options
1-4

Controlled via WIFI and Web access

Display map of the area via a browser.
Announce location to Internet.
Send SMS (Text) message to cell phone via the radio & internet access
Send SMS text to other APRS radio stations.
Send Email anywhere via radio link to a node at DCFR HQ (Winlink AX 25 protocol)
Send SMS (text) to other radio stations without Internet (if in range)

This complex model runs indefinitely with a 5 v , 1.2 Ah load.

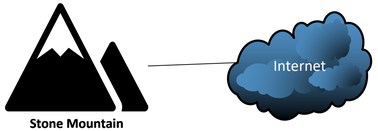
Modern radio networks are designed for packet transmissions like Police and Fire radios with P25 protocols.

Visit https://craiger.org/digipi/

Starlink Mini
Internet Access and
Wi Fi Router
12-48 V DC source
SSID = <see the Starlink>
(~ 150.00 on sale with $50.00 / mon fee (high BW plan) used)

Starlink can be powered
From the DigPi Box (on display)
From a 60 V Dewalt Battery (on display)
From a 120 V AC source (in use)
Power consumption makes batteries difficult and if we used the DigPi box 24/7 we would need a larger battery and solar cell.

MODEL 1



Stone Mountain
APRS I-Gate and Digipeat station
With Vara FM
Receive radius about 150 MILES!
See W4BOC-111 on https://aprs.fi
APRS 144.390 MHz
Vara FM 145.530 MHz

Typical Radio destinations in Dekalb County DEMA / ARES

Dekalb County Fire Rescue HQ
AX.25 WinLink WD5EMA-10 @ 145.590 MHz
Our thanks to Dekalb County Government

Transform
12v to 30 v
(~$ 47.00)

GPS
3D fix X, Y and Z (Altitude)
(~$20.00)

15 A

8 port (~$ 30.00)

20 A

Victron 75/10
Solar Controller ($65.00)

Interface wire

5 A

100 W Solar Panel
Keep in mind clouds, angle to sun and other losses make power about 50 W or so in real life.
20 V
DC, USC C OC 3, USB A
(~ 64.00)

USB A

Transform
12v to 5 v 3A max
(~$9.00)

Raspberry Pi 5
1 GB RAM (~$100.00 prices changes severely)
32 GB SD (~18.00 ea)
Digipi 2.1-1

USB C
With adaptor

Cerbo Gx
Supplies Wi Fi access to power stats.

Network Integration (WIP)
Victron Cerbo GX ($ 222.00)
Used for large scale solar installations as well)

Nermak LiFePh 12 V
16AH, 204 Wh ($ 38.00)

Transform
12v to 5 v 3A max
(~$9.00)

1 – 2 A

Baofeng UV-5RM (~27.00)

Mast 2M/70cm

Car Mount

Mag Mount

Approx cost (over kill due to experimentation) ~$958.00

EXTERNAL POWER- To maintain charge a external USB C power supply is needed with >*3 A current to trigger charging. AC powered charger? USB-C OC 3 solar output, other?*

Provides the same functions and uses the same SW as the large model above expect no direct Internet access. WI Fi is from the Raspberry Pi Zero 2 W

Needs to be in radio range of DCFR for AX 25 protocol and to Stone Mountain for I-gate/ Internet functions.

Will run for about 1:42 hours with a 4 Ah battery and 5 V, 1.2 A load and NO external power.

Simplest and least cost model
~` $ 207.00

USB C Power

Micro USB

1 2 3 4
4 Port USB Hub (~$20.00)

Raspberry Pi 2W ($60.59)

To radio power USB C

To radio "data" Via AIOC as above

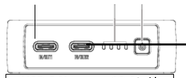
To GPS as above

18650 ($ ~ 24 .00) Li Ion rechargeable on a Pi battery "Hat"

USB Hat not shown (~$27.00)

MODEL 2

EXTERNAL POWER- To maintain charge a external USB C power supply is needed



USB C Nitecore 10 Ah ($ ~51.00) or 20 Ah ($ ~99.00) pass through power bank

1 2 3 4
4 Port USB Hub (~$ 20.00)

USB C Power

Micro USB

Raspberry Pi 2W ($ 60.59)

To radio power USB C

To radio "data" Via AIOC as above

To GPS as above

Provides the same functions and uses the same SW as the large model above expect no direct Internet access. WI Fi is from the Raspberry Pi Zero 2 W

Needs to be in radio range of DCFR for AX 25 protocol and to Stone Mountain for I-gate/ Internet functions.

Will run for about 4 hours with a 10 Ah battery and about 8 hours with a 20 Ah battery with 5 V, 1.2 A load and NO external power

Cost ~$282.00

MODEL 3

30 W, 18 v < $50.00 array
(Lowest cost)

Transform
12v to 5 v 5A max
$ 12.99

USB C Power

Micro USB

1 2 3 4
4 Port USB Hub (~$ 20.00)

Raspberry Pi 2W
$ 60.59

To radio power USB C

To radio "data" Via AIOC as above

To GPS as above

DC IN 18 V
~ 1.5 A, full sun

Victron PWM (not as efficient as a MPPT solar controller) but less costly ($43.45)

Does not support external stats collection unless directly connected to a Cerbo GX integrator.

12v, 9 v LI 11 Ah
($64.99)

Experimental (Approximate cost ~ $288.00)

Provides the same functions and uses the same SW as the large model above expect no direct Internet access. WI Fi is from the Raspberry Pi Zero 2 W

Needs to be in radio range of DCFR for AX 25 protocol and to Stone Mountain for I-gate/ Internet functions.

Will run for about 4 hours with a 11 Ah battery and 5 V, 1.2 A load with NO external power.

Note: The Raspberry PI Zero 2W used to cost about $25.00 cost of memory and tariffs has made this very expensive!

This could be a very good solution!)

MODEL 4

scott@144390.onmicrosoft.com