

The logo for iBurst features a stylized sunburst icon to the left of the word "iBurst" in a bold, sans-serif font. The background of the entire advertisement is black with several grey, elongated, rounded rectangular shapes radiating from the top left towards the center, resembling a stylized sun or a network diagram.

iBurst™

MBWA



Speed of DSL

Freedom of Cellular

Industry's Only Viable
Economics



MASIYA

THE NEW VALUE FRONTIER

 **KYOCERA**



The promise of the wireless Internet has long been unfulfilled. Wireless data has suffered from low speeds, limited availability and high costs. Prior broadband attempts have been constrained by their technologies.

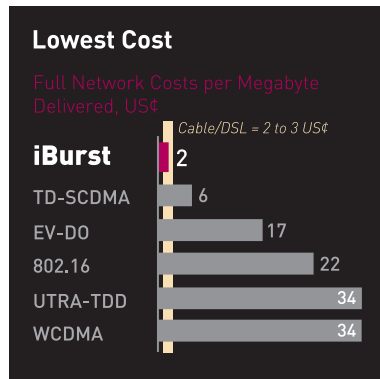
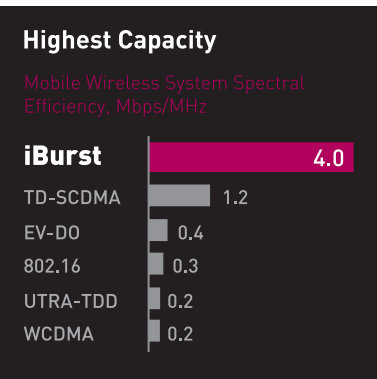
For the first time, Kyocera and ArrayComm have untethered the broadband Internet and opened the door to a new class of services.

Now you can offer the full Internet experience subscribers have come to depend on, but anywhere they happen to be. In their customer's office, at their friend's place, or in the taxi on the way to the airport. Subscribers can use all their corporate applications, tap the web for all it's worth — without worrying about finding a high speed connection or enduring endless service hassles. The unprecedented coverage and capacity of the iBurst system enable lighting up a whole city with wireless broadband for a small fraction of the cost of any other technology, so the vision of a ubiquitous Internet can now become reality. The people who have experienced the iBurst™ system can no longer imagine life without it.

All this is possible because the iBurst Broadband Wireless System was designed from the ground up to deliver wide-area broadband access with the industry's first truly viable network economics. It takes maximum advantage of ArrayComm's proven smart antenna technology to yield unmatched base station range and capacity, uses TDD spectrum for high efficiency and low cost, is designed around well-established data network architectures to ease integration with existing Internet services, and can be deployed in existing cell sites. Kyocera and ArrayComm have built a superb partnership to commercialize iBurst technology and bring it to market, so operator needs for world-class quality, support, and scale are met right out of the box.

Industry's Only Viable Economics

Range and coverage are key in the early stages of a network's deployment. As the subscriber base grows, system capacity



The iBurst system's range and capacity lead the industry, yielding a dramatic advantage in network economics for iBurst operators

Sources: Vendor claims, deployed system performance (for iBurst), McKinsey, and ArrayComm analysis.



quickly becomes key to an operator's business success. The iBurst system offers operators both superior coverage and capacity. Delivering consistent 1 Mbps real-world user data rates today (with 2 Mbps coming in the next system release), quality coverage, and range exceeding cellular networks even in challenging urban environments, the iBurst system delivers excellent initial network performance.

For a mature network, ArrayComm's unique spatial channels technology gives Kyocera's iBurst system more than three times greater capacity per operator dollar than the closest wireless alternative and more than ten times today's 3G or tomorrow's promised WiMAX equipment. Its costs are in line with cable or DSL, but with the added value of full support for mobility now. Operators around the world are recognizing that offering subscribers the freedom of wireless broadband today — at the low cost of an iBurst network — is a profitable opportunity they can't afford to ignore.

