SENSTHYS READER

TESTING OF READER PERFORMANCE

TOPICS

- Introduction
- History
- Products
- Quality and Certifications
- Business Development
- Investors and Partners

THE PROBLEM

- Data analysis →

- **DATA COLLECTION →**

TOTAL SOLUTIONS

- Hardware
  - Excellent design, quality and reliability
  - Unmatched diversity of sensors
- System Install
  - 90W PoE system
  - Data and power networking
  - Wired, WiFi, or Cellular comms
- Software
  - Console, API, SDK
  - AutoSens
  - Control Center

TIMELINE

2014

Times-7

- InSite leads investment round
- InSite leads development, sales and CEO function
- InSite team **designs the slimline A5010** for Times-7

2015

SensThys Funded

- Funding by InSite and Hunt Holdings
- **Key technologies in-house**
- 4 Ph.D.'s, 30 years of technical achievements in RFID
- 30+ team patents

2017

SensArray Introduced

- **Full RFID system** introduction
- RFID Live! Best Product Finalist

2018

Building

- Acquired Digame
- High volume antenna
  - 9 dBic, IP67

2019

Partner with MTI

- Leading manufacturer specializing in RF
- Joined RAIN RFID
- IP67 Reader

A TEAM FORMS

SENSTHYS TEAM

MTI RFID SQUAD

TESTING

DATA AND CUSTOMERS TEACH US

SensThys Proprietary and Confidential

RFID READER PERFORMANCE

- Customer-focused testing
  - Industrial laundry
  - Race timing
  - Refrigerator (Faraday cage)
- *Many* UHF readers evaluated

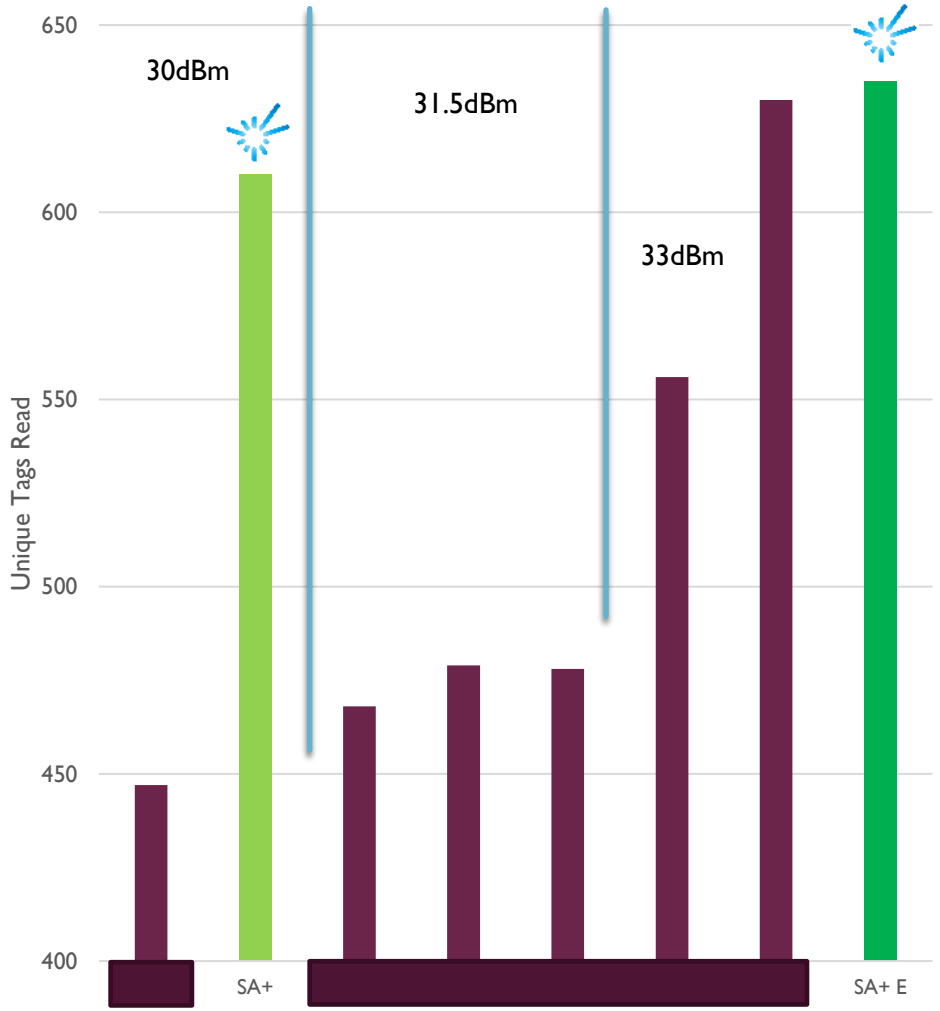
WHO IS AT THIS TESTING?

MFG	STM	PhyChips	SensThys	Alien	Alien	Zebra	Zebra	Impinj