



Impinj Gen2X Performance Solution Toolbox

30 on shelf
55 in back

GEN2X™



Gen2X Performance is a toolbox of Impinj RAIN RFID innovations that unlock use cases for real-time, item-level visibility and traceability by improving the read range, accuracy, reliability, and speed of RAIN RFID enterprise solutions.

Supports
GEN2X™

RAIN RFID products and solutions are widely available with support for Gen2X

Standards-compatible and widely available

Developed by Impinj through our work solving tough operational challenges for visionary Fortune 500 enterprises, Gen2X is a standards-compatible enhancement to the RAIN radio standard (Gen2) that either solves previously unsolvable use cases, reduces overall solution cost, or both. Already supported by more than 50 reading solutions and over 100 production tags, Gen2X Performance is widely available across the industry and — thanks to its seamless interoperability with the RAIN standard — is an easy upgrade to both new and existing enterprise deployments.

Why use Gen2X Performance

Designed for enterprise-grade RAIN RFID enterprise solutions, Gen2X Performance allows enterprises to connect more items, automate operations, and improve frontline worker efficiency and utility.

Expand item visibility to more items and reduce inventory blind spots

Gen2X improves read range and tag readability, especially for small tags on hard-to-read items, enabling fast, reliable reading of new use cases, like health and beauty tagging, even in challenging environments.

Automate operations with highly accurate, real-time item traceability solutions

Gen2X improves accuracy for tracking, detecting, and verifying items on the move through dock doors, on conveyors, and at store exits by reducing stray tag reads and improving reader performance.

Improve frontline worker efficiency with faster inventory counts

Gen2X speeds handheld inventory cycles by up to 100%, reducing labor time and enabling employees to focus more on customer-facing tasks.

Unlock frontline worker utility with high-performance RFID-enabled employee mobile devices

Gen2X boosts performance of mobile RFID reading devices by improving read range and rapidly finding items-of-interest, such as food products nearing expiration, while reducing RFID power consumption.

A toolbox of performance innovations for tagging and reading solutions

Gen2X is a toolbox of innovations supported in tags powered by market-leading Impinj M800 series endpoint ICs, as well as the latest versions of Impinj M77x and M78x endpoint ICs. RAIN readers, including Impinj R700 series readers and over 50 readers and modules based on Impinj E Family reader ICs, can be upgraded to support Gen2X with the latest firmware. Readers and tags can be Gen2 standard-compliant and also support Gen2X, dynamically alternating between Gen2 and Gen2X inventory operations such that Gen2X consistently boosts performance, even in mixed tag populations.

Reader sensitivity improvements

Improved tag-to-reader waveform modulation and encoding that improves reader sensitivity by up to 6 dB, increasing reader listening range up to 40%.

Fast inventory and fast re-inventory

Configurable parameters that reduce tag reply data and short-cycle inventory operations when re-reading tags-of-interest, speeding inventory up to 100%.

Tag selection

Gen2X inventory command (ScanID) includes tag select criteria to ensure only tags-of-interest participate in inventory rounds.

Tag sensitivity improvements

Improved reader-to-tag power delivery that increases tag power range up to 25% by improving tag sensitivity by up to 2 dB.

Tag link protection

Link protection on tag replies reduces link errors and cross-reads in multi-reader environments that degrade system performance.

Tag quieting and TagFocus

Allow readers to silence already-inventoried tags and focus on new and/or weaker tags, to improve read performance in cluttered tag populations.

Gen2X Performance Impinj Product Support		 M77x/M78x ¹	 M800 Series ²	 E Family ³	 R700 Series ⁴
PERFORMANCE INNOVATIONS	Reader sensitivity improvements	✓	✓	✓	✓ ⁵
	Tag sensitivity improvements	✓	✓	✓	✓
	Fast Inventory and Re-Inventory	✓	✓ ⁶	✓ ⁷	✓ ⁷
	Tag Link Protection	✓	✓	✓	✓
	Tag Selection	✓	✓ ⁸	✓	✓
	TagFocus	✓	✓	✓	✓
	Tag Quieting	✓	✓	✓	✓

1. All M78x ICs support Gen2X Performance; M77x ICs only support Gen2X Performance in latest IC version

2. All M800 series IC versions support Gen2X Performance; Fast Re-Inventory and Tag Selection are only supported in latest IC versions as noted below

3. Based on latest Impinj E Family reader chip SDK release v2.2 or later

4. Based on latest Impinj R700 reader firmware release v10.3 or later

5. Impinj R700 does not support optional symbol encoding improvements

6. Fast Re-inventory is only supported in the latest versions (v3 or later) of M800 ICs

7. Fast Re-Inventory support in E Family and R700 is limited in availability and requires system design considerations – contact support@impinj.com

8. Tag Selection is only supported in the latest versions (v2 or later) of M800 ICs

Ready to discuss how Impinj
can help your business?

Contact us: www.impinj.com

Impinj (NASDAQ: PI) helps businesses and people analyze, optimize, and innovate by wirelessly connecting billions of everyday things—such as apparel, automobile parts, luggage, and shipments—to the Internet. The Impinj platform uses RAIN RFID to deliver timely data about these everyday things to business and consumer applications, enabling a boundless Internet of Things.