



Jio *TRUE 5G*

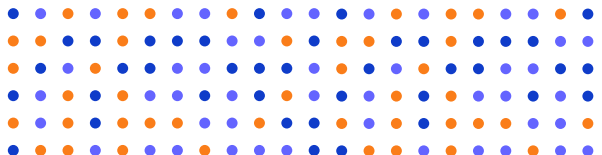
**Made in India,
by Indians, for
the entire world.**

Designed and made in India by Jio, Indigenous 5G technology stack.

Jio is proud to have designed its complete 5G technology stack fully in house, by Indians. By doing so, India is now amongst the select few nations in the world with a fully indigenous 5G technology stack.

While all legacy technologies like 2G, 3G and 4G involved importing equipment and technology from abroad, with 5G India has not only reduced the dependency on foreign imports but is set to become an exporter of telecom products –

- Jio has built a complete array of 5G Radio Products including the Outdoor Small Cell, Massive MiMO Radio Unit, Indoor Small Cell, mm Wave, Outdoor Small Cell, 5G Integrated Macro gNodeB, 5G Indoor Combo Small Cell and the Combined Centralized and Distributed Unit.
- Jio has also developed its own indigenous 5G Core. Together with its Radio Products, Jio complies with global 3GPP standards.
- Jio's True 5G Technology stack offers superior performance, convenience and ease of installation besides being fully secure, cost competitive and agile to unleash the power of 5G connectivity for the benefit of 1.4 billion Indians.





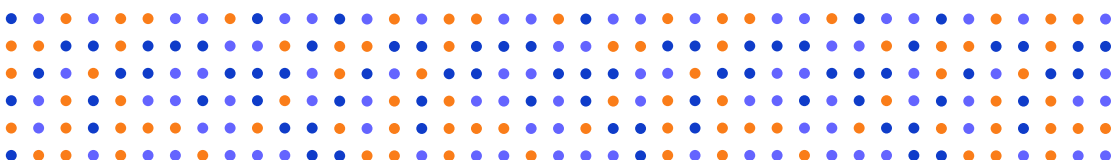
5G mmWave ODSC
mmWave Outdoor
Small Cell



5G ODSC
Outdoor Small Cell



5G MRU
Massive MIMO
Radio Unit



Jio True 5G: Superior in every way.

Current capabilities enable Jio to offer the only True 5G experience in the country. Following factors attribute to this –

Standalone 5G architecture.

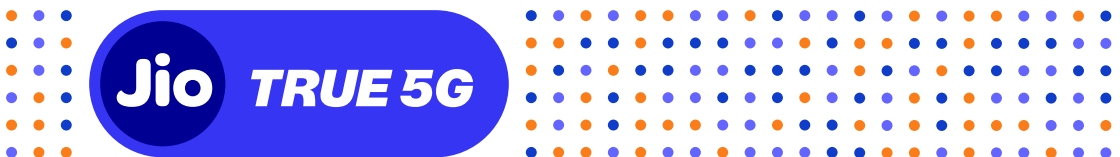
- Advanced 5G Network with zero dependency on existing 4G Network.
- Powerful functionalities like low latency, massive machine to machine communication, 5G Voice, Edge Computing and Network Slicing.
- Far Superior to 4G based Non Standalone Networks.

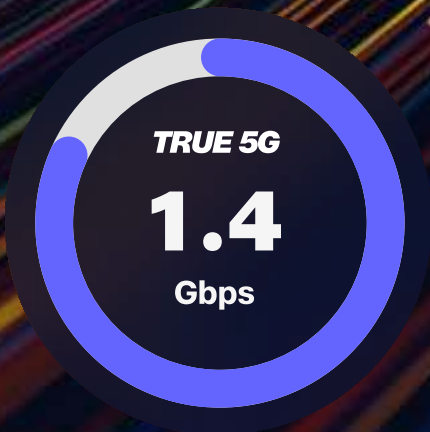
Largest and the best mix of spectrum.

- Largest and the most appropriate mix of wireless spectrum for 5G across 700 MHz, 3500 MHz and 26 GHz bands giving Jio a distinct advantage over other operators.
- Jio is the only operator with the 700 MHz low band spectrum to ensure deep indoor coverage.
- In addition, Carrier aggregation seamlessly combines 5G frequencies into a single, robust 'data highway'.

Nation wide coverage.

- Jio's commitment is to make available True 5G in every town, taluk and tehsil of India by Dec 2023.





Exceptional speeds for exceptional experience.

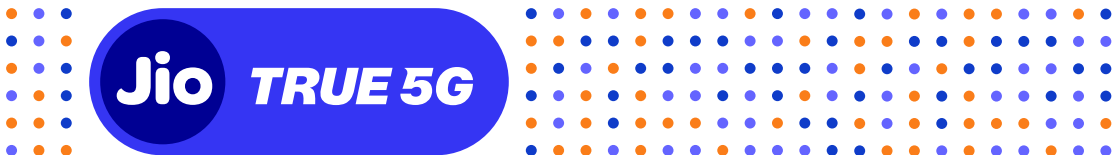
Jio showcased speeds up to 2.4 Gbps at the India Mobile Congress (IMC) 2022 conference.

mm wave speed test

- Jio True5G powered by mm wave can enable throughput and latencies hitherto unimagined.
- At the IMC 2022, Jio True 5G mm wave powered by a Qualcomm ODCPE demonstrated speeds up to 2.4 Gbps.

eMBB speed test

- Jio also showcased how broadband like speeds can now be delivered wirelessly on a mobile phone over 5G network to usher in a new generation of ultra low latency and high bandwidth experienced anytime and anywhere.
- At the IMC 2022, Jio demonstrated speeds up to 1.8 Gbps on a mobile phone connected to a 5G ODCPE.



