AST
SpaceMobile
Transforming how the world connects

Investor Presentation
September 2023
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AST SpaceMobile is building the first & only space-based cellular broadband network

- Raised $850+ million to date to fund network build and technology with 2,600+ patent and patent-pending claims
- Confirmed 4G capabilities and achieved 10+ mbps download speeds to everyday smartphones directly from space
- Signed agreements and understandings with 40+ mobile network operators with ~2.4 billion existing subscribers
- Fully-funded for operations of first five commercial satellites to offer initial cellular broadband service
Transforming connectivity with direct-to-cell technology (5G + 4G LTE)

“Eliminating the friction of specialized equipment and spectrum bands from direct-to-cellular satellite coverage, at broadband speeds, is a transformational event for the communications industry”

“Not only do we expect to provide essential, affordable broadband connectivity to everyone everywhere, we are working to expand the market to billions of individuals and devices”

- Abel Avellan
Chairman and CEO

Everyday smartphones from all major brands have communicated with BW3

Phones  ■  Devices  ■  DIRECT-TO-DEVICE  ■  Wearables  ■  IoT

UNMODIFIED  ■  STANDARD  ■  EXISTING SPECTRUM
Market opportunity is deep, untapped and expanding

- **$1.1 Trillion**
  global mobile wireless services market

- **5.5 Billion**
  mobile phones and devices moving in and out of coverage

- **44%**
  global population without cellular broadband

- **~90%**
  of Earth’s surface without cellular coverage

- **$67 Billion**
  8-yr expected demand for satellite direct-to-device communications

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Source: GSMA market data as of December 31, 2022.

1. Represents 2023-2030 cumulative estimated demand, per Northern Sky Research.
Top Mobile Network Operators (MNOs) are AST investors, partners and customers

When operational, SpaceMobile service will be available to MNOs on a wholesale basis, with existing relationships spanning nearly all large countries (ex. China/Russia)
AST SpaceMobile is currently operating a 693 sqft phased array in low Earth orbit.

BlueWalker 3 is the largest-ever commercial communications array deployed in LEO, designed to support cellular broadband directly to everyday smartphones.

Click here to see how we assembled, launched and deployed BW3, and click here for an overview of the mission.
April 2023

History made: First-ever space-based voice calls using everyday smartphones

“Today, we have taken another major step in mobile communications. 30 years after Vodafone sent the world’s first text message, we supported AST SpaceMobile in successfully making the first ever direct-to-smartphone test call using satellite communications. This is just the start. As a lead investor in AST SpaceMobile, we will continue to break technological boundaries by connecting many more millions of people across the planet when the service becomes commercially available.”

— Margherita Della Valle, CEO

“AT&T’s heritage began with the birth of the telephone 147 years ago and has continued with many other firsts including: trans-continental call, overseas call, call from the moon, and partnering to deliver the only network built with and for America’s first responders. We connect people to greater possibility, and this important milestone with AST SpaceMobile is a big step and we can’t wait to see what’s next in our space-based journey.”

— Chris Sambar, Head of AT&T Network

“It was a unique thrill and honor to have the Rakuten team talk with Abel in a world-first direct-to-satellite experience. Congratulations to AST SpaceMobile and all of its strategic collaborators on this groundbreaking event. As technological advancements like space connectivity become possible with pioneers like AST SpaceMobile, Rakuten will also progress even further along the road to democratizing connectivity for all.”

— Mickey Mikitani, Chairman & CEO

The first voice call was made from the Midland, Texas area to Rakuten in Japan over AT&T spectrum using a Samsung Galaxy S22 smartphone

Source: AT&T.
History made, again: First-ever 4G LTE to everyday smartphones directly from space

“Successfully reaching double-digit download speeds during satellite-to-smartphone testing takes us one step closer to ensuring people across the United States will be able to stay connected no matter their location. This milestone wouldn’t be possible without the overall focus and determination of the teams working daily to achieve our shared space-based vision of connectivity.”

