Matchstiq G20 & G40

Open Architecture

Small Form Factor
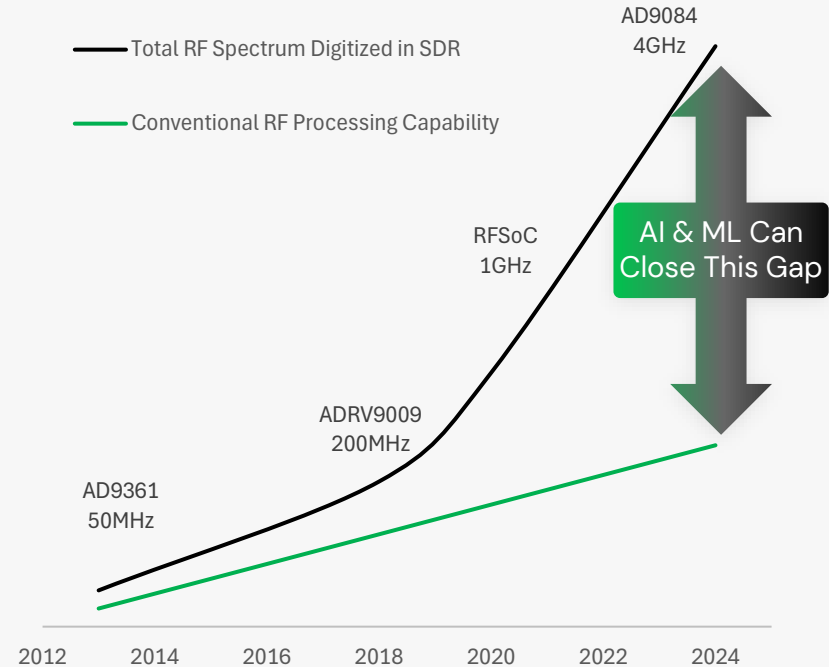
Space-Based Missions

Spectrum Dominance

High Performance

Enabling AI & ML at the RF Edge

RF Digitization is Outpacing Signal Processing

- The Last Decade has Seen an Exponential Growth in SDR Capability
  - Nearly 200x Increase in RF BW per SDR
- Conventional Signal Processing Has Not Kept Up
  - Moore's Law → Linear Growth, Not Exponential

- Epiq's Approach: **Embrace AI & ML**
  - Integrate Highly Capable GPU/CPU Devices into the SDR
  - Enable Power Scalable Processing
  - Partner with Industry Leaders like DeepSig

- The Result
  - Industry Leading SDRs Optimized for RF Sensing at the Edge

—— Total RF Spectrum Digitized in SDR

—— Conventional RF Processing Capability

AD9084
4GHz

AI & ML Can Close This Gap

RFSoC
1GHz

ADRV9009
200MHz

AD9361
50MHz

2012 2014 2016 2018 2020 2022 2024

Matchstiq G20, G40, and X40

EPIQ

Scalable Product Family for AI & ML Applications

- Increasing RF Coverage, BW, and Processing with SWaP-C
- Two Form Factors
  - G20/G40: 7.6" x 4.4" x 1.0" & 2lbs
  - X40: 9.75" x 4.25" x 1.45" & 2.2lbs

G20
One NV100 SDR
2TB SSD for Record
Nvidia Orin NX 16G
2 RF Ports
Coherent & Independent
20W Typical

G40
Two NV100 SDRs
Nvidia Orin NX 16G
4 RF Ports
Coherent & Independent
30W Typical

X40, 6GHz
1MHz – 6GHz RF Range
Up to 200MHz BW / Ch
4 Receivers
2 Transmitters
Coherent & Independent
Nvidia Orin NX 16G
AMD ZU7 MPSoC
45W Typical

X40, 18GHz
1MHz – 18GHz RF Range
Up to 450MHz BW / Ch
4 Receivers
1 Transmitter
Coherent & Independent
Nvidia Orin NX 16G
AMD ZU7 MPSoC
60W Typical