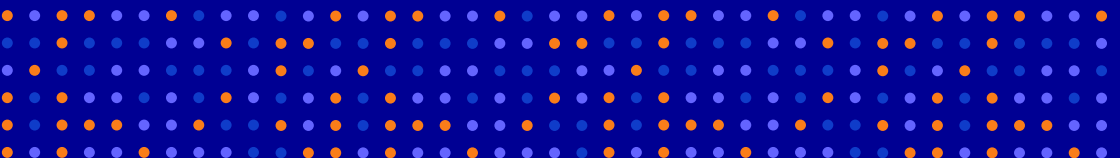


TRUE 5G

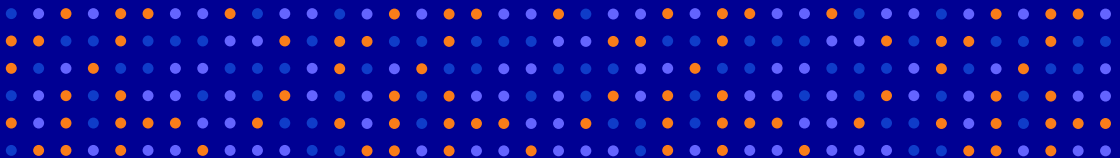
2.4

Gbps

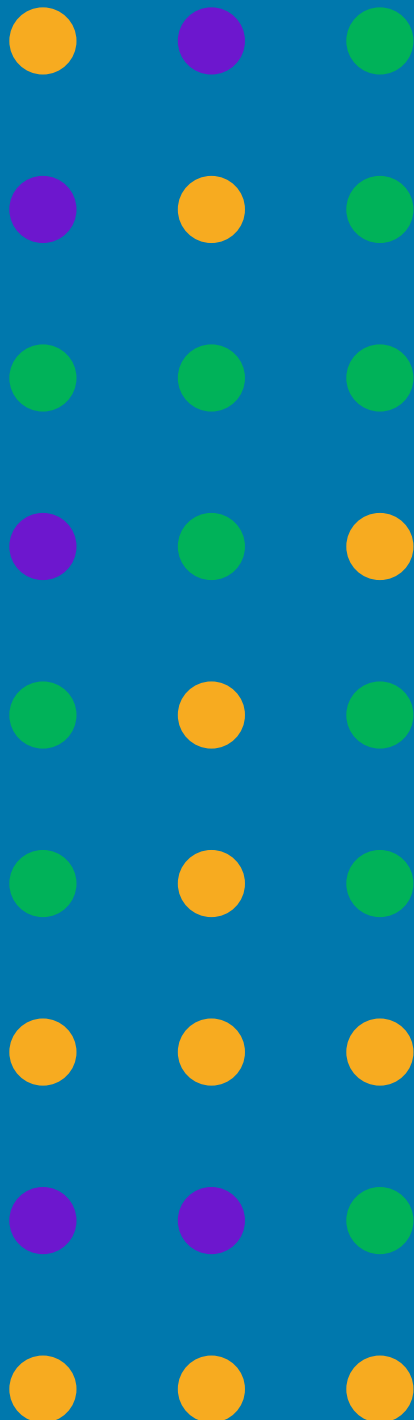
Speed experienced at IMC 2022,
on Jio True 5G mm wave



**Use cases
showcased at
IMC 2022.**



**Nation
building
use cases.**



Intelligent farming with IoT sensors and precision spraying drones.

While India has the second largest land area under cultivation in the world, per capita output remains low which can be given a significant boost with IoT and Drone based Precision Farming Solutions powered by Jio True 5G.

- 5G powered swarms of drones can be flown remotely from Control Centers located far away from actual site, such as a farmers' premise, a District or Taluka office or even the State or Central headquarter.
- Drones can fly over farmlands and use multi spectral cameras to scan the fields with images shared real time on cloud over the 5G network and analyzed using AI/ML algorithms to detect insect or pest infestations, soil moisture, irrigation, etc.

Same drones can also be used for precision spraying of water, insecticides or fertilizers.

- 5G powered Jio Krishi IoT Devices such as weather station, soil testers, etc, can simultaneously aid in data driven farming methods for precision inputs on soil moisture, temperature and chemical composition so that farmers can optimize utilization of farming resources, reduce over spraying of harmful chemicals, fertilizers and pesticides and improve farm productivity.



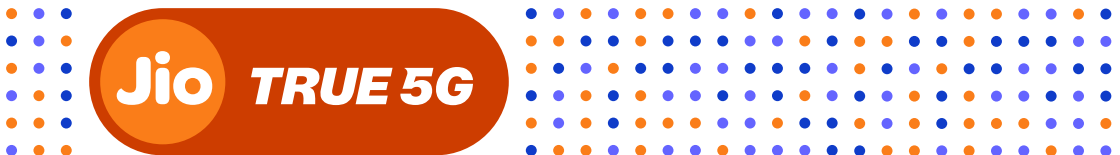


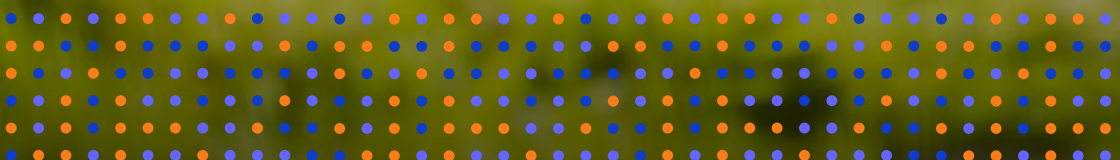
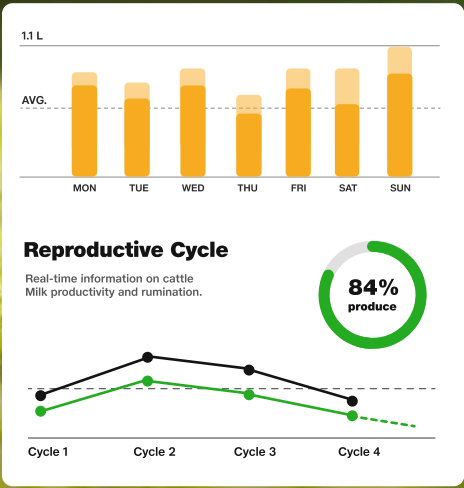
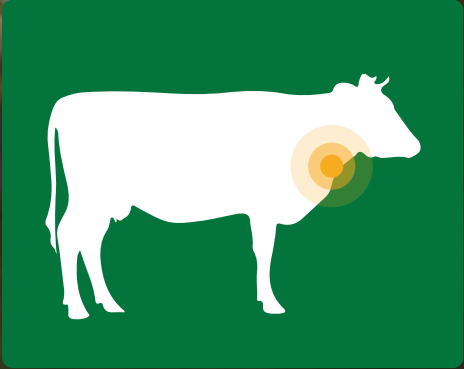
Transformation of dairy farming.

Indian dairy farmers are saddled with problems that include labor intensive operations for monitoring and upkeep of cattle like missed estrus cycles leading to low productivity, delayed detection of diseases causing high mortality rates and overall escalation of treatment costs.

All these reasons attribute to the fact that while we are a leading dairy producer globally, the milk production per animal in India is significantly lower as compared to other global producers.

- The Solution offered by Jio includes a Cattle IoT device which can monitor eating, activity levels, rumination and detect early signs of diseases.
- The data collected by the device is shared real time to a cloud database, which further uses AI to benchmark and analyze cattle health and productivity, which is shared with the farmer as a daily update through the Jio GauSamriddhi App.
- The solution enables dairy farmers with data driven inputs on estrus cycles, health anomalies and aid in improving productivity, reducing dependence on labor and timely treatment of diseases.





Remote diagnostics to bridge barriers between medical experts and patients.

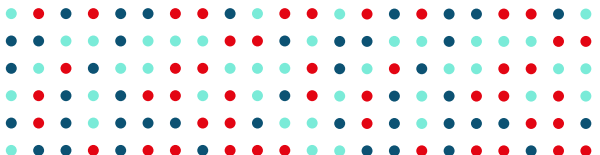
Approximately 65% of the Indian population lives in rural and remote areas with limited access to high quality, critical pre-emptive diagnostics.

Both inpatients and outpatients—must travel to radiology centers or imaging clinics, which is a massive barrier to timely diagnosis.

- Jio will bring remote diagnostics, for example Robotic Tele Radiology, to the remotest parts of India.
- A Tele Radiology setup will include a Robot armed with a radiological probe at the remote site and a haptic controller at the specialist doctor site.

- Radiologists and medical specialists can operate Robotic Radiological Devices remotely using haptic controllers as camera feeds relay live patient feed and haptic feedback with no latency.
- Doctors can examine radiological imaging data and diagnose conditions without being physically present.