— Chris Sambar, Head of AT&T Network

“Each mobile milestone in Vodafone’s history has moved us closer to connectivity for all. Achieving these mobile speeds, via satellite direct to standard 4G smartphones, shrinks the digital divide even further. Together with Vodacom and AST SpaceMobile, we look forward to bringing this capability to our customers in the hardest to reach areas of Africa and Europe.”

— Alberto Ripepi, Chief Network Officer

“This is an important milestone that will see real mobile broadband connectivity delivered directly to smartphones from space via AST SpaceMobile’s platform. As the RAN provider, we are proud to play a role in this important initiative that will provide crucial connectivity around the world.”

— Tommi Uitto, President of Mobile Networks

Using AT&T cellular spectrum, we connected everyday smartphones to our BlueWalker 3 test satellite and recorded 4G LTE download speeds (with 5MHz carrier) of >10 Mbps
Vertically integrated manufacturing to support rapid constellation build.

Two locations in Texas with combined 185,000 sq ft and potential capacity to produce up to 6 satellites per month using automated processes.
Manufacturing of first five BlueBird commercial satellites ramping

- Completed construction of clean room manufacturing space
- All necessary equipment delivered and installed
- All critical lead time items ordered
- All manufacturing processes and lines completed and implemented
- Completed part-by-part traceability and quality system
Key future milestones to reach initial space-based cellular broadband commercial service:

- Joint test results of BlueWalker 3 capabilities with MNO customers and technology partners
- Manufacturing and assembly of Block 1 BlueBird satellites at our Texas facilities
- Completion of definitive commercial agreements with initial customers
- Regulatory approvals in key markets
- Finalization of Block 2 BlueBird design, including ASIC tape out
- Launch of 5 Block 1 BlueBird satellites
- Initial commercial service using Block 1 satellites
AST SpaceMobile differentiation

- Only pure play, low Earth orbit (LEO) broadband communications company that is publicly-traded

- Novel technology solution applicable to a market of 5.5 billion mobile phones and devices and the related $1.1+ trillion TAM

- Jointly going to market, not competing, with mobile network operators with hundreds of millions of subscribers

- Revenue share business model designed to allow users to sign up with a simple text message

- Approximately $191 million cash and cash equivalents to fund business operations and initial production satellites

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1. AST SpaceMobile market size based on GSMA Intelligence estimate of total cellular wireless market spend. As of December 31, 2022.
Company snapshot

Founder-led leadership and deep team with decades of successful execution

Global Infrastructure

Abel Avellan
Chairman and CEO
- 25+ years space industry experience
- Co-inventor of 21 U.S. Patents
- Former Founder and CEO of EMC (Emerging Markets Comms.) until $550mm sale in 2016
- Provided initial seed capital for AST SpaceMobile

Sean Wallace
Chief Financial Officer
- 25+ years senior management and banking experience
- Prior CFO and Treasurer of Cogent Communications
- Former banking leadership positions at Standard Chartered Bank and J.P. Morgan

Scott Wisniewski
Chief Strategy Officer
- 15+ years of M&A / financing experience
- Previously Managing Director, TMT Investment Banking at Barclays
- Advised AST on its $110mm Series B in 2019 and the SPAC merger / PIPE financing in 2021

Brian Heller
General Counsel and Secretary
- 20+ years of public company legal experience
- Prior General Counsel of Castle Brands Inc.
- Former Partner practicing Corporate and IP law

Chris Ivory
Chief Commercial Officer
- 25+ years in satcom, business development and government / regulatory affairs
- Led Commercial Business Unit as EVP Globecom
- Former SVP of Satellite Land Services at EMC

Dr. Huiwen Yao
Chief Technology Officer
- 30+ years RF engineering + satcom
- Prior: Northrop Grumman Innovation Systems (Orbital ATK)
- 40+ GEO satellites built

Dr. Ray Sedwick
Chief Space Scientist
- Director, Space Power and Propulsion Lab at University of Maryland
- NASA Innovative Advanced Concepts Fellow
5.5 billion mobile phones and devices globally

Global wireless services market generates over $1.1 trillion in annual revenue, with a backdrop of evolving and imperfect networks.