Fitting into Today's Networks

Beyond range, coverage, and capacity, the iBurst system is designed to make things easy for operators on the network side as well. Rather than requiring an entirely new data infrastructure, an iBurst network is an extension of the wired broadband access network of today. The iBurst system is pure IP top to bottom, can leverage existing IP infrastructure, and is compatible with all IP-based applications, services and content. This open IP-centric

architecture helps wireless network operators achieve rapid time-to-market. Plus, there's no impact on valuable voice spectrum or existing voice services. Service providers can use the same content and provisioning tools that they use for their wired broadband customers. Users get to enjoy all their favorite broadband applications — Internet access, e-mail, corporate applications over VPN, VoIP, streaming video, on-line gaming — all on standard platforms such as Windows, Linux, and Macintosh. No special client software is required for iBurst other than the iBurst modem driver for laptops and desktops. Off-the-shelf routers and WLAN Access Points that support the ubiquitous PPPoE protocol plug directly into an iBurst desktop modem with no additional software.

Proven Technology

Kyocera has been manufacturing carrier-grade telecom equipment for more than 21 years, and the Kyocera-ArrayComm partnership spans more than 8 years of success. Their collaboration has brought ArrayComm's patented IntelliCell™ smart antenna techniques to market in over 200,000 Kyocera base stations deployed worldwide. The iBurst air interface marries smart antenna techniques with the

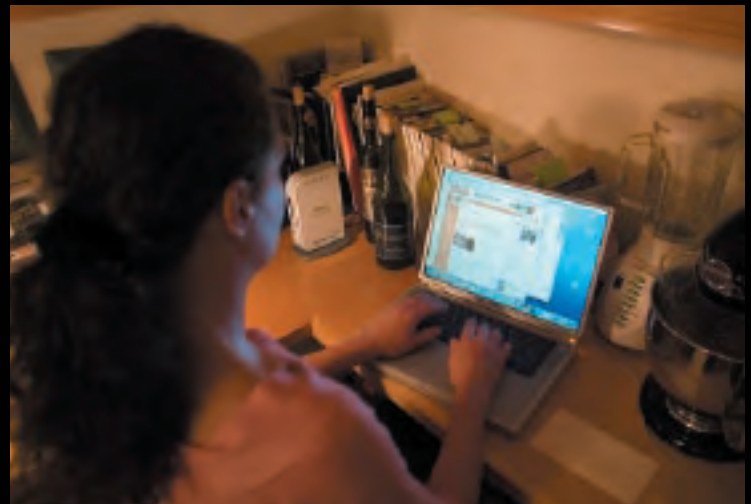
industry's best practices for wireless data, including adaptive modulation, fast ARQ, and a QoS-cognizant scheduler to create a high-performance, reliable, and high-capacity data delivery mechanism. The iBurst system's maturity and stability have been proven in all its deployments and trials to date, where its performance has exceeded every expectation.

"Many wireless technologies can achieve high data rates for small numbers of users. But to build sustainable businesses in broadband wireless, operators must have systems with the extended range and high capacity that can only be achieved with smart antennas. The success of the Kyocera-ArrayComm team with real-world deployments of smart antennas is unmatched, and their technology gives the iBurst system a significant performance edge."

— Andy Feurtes, Senior Analyst
Visant Strategies

"Kyocera and ArrayComm have chosen the right mix of end user speed, range, configuration, and capacity in their first release of iBurst equipment, allowing operators to offer both fixed and mobile services that fit the wireless access market today and in the future. Our assessment of the field has shown that the iBurst system's overall performance is truly superior. Its base station capacity, a metric critical to our long-term success, is at least 3 times higher than the closest alternative and 10x the rest of the pack. With Kyocera's world-class quality and ability to drive subscriber modems down the cost curve — coupled with the availability now of field-proven product — we're excited about launching our business on the iBurst system."