This will help in bridging physical barriers between patients situated in remote locations and qualified medical practitioners located in urban centers leading to timely detection of diseases, offering quality medical treatment and eventually improved quality of life even in the remote parts of India.

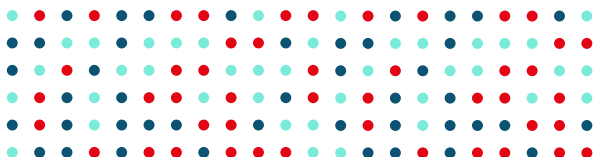




Bridging physical barriers between experts and patients through community clinics.

In India, the doctor patient ratio is as low as 1:2000. Many patients, especially in rural areas have to travel long distances to consult quality medical specialists. This physical barrier often leads to delayed detection of diseases, escalated treatment costs and higher mortalities.

- Jio True 5G enabled Community Clinics will bring quality Healthcare specialists to geographies with limited healthcare facilities Using the 'Clinic in a Bag' platform, Paramedics or Asha workers can carry Connected probes such as Stethoscope, ECG machine, Glucose monitors, ENT probes etc.to patients in far flung locations and this feedback can be relayed real time to a specialized doctor at any location.
- With the simple design and wirelessly connected suite of medical devices, labs and instant clinical analytics, care workers can collaborate with specialist doctors to diagnose and treat patients in even the most remote settings.
- This will also allow citizens to have improved access to quality 'OPD consultation' from their nearest health centers thereby helping improve quality of life across geographies in India.



Healthcare



5G TRUE 5G

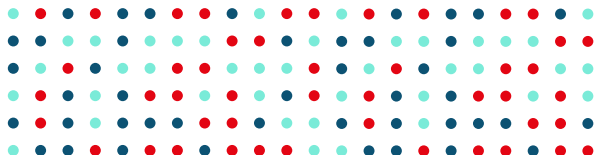


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Timely assistance with 5G enabled connected ambulances.

According to the National Crime Records Bureau, nearly 24,000 people die each day in India due to delays in getting accurate medical assistance during the 'golden hour' after a traumatic event or injury. This is largely attributed to delay in reaching and limited abilities to start emergency medical treatment in the ambulance.

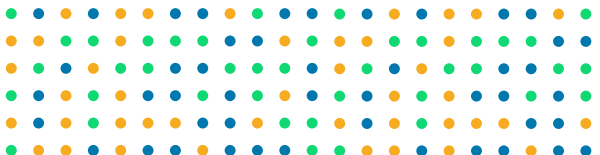
- A Jio True 5G Ambulance will be equipped with a Tele ICU and ventilator, along with a Live Camera and A/V equipment.
- The ambulance will have the capability to relay patient vitals and camera feed real time to a specialist doctor in a hospital ER Room.
- Once the specialists have this data real time, they can assess patient condition while he/she is on the move, suggest accurate remedial measures to stabilize the patient.
- This will also allow the hospital to get the ER room equipped and ready at the same time to receive the patient, saving critical time during the golden hour and reduce fatalities drastically.



Environmental monitoring and pollution control.

It is estimated that around 70% of surface water in India is unfit for consumption. Every day, almost 40 million litres of wastewater enters rivers and other water bodies with only a tiny fraction adequately treated. It is estimated that the cost of environmental degradation in India is a staggering \$80 billion per year!

- With 5G, swarms of drones can be controlled remotely from a central command and control station.
- 5G Drone swarms can also help access vast and hard to reach areas from a remote-control station.
- This will enable monitoring man made and industrial hotspots of pollution. Data can be streamed to the Cloud in real time through 5G network.
- Same can be analyzed using AI capabilities and then interventions can be made to fight pollution such as using the same drones for collecting pollutants from the surface of the water/land.





Enabling access to quality education- “Padhega India toh Badhega India.”

Of the approximately 250 million children in India, a staggering 100 million do not have access to high quality education due to lack of infrastructure, well trained teachers in rural, remote and border areas or non availability of latest syllabus or teaching methodology.

- Jio's 5G enables services will go a long way to enable and empower these 100 million students and lakhs of teachers by connecting them in the true sense.
- With interactive 3D Models and Augmented Reality, powered by the ultra low latency and high bandwidth of Jio True 5G, teachers will be able to make learning more fun and intuitive for students and improve their cognitive abilities.
- This can reap multi-fold benefits for the nation. When these students join the workforce, they will be more skilled and trained and contribute to the PM's goal of becoming one of the top 5 countries in the world.



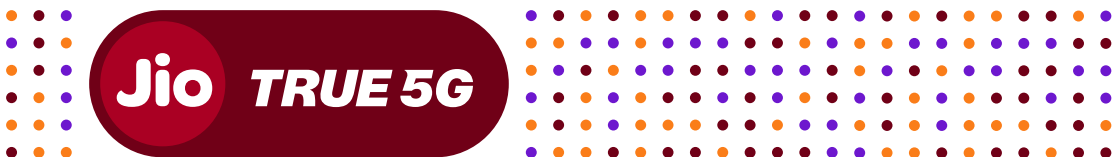
Jio *TRUE 5G*



Immersive learning

Traditional methods of learning using textbooks and pictures often pose a challenge for students attempting to visualize and understand complex subjects such as functioning of the heart, chemical reactions, geography and history among others.

- Using Augmented Reality, Schools can now have a '3D Reality Lab' in which all students can wear a Jio Glass to visualize topics from their syllabus.
- Teachers can teacher can control the instruction and content that students see using the device.
- Use of 3D Augmented Reality can significantly boost understanding of concepts and subject matter as it enables students visualize, interact and study unlike any medium available today.