Matchstiq G20 & G40

Standalone GPU+SDR Platform Based on Epiq NV100

- Integrates the NVIDIA Orin NX 16G GPU/CPU SOM
- Exposed Interfaces
  - GbE, USB, Micro USB, GPIO, DC Power
  - GPS Rx or Ref & PPS
  - Up to 4 Total RF Inputs & Output
- G20: 1x NV100 + 1x M.2 SSD
  - Enables RF Record in Platform for 2 RF Channels
- G40: 2x NV100
  - Enables 4 Coherent or Independent RF Channels
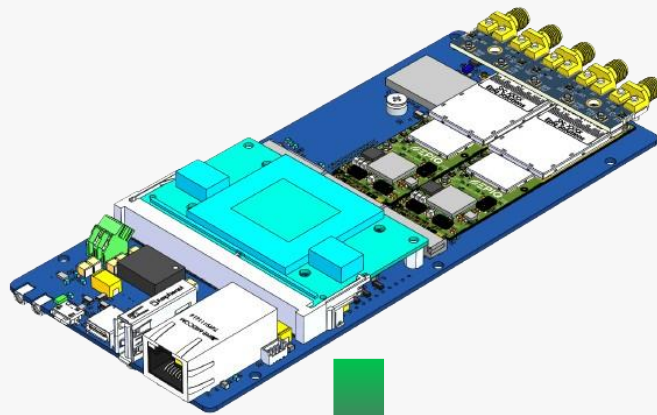
Matchstiq G20 & G40 Block Diagram
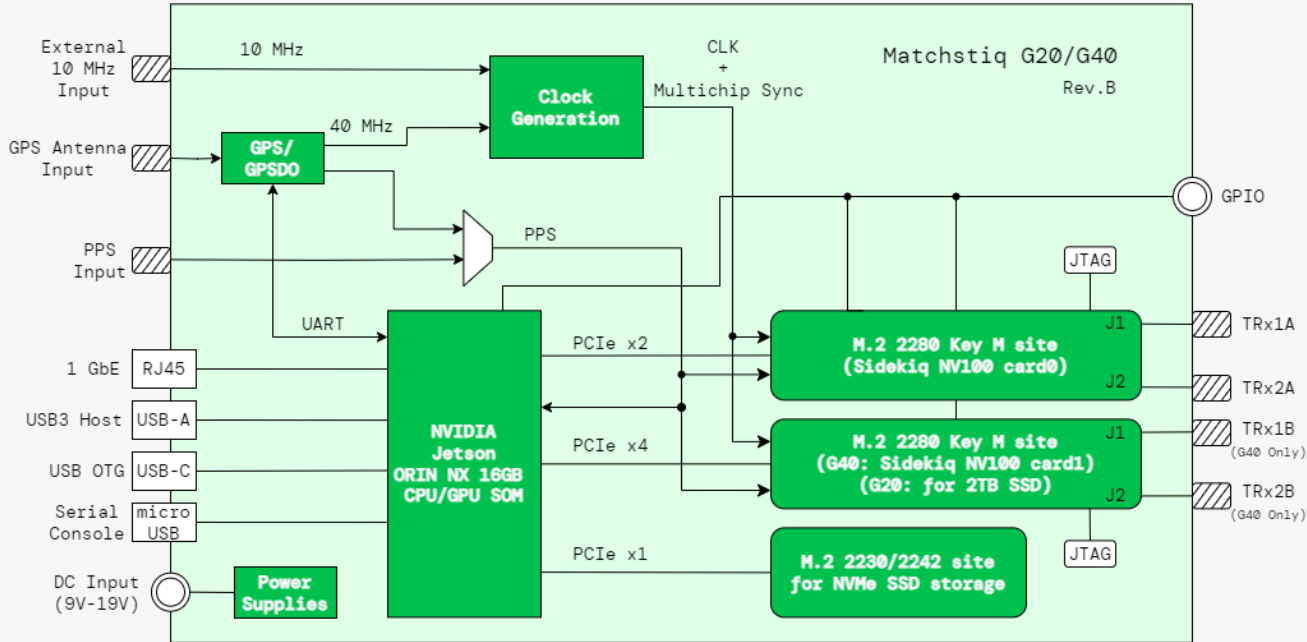
Matchstiq G20 & G40 Development Details

- Dimension Estimate: 7.75" x 4.4" x 1.0"
- Volume Estimate: 34.1in^3; 559cm^3
- Weight Estimate: 2lbs; 0.9kg
- Early Units Available in Mid 2024
- Production Release in 4Q24

EPIQ

Thank You

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