Source: GSMA Intelligence (data as of December 31, 2022).
## AST SpaceMobile Technology Solution

**Differentiated approach compared to existing space-based communications**

<table>
<thead>
<tr>
<th>First &amp; Only Broadband Direct To Mobile Phones</th>
<th>Direct via Proprietary Mobile Phones</th>
<th>Indirect via Complex, Expensive Hardware</th>
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</thead>
<tbody>
<tr>
<td><img src="image" alt="Mobile Phone" /></td>
<td><img src="image" alt="Proprietary Satellite Phone" /></td>
<td><img src="image" alt="Satellite Antenna" /></td>
</tr>
<tr>
<td>Any standard mobile phone</td>
<td>Provider-specific satphones (~$1K)</td>
<td>Provider-specific antennas mounted on planes, ships, vehicles, buildings (~$1K-$200K+)</td>
</tr>
<tr>
<td>Mass market mobility and the unconnected</td>
<td>Narrowband service on satphones</td>
<td>Enterprise, Maritime, Aviation, Government, Residential</td>
</tr>
<tr>
<td><strong>Market Size</strong> ¹</td>
<td><strong>&gt; $1 trillion</strong></td>
<td><strong>&lt; $2 billion</strong></td>
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### Notes

1. Market size based on the sum of 2020A revenues of included providers, AST SpaceMobile market size based on GSMA estimate of total cellular wireless market spend.
Satellite-to-cellular architecture is transparent to end-user.

SpaceMobile network designed to closely mirror terrestrial cellular architecture.

- Satellites in low Earth orbit to offer low-latency and attractive look angles.
- Large satellites designed to create over 1 million fixed terrestrial cells globally with broadband capacity.
- Low- and mid-band frequencies shared with wireless operators on non-interference basis.
- High-throughput Q/V-band feeder links for backhaul.
- Direct link to unmodified mobile phones and other cellular devices.
- Gateways / Partner Network.
- Terrestrial Telecom Network.
Significant flexibility in go-to-market strategy, with multiple potential ways for cellular subscribers to access more and better connectivity

- Subscribers receive a text on their phone asking if they would like to turn on SpaceMobile service

- A fixed monthly rate to add SpaceMobile as a supplemental service to existing cellular plan
- Automatically connect with SpaceMobile’s network upon entering an area without cell tower coverage

- Same as consumer, but with more data targeting power users

- Uplink / downlink for cellular compatible IoT devices, for areas with poor terrestrial connectivity

- Subscribers would use SpaceMobile during emergencies and natural disasters when terrestrial networks are not nearby or have failed
Highly successful funding history

Milestone driven, value-creating financing approach with validation from a high-profile investor base across the wireless ecosystem

Select Investors | Rounds Participated | $mm
--- | --- | ---
Rakuten | 2 | $104
Vodafone | 2 | $35
American Tower | 2 | $31
Cisneros | 2 | $12
Bell Canada | 1 | $10
Samsung | 1 | $1

1. On September 6, 2022, AST SpaceMobile completed the sale of its 51% interest in its former subsidiary, NanoAvionika UAB (“Nano”) for net proceeds of approximately $26.6 million.
2. Representative of $75 million of gross proceeds from December 2022 follow-on offering, $33.4 million of net proceeds from committed equity facility (“CEF”) as of December 31, 2022 and $20.0 million of net proceeds from at-the-market offering program as of December 31, 2022.
3. Representative of $56.9 million of gross proceeds from June 2023 follow-on offering, and $7.2 million of net proceeds from at-the-market offering program as of June 30, 2023.
4. Includes $15.0 million equipment loan from Loan Star Bank, and a $48.5 million draw on a $100.0 million senior secured credit facility.

Divestiture of non-core asset for ~9x MOIC

Public Investors

$64

Secured Credit Facility and Equipment Loan

$850+

Total Capital Raised

January 2017 | June 2018 | 2019 - 2020 | April 2021 | September 2022 | 2H 2022 | 1H 2023 | August 2023
--- | --- | --- | --- | --- | --- | --- | ---
Seed | Series A | Series B | De-SPAC & PIPE | Sale of Nano Stake¹ | Follow-On, CEF & ATM² | Follow-On & ATM² | Debt Facilities³