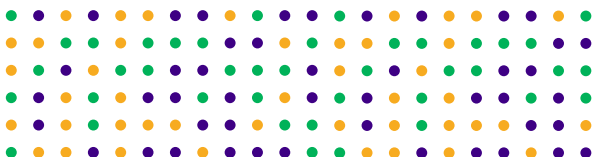
**Enterprise
and business
use cases.**

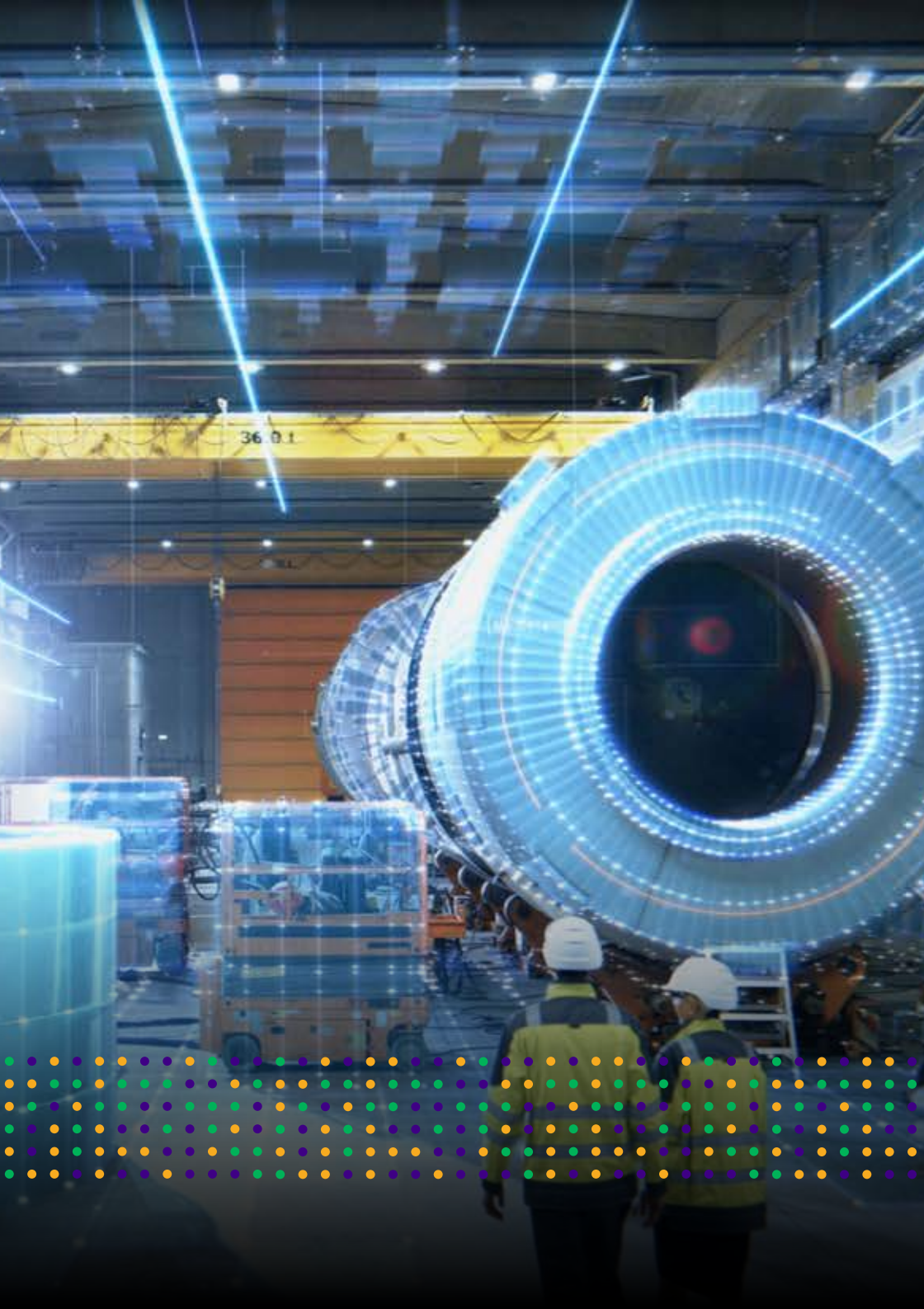


Large enterprises and Industry 4.0.

Jio True 5G, in combination with digital ecosystems and private 5G deployments will unlock a broad range of opportunities to transform Industries. Here are some of the innumerable use cases that will get a boost post implementation of True 5G.

- **Retail** – Real-time inventory management, mixed reality with personalized experience, video analytics for real time customer insights.
- **Manufacturing** – Private 5G for Robotic manufacturing, AR/VR for remote guidance, precision monitoring, digital twin and real time analytics.
- **Mining** – Autonomous guided vehicles, remote operations, device location tracking and worker safety enablement.
- **Port and Utilities** – Centralized operations for traffic monitoring, smart grids, IoT based utilities to improve efficiency and wastage control.
- **Smart Cities** – Cities enabled with smart utilities, infrastructure enablement for connected public transport, traffic management, public safety and security.

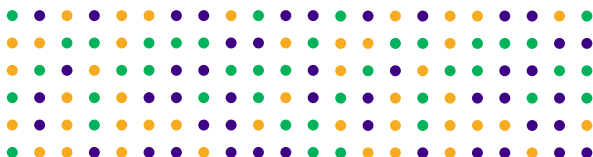


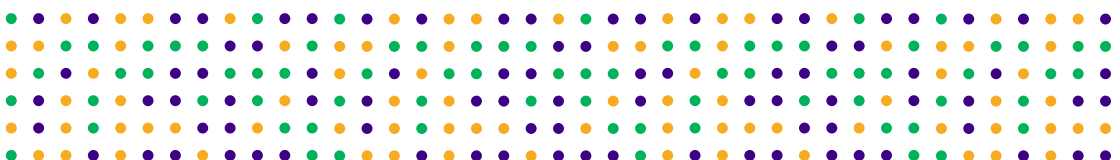


Robotics for warehouse automation and logistics.

Autonomous operations of robotics require seamless and highly responsive machine to machine communication for real time synchronization and coordinated operations.

- Jio True 5G enables massive machine to machine communication and ultra low latencies.
- Jio also offers Edge Computing (AI/ML), 5G embedded IoT infrastructure, on-demand network upscaling and QoS based application along with secure communication gateways for industries with Private 5G and mm Wave solutions.
- Jio's Indigenous Robotic solutions offers fully autonomous solutions for warehousing and logistics operating including robots for sorting, bin picking and dollies which can carry loads weighing up to 1 Ton.
- Together, these technologies can optimize warehouse operations, automate storage and retrieval, reduce human errors and improve worker safety while improving overall cost efficiencies and productivity.





Smarter manufacturing for India.

Jio True 5G enables High Density and Ultra Low Latencies for massive machine to machine communications, thereby enabling collaborative robots to operate autonomously, precisely and efficiently across manufacturing setups.

- Autonomous operations of collaborative robots require low latency machine to machine communications and high bandwidth for supporting high density of machines, IoT devices, sensors, Cloud Computing and AI/ML Algorithms. All of this can be enabled by Jio.
- At the India Mobile Congress 2022, Jio in partnership with Nokia demonstrated how Printed Circuit Boards (PCBs) demanding require

high precision inputs from multiple sources can be efficiently and autonomously manufactured using 5G Powered Bots combined with IoT, Cloud Computing and Digital Twin.

- IoT and Digital Twin allows for real time replication of the machine or manufacturing setup as a digital model. This can help monitor output and functioning of component parts such that it allows for precise quality control, preventive maintenance and inventory planning, leading to significant efficiencies and cost optimization in production.





Revolutionizing Industrial IoT and surveillance.

Surveillance

With Jio True 5G's ultra high speed and low latency, adoption of smarter video analytics solution is going to help enterprises modernize their legacy surveillance systems to an intelligent data driven surveillance solution thereby bringing business and operational efficiency across industry segments.

- Jio True 5G will help in real data processing, Shift to Edge/Cloud and enable multiple streaming across devices. In addition, 5G will enable quicker deployments of CCTV over traditional cabling with no limitation on installations.
- With Jio True 5G, cameras will now be more responsive and real time monitoring will see a quantum leap

in image quality, with 4K support and even 8K. Role of video analytics and AI will be greatly enhanced with the faster speeds and greater capacity of 5G.

- Jio Smart Monitoring will offer and cater to host of use cases, critical for safety and security of personnel and assets under consideration.

Industrial IoT

Jio True 5G will transform IoT using massive machine types communication for Utilities such as gas, water, electricity and street lights.