— Lee Gopadze, President
BroadbandOne Networks



All the Benefits of a Standard Without the Wait

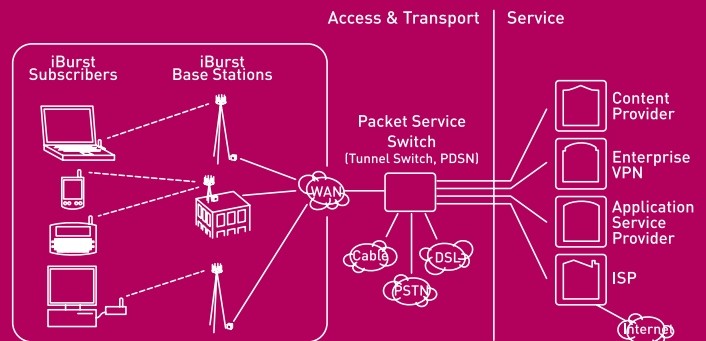
Most operators are rightly interested in making network technology choices that ensure multiple and credible sources of supply, the benefits of scale economies in equipment costs, interoperability, and a proper voice in the technology's evolution. Given the current wireless standards landscape, the challenge for operators is reaping these benefits without missing present market opportunities. The iBurst system solves this paradox. It offers the latest technology and industry's highest performance in commercialized product you can install today. Kyocera and ArrayComm are both committed to fostering a multivendor environment for the iBurst system, and ArrayComm's list of iBurst licensees continues to grow. Interoperability is ensured by ArrayComm's management of the modem chipset design and protocol definition, along with the activity of the iBurst Forum, the venue for operator and manufacturer collaboration. These efforts provide the important benefits of standardization to the iBurst community in the near term, and formal standardization by credible standards bodies is in process for the longer term.

Come Experience It Yourself

Personal Broadband Australia (PBBA) has launched commercial iBurst service in Sydney. Their system is the industry's most extensive deployment of mobile broadband, covering more than 300 square km of urban landscape with just 11 base stations. User feedback has been overwhelmingly positive and their subscriber base is growing daily. PBBA welcomes visits from prospective operators — just contact Kyocera for more details on how to experience the splendid performance of the iBurst system yourself.



iBurst Network Architecture



The iBurst system is a direct extension of the open Internet architecture, allowing users transparent access to a full range of applications, services and content — and letting operators to build on networks they already own

For more information, see <http://www.kyocera.com>



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KYOCERA Corporation





iBurst Access Card

Fulfilling the promise of broadband wireless freedom

Kyocera's iBurst Access Card creates a subscriber experience unlike any other Internet access technology. With the card plugged into any laptop with a PCMCIA interface, subscribers can roam freely anywhere within an iBurst network's coverage area and receive true broadband speeds — even while on the move in a taxi or commuter train. The Access Card delivers up to 1 Mbps downlink and 346 kbps uplink data rates today, with 2 Mbps downlink / 700 kbps uplink coming in the next system release. Handoffs between base stations are automatic and completely transparent to the user, as the Card continuously optimizes its base station connection for best signal strength and network load balancing. If the laptop is equipped with built-in WiFi, the subscriber can even roam seamlessly between iBurst and wireless LANs.

The high efficiency of the iBurst protocol means the Access Card draws less precious battery power from a laptop than most WiFi cards, even while communicating at multi-kilometer ranges to iBurst base stations. The easy plug-and-play installation of the Card helps new subscribers get up and running in just a few minutes.

For service providers, the iBurst Access Card offers very low cost provisioning (there's no truck roll required to put a card in a laptop!) along with encryption and authentication for enhanced security and quality of service management to enable tiered service offerings.



iBurst Access Bridge

Effortless fixed and portable internet access

Kyocera's iBurst Access Bridge helps operators take the hassle out of broadband. Subscribers can install the modem themselves without worrying about where a wire comes out of the wall, and it eliminates the truck roll and line conditioning that are frequently still required for wired broadband access. In addition, since the Access Bridge automatically establishes and maintains an optimized base station connection just like the iBurst Access Card, subscribers can relocate the modem anywhere in an iBurst coverage area — whether to a different room or across town — and reconnect as soon as they turn it back on.

The Access Bridge provides up to 1 Mbps downlink and up to 346 kbps uplink IP bandwidth in a small desktop modem that can be connected via Ethernet or USB to a PC or any off-the-shelf router or WiFi access point supporting the ubiquitous PPPoE protocol. (Data rates of 2 Mbps downlink and 700 kbps uplink are coming in the next iBurst system release.) The Bridge can support a single desktop PC user directly or provide connectivity for all devices on a wired or wireless LAN at home, in the office, or on a public WLAN. The ease of re-connection also enables temporary or portable WLAN deployments that offer subscribers whole new levels of access convenience and novel modes of work and play.



iBurst Base Station

Industry-leading range, capacity, and coverage quality

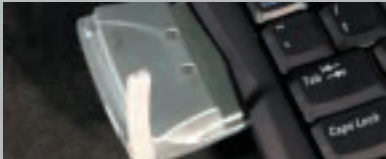
Kyocera's iBurst Base Station is the heart of the iBurst system. Its implementation of ArrayComm's smart antenna-based iBurst protocol, combined with Kyocera's superior carrier-grade productization, give it the industry's highest performance in range, capacity, and coverage quality. Alone among the various technologies being delivered (or promised) for wide-area broadband wireless, Kyocera's iBurst Base Station allows operators to build viable businesses in just 5 MHz of spectrum. Purely fixed services are an excellent *start* in broadband wireless, but in most markets represent a shrinking rather than growing opportunity. Given continued advances in wired broadband coverage and cost, the ability to provide mobile broadband services is essential. With cellular voice and many other applications already occupying the lower-frequency licensed spectrum ideal for mobile terminals, wireless broadband networks must use the limited spectrum still available with maximum efficiency. The iBurst system meets this challenge with proven, unsurpassed performance.

Kyocera's iBurst Base Station is designed for flexibility in deployment, accommodating both rooftop and tower-top configurations. The separate-PA/LNA architecture can be used to reduce transmit-power and noise-figure losses from long coax runs where desired. The base unit and PA units are fully ruggedized for outdoor installations, eliminating the need for any additional protective enclosures or environmental conditioning on site. The system can be configured to use an array of up to 12 antennas. Antenna selection can be optimized for each site's specific geographic coverage objectives. The iBurst Base Station can self-calibrate to virtually any configuration of off-the-shelf antennas, without precise mounting or siting constraints.



iBurst Access Card Specifications

Card Type	Type II PCMCIA
Platform	Windows or Macintosh Notebook PC
Data Interface	PCMCIA
Size	125 L x 56 W x 14 T mm
Antenna	Integrated dipole includes connector for optional external high gain antenna
Transmit Power	20 dBm
Frequency bands	1.79, 1.9, and 2.3 GHz today, customization to other bands available
User Data Rate	up to 1061 kbps downlink up to 346 kbps uplink
Power Consumption	3.3 W maximum



"Anybody could install it. I plugged the card in, put in the CD, and it all just worked from day one. It's been incredibly easy, and the performance has been amazing."

**Bill Dekker, Director
Cap Gemini Ernst & Young
Australia**



iBurst Access Bridge Specifications

Form Factor	Standalone modem
Platform Compatibility	Any Internet device, including desktop or notebook PC, router, or WLAN access point
Data Interface	10/100 Ethernet and USB2.0
Size	132 L x 39 W x 186 H mm
Weight	Approximately 350 g
Antenna	Integrated monopole includes connector for optional external high gain antenna
Transmit Power	25 dBm
Frequency bands	1.79, 1.9, and 2.3 GHz today, customization to other bands available
User Data Rate	up to 1061 kbps downlink up to 346 kbps uplink
Power Source	110/240 VAC
Power Consumption	6 W maximum

"One of our most prestigious customers, an insurance company in downtown Sydney, is supporting a whole office full of employees with a single iBurst Access Bridge. The system's performance is simply outstanding!"

**David Stevens,
Managing Director
SecureTel**



iBurst Base Station Specifications

Airlink Protocol	iBurst Protocol v1.2
Multiple Access Method	TDMA and SDMA
Duplex Method	TDD
Bandwidth	5 MHz
Carriers	8
Spatial Channels	3
Antennas	12 maximum, compatibility with wide range of standard antenna models
Transmit Power	33.8 dBm/user maximum
Synchronization	Frame synchronization to GPS
Network Interface	100 Base-TX standard optional 100 Base-FX, OC3/ATM, or DS3/ATM
Redundancy	N+1, N-1 redundancy with hot-swap
Base Unit Size	665 W x 900 H x 665 D mm
Base Unit Weight	Approximately 100 kg
PA Unit Size	390 W x 550 H x 256 D mm
PA Unit Weight	Approximately 37 kg
Frequency bands	1.79, 1.9, and 2.3 GHz today, customization to other bands available
Total Data Rate	nominally 20 Mbps aggregate throughput (depends on service definition and other deployment parameters)
Power Consumption	2.4 kW maximum
Environmental	Operable from -20 to 50°C, indoor or outdoor

"We are delighted with the solid performance of Kyocera's iBurst equipment in Sydney as well as the skill and dedication of their development team. The performance of the base stations and the commitment of the Kyocera support team have exceeded our expectations, and we are looking forward to bringing iBurst to the rest of Australia."

**Jim Cooney, CEO
Personal Broadband Australia**