- With Jio True 5G, connect up to 1 million connections per sq. KM, latency of less than 1 ms. Now NB IoT will perform in a smarter and better way.





Making mining safer and more efficient.

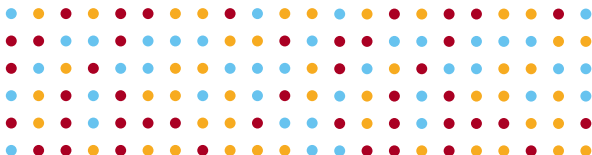
Modern life depends on mined minerals, with electronic devices, on average containing 35+ minerals. To accommodate growing consumer demand, mining needs a smart transformation.

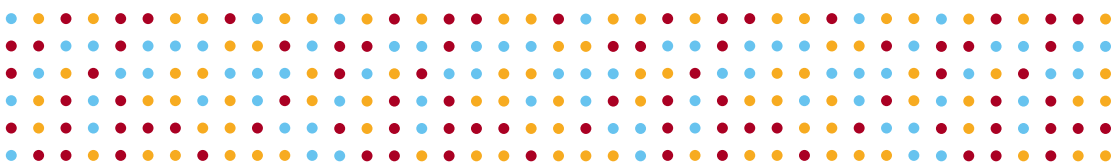
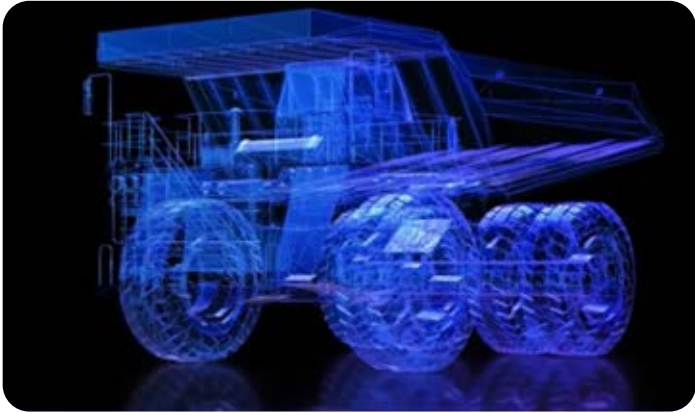
True 5G can transform the mining industry at many levels.

- Automating mining systems, including enabling private 5G and radios in mines.
- Improving operational efficiency, including reducing the overloading of trucks.
- Improving safety, including tracking gas leaks.
- Ensuring smooth operations through smart sensors and surveillance.
- Receive data from multiple heavy machines on site.
- Make real-time decisions with advanced AI/ML.
- Enable IoT, surveillance, and logistics via remote monitoring.

In addition, a critical role is the ability of True 5G to stop pilferage.

- Track people with drone-based inspections.
- Get notifications in case of any breaches.





Enabling small and medium businesses with smart offices.

Seamless digital services and connectivity are the primary engines of all modern businesses. However, for smaller businesses and startups, getting to a threshold connectivity and digital preparedness can be significant investment in software, hardware and connectivity related services.

- With connectivity powered by Jio True 5G and Jio AirFiber offices are set to become smarter with easy and wireless plug and play solutions such as –
 - Jio AirFiber
 - Cloud PC
 - Video Telephony - Surveillance
 - Digital Signage
- Now, multiple devices can connect wirelessly to Jio True 5G without loss of speed or experience that supports scalability, affordability and flexibility – the must haves for startups and small businesses of today.





Preparing the next generation of skilled Indians.

India is known for its IT prowess and the demand for skilled workers is on the rise across the world!

Onboarding Technical Staff on complex machinery is not an easy task as it involves sifting through pages of technical manuals and data.

Furthermore, for machines such as automobiles, aircraft, railways and other heavy and complex equipment that require regular maintenance and replacement of component parts, it is not often easy to identify fault or conduct repairs without thorough checks and references to records of machine operations.

With Augmented Reality powered by Jio Glass and Jio True 5G, these problems are expected to be much simplified and easy to solve.

- A trainee can now wear a Jio Glass to visualize model of the machine in full 3D, simulate mechanical operations and learn quickly using such 3D visual tools there by

enabling quick onboarding and Skill Development.

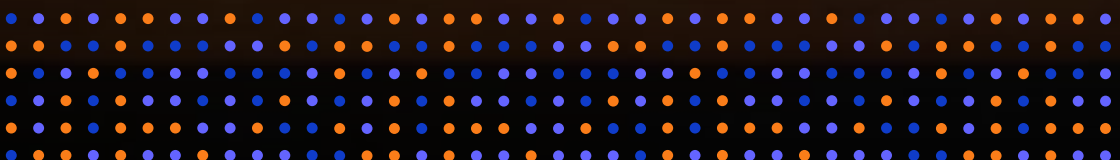
- For fault detection, maintenance and repairs, mechanics wearing a Jio Glass would be able to see Augmented Reality overlays on an actual machine such as an Enfield motorbike annotating part numbers, life remaining, inspection interval, etc. and even guide on how to perform a task such as replacing a spark plug.
- Also, in cases where an unskilled mechanic is unable to fix a problem at a remote site, access to a qualified engineer or an expert can be made available through Jio Glass. The expert would see the same machine as the mechanic and guide him through the fault detection and repair process. Thus, a mechanic in a rail yard can now have an engineer from Rail Bhawan look at the machine and help repair it without he/she being physically present.



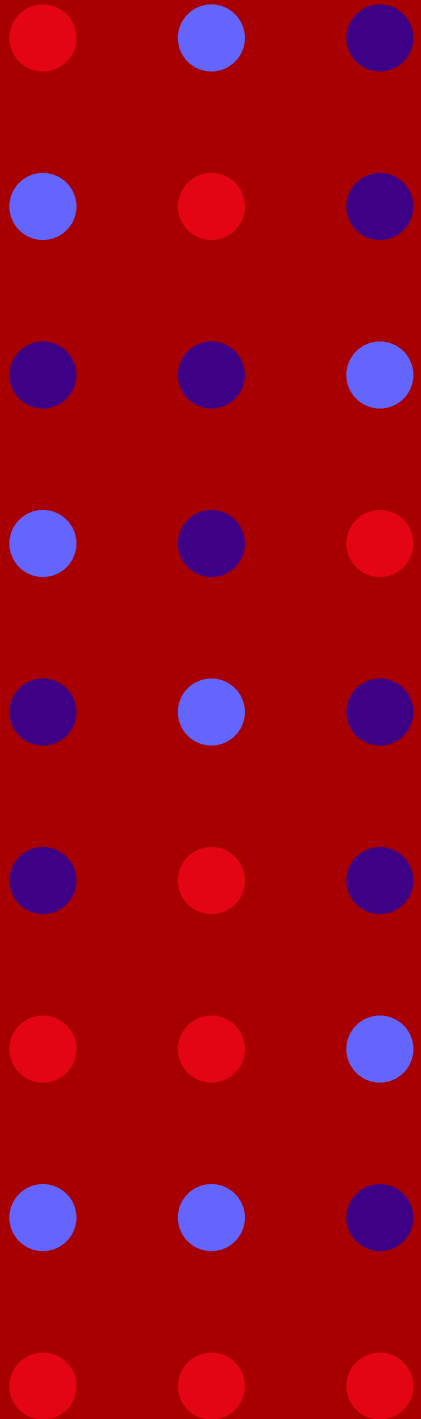


 **Faulty coil & cable**

SCREEN-4500-77225



**Home and
personal
use cases.**



Jio AirFiber

Clutter free, wireless, truly high speed connectivity will now be available to all in the form of Jio AirFiber.

- High broadband speeds up to 1 Gbps can be delivered wirelessly.
- Multiple devices including smartphones, PCs, tablets, Smart TVs and Set Top Boxes can connect simultaneously without loss of connectivity or compromise in internet speeds.
- The device is easy to install indoors using an installation application.
- In home wifi experience can be measured using the same application and a wifi extender can be purchased for extending coverage and resolving any coverage gaps in the home.
- Additional enhancements for safe browsing, network security and parental control provide a broadband experience that is safe and secure for the family.





Video streaming in ultra high definition – 4K/8K.

With 5G Hotspot or Jio AirFiber, entertainment at home is all set to become immersive like never before.

- High definition 4k/8K experiences can become ubiquitous, triggering in a new age in content production and realistic cinema.
- Stand alone to the rest of the 5G home will be the 8K television showing a playlist of 8K YouTube content, interspersed with Jio messaging about 8K streaming and the host of other viewing experiences enabled by Jio True 5G.
- Furthermore, with Jio Set Top Box, Jio TV, Jio Cinema and the overall Jio Content eco-system, entertainment experiences with 5G will be unparalleled.



4G



5G

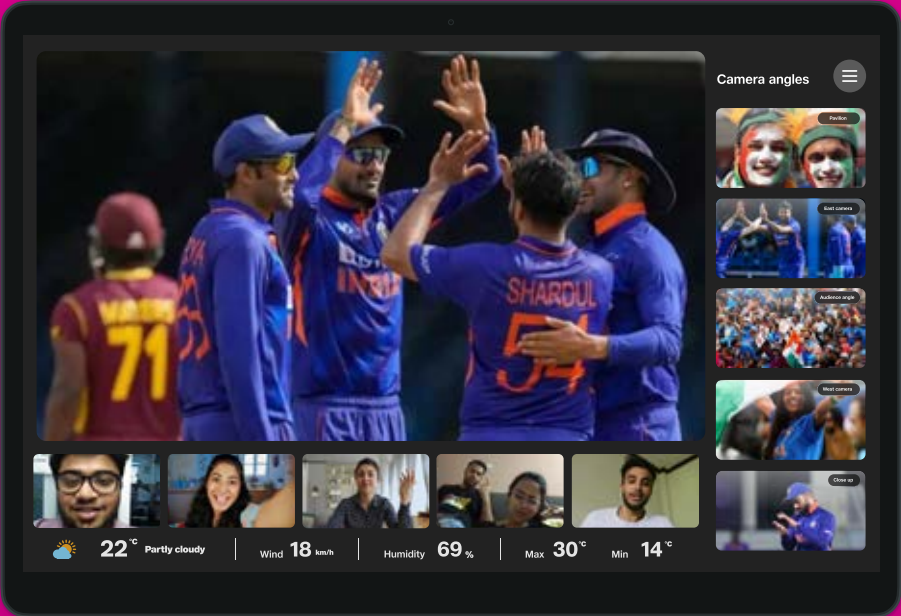


Ushering in a new era for immersive sports and live entertainment.

With Jio True 5G, users can expect to bring home an experience hitherto unseen in traditional television.

- With streaming services on Mobile or Set Top Box on applications such as Jio TV or Jio Cinema, User will be able to choose whichever camera angle they want to catch the action from.
- A viewer can choose how he wants to view live action, say in a cricket stadium. Whether to focus on the field positions or the bowlers run up, the batsman's stance or enjoy the ambience along with his friends, family and fellow spectators.
- One can invite their friends to a watch party and enjoy live streaming with similar fun and frolic like in an actual stadium.
- Users can also interact with Live TV, answer trivia, participate in Live Game Shows or enjoy interactive experiences on reality shows such as Big Boss, Khatron ke Khiladi and others.





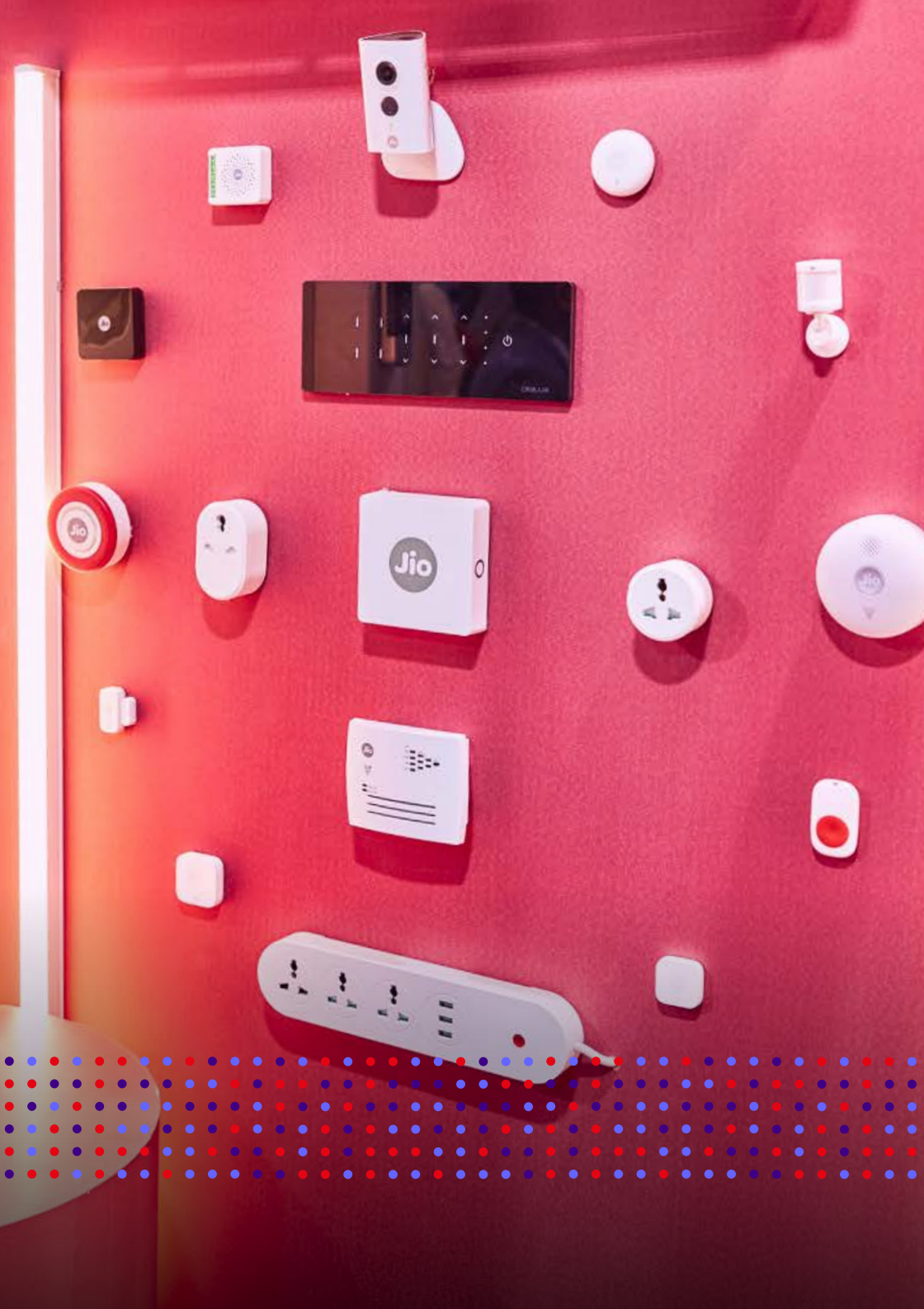
Smarter and safer homes for family and loved ones Jio.

Jio is set to redefine smart living with Home IoT sensors and Connected Appliances. With integration of 5G and IoT over Jio AirFiber, an array of services can come alive families.

- Monitoring can be done using a smartphone. One will be able to control things such as home lighting, appliances like the refrigerator, air conditioner, gas stove, ceiling fans and many other appliances.
- Smart Meters for gas, electricity and other utilities can integrate seamlessly with service providers and can make home visits for meter reading a thing of the past.
- With 5G's Ultra High Speed and low latency, adoption of Smart Surveillance will increase to provide an extra layer of security for homes.
- Security features will include seamless monitoring of visitors, delivery boys, nannies, maids, elderly parents and babies besides securing the home perimeter with AI based surveillance and security alarms / alerts.
- Analytics features like Face Recognition/Face tagging, Motion detection, Area labeling will make home dwellers feel more secure than ever.



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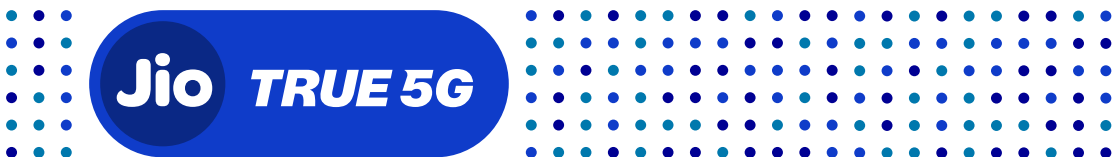


Quality and affordability for every Indian with JioBook/JioPC.

JioBook is a new age, reliable laptop offering the highest performance in its class, at affordable price. JioPC is plug and play Cloud PC device that enables user to get connected to the world from home.

- The JioBook is an excellent combination of connectivity and convenience that is power packed with an array of features that makes it a perfect companion for all family members.

- Jio PC delivers many use cases like work from home, study from home along with infotainment thereby catering to needs of every member of the family.
- With its affordable reach and innovative power packed technology, JioBook and Jio PC are all set to bring digital solutions and connectivity to millions of Indian homes and further the mission of Digital India.





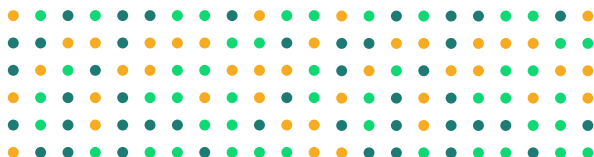
**Gaming
use cases.**

Cloud gaming on JioGames.

High Quality Gaming have thus far required either a Gaming Console or a high end Gaming PC, thus been restricted to a privileged few. With Jio True 5G, High Quality Gaming is set to become accessible to one and all.

- With ultra low latency and high bandwidth of Jio True 5G, Gamers will now have OTT like service on Jio Cloud Gaming wherein they will be able to access high quality Games from anywhere without the need for expensive hardware or separate purchase of costly game titles.

- With its complete in house Cloud Gaming solution on Jio GamesNow, gamers can subscribe to play over 100 Games using their mobile or Set-Top Box.
- Play from anywhere using Jio Games on Jio True 5G.



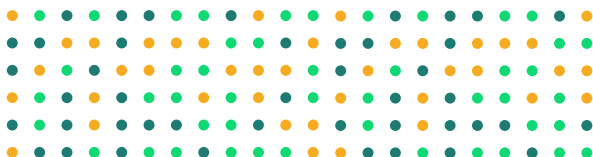


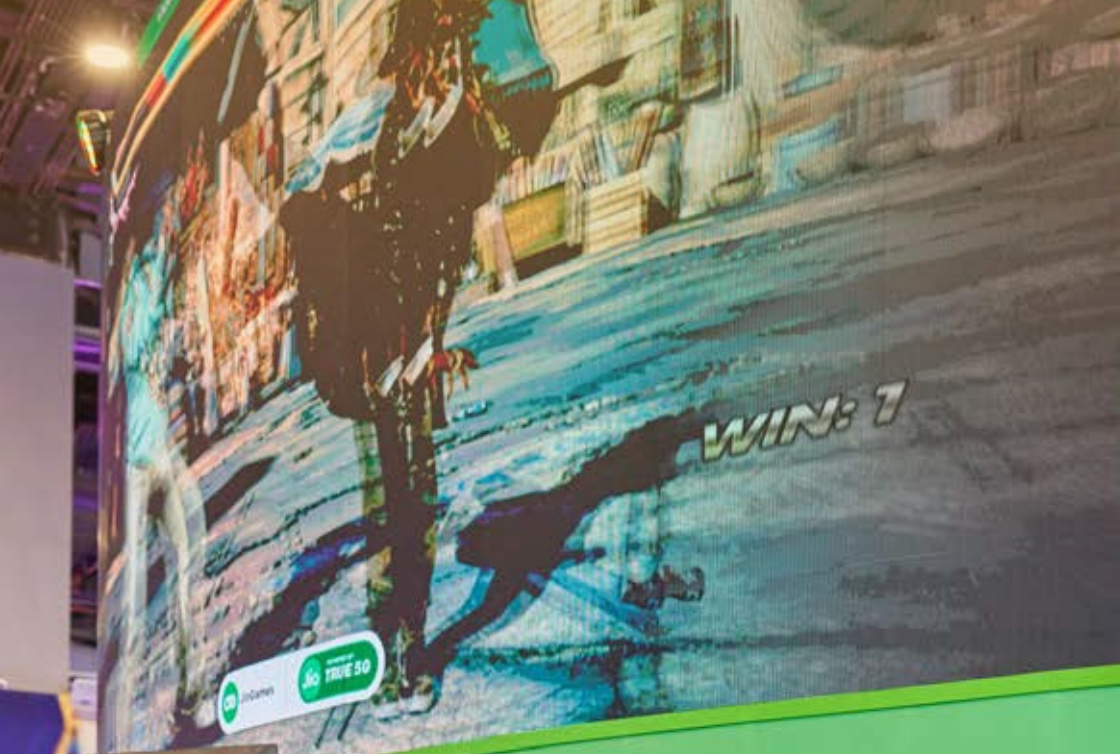
E-Sports, level up your game.

High quality fixed line broadband Internet has been the backbone of the E-Sports Industry, which has now been gaining global prominence with E-Sports making its debut in the 2022 Commonwealth and Asian Games. With fixed broadband having limited reach, the Indian E-Sports arena has had to content to limited access areas even though Indian Gamers have gained global recognition in the recently concluded Commonwealth Games.

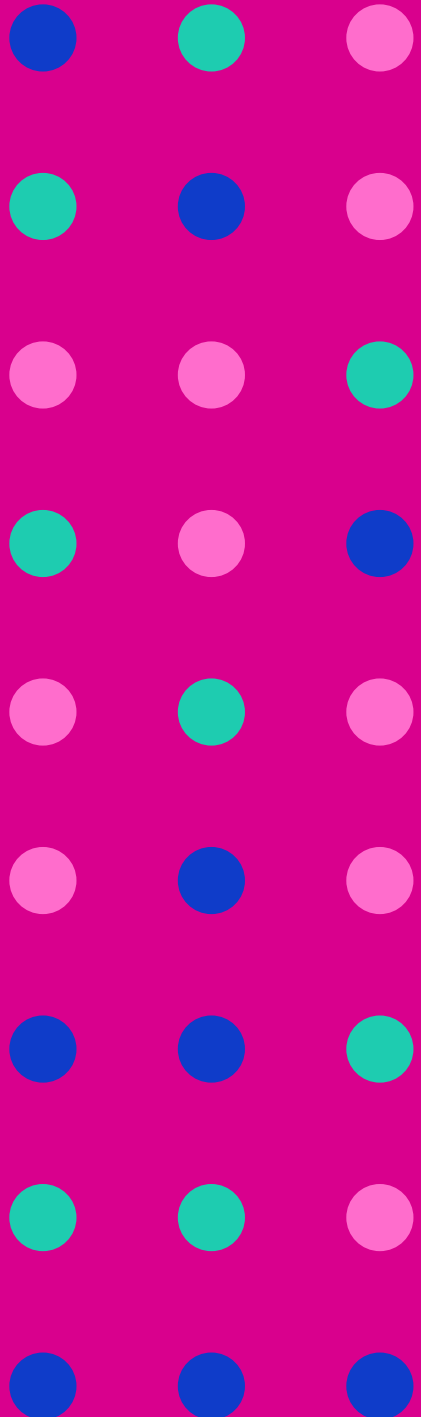
With Jio Games and Jio True 5G, E-Sports in India is poised to get a significant boost.

- Gamers can now compete from anywhere, using any device powered by the ultra low latency and high bandwidth of Jio True5G.
- Furthermore, content creators can create gaming content and streamers can enjoy high quality games from anywhere and on any device using the High Bandwidth of Jio True 5G.





Immersive AR/VR use cases.



Enabling the meeting of real and digital world with Jio Glass mixed reality experiences.

Mixed Reality is a unique convergence of real and digital worlds, where users can see digital information and elements embedded within their real world. While such experiences have immense applications across education, training, entertainment, gaming, learning and shopping, High quality device and connectivity and wearable device is an essential prerequisite.

- With its indigenously built Mixed Reality wearable device - Jio Glass and the power of Jio True 5G, India is all set to welcome a new generation of Mixed Reality Experiences that is scalable and accessible for wide audiences and consumers.

- While Jio Glass enables to host a platform of 3D Content, Jio True 5G allows to offload computation and storage from the Mixed Reality devices to the cloud, which results in lighter and sleeker AR and VR devices and applications promoting faster adoption.
- Jio True 5G on JioGlass enables movies and video viewing without buffering on a 100-inch screen, real-time 3D avatar creation and asset downloads, and collaboration through XR devices in real time, anytime, anywhere.
- Jio Glass is already host to over 200 applications including games such as Asphalt Racing, immersive experiences such as in Roller Coaster, health and wellness applications such as AR Yoga and Meditation, besides learning, training and cooking.



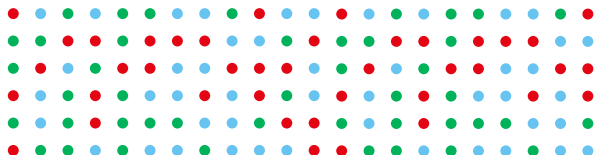
Jio *TRUE 5G*

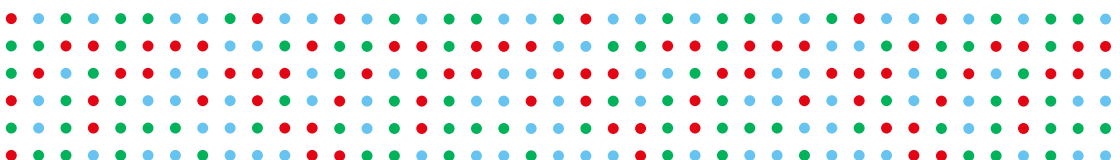
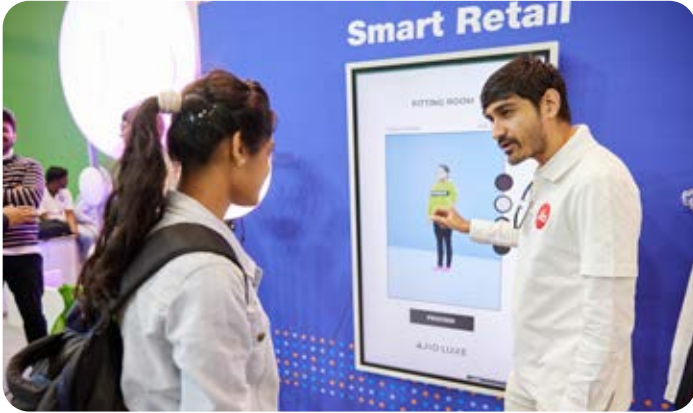


Augmenting the shopping experience in India.

Present physical shopping experiences may limit options to choose and try due to hygiene and other restrictions. With Jio True 5G, retail experiences are set to undergo a transformation.

- Users can now create their own 3D avatar using a depth sensor enabled camera.
- A life-sized smart mirror can be used to virtually try on from a variety of clothing options. One will be able to choose the style and look before finalizing. This can significantly boost selection choices available to the customer and enhance their shopping experience.
- While an avatar creation of such type take hours and days to create, with the power of Jio True 5G, it can be created in minutes leading to this new era of Shopping and Retail.





Virtual reality shopping in Metaverse.

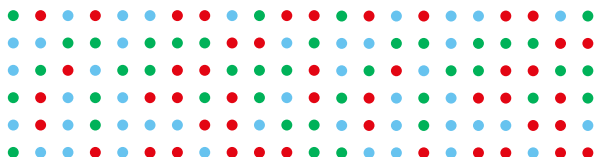
Shopping today is either physical or digital. While e commerce allows for infinite choices and variety, it definitely limits scope for physical trials, especially those having physical form factors such as toys, furniture, apparel and others.

With Virtual Reality Technologies, powered by Jio True 5G, the future of the web and shopping can become 'Phygital' in the Metaverse.

A customer from Satara will now be able to virtually enter a Hamley's store in Mumbai, or a visitor in Navi Mumbai will be able to experience a handicraft emporium in Jaipur.

Imagine trying and experiencing merchandise, from a physical shop without actually being in it.

- Jio will enable this with VR headset or mobile device. One can have an immersive experience of a physical store, browse and see all merchandise in 3D, place them in the cart and checkout online using virtual payment gateway.







Get in touch.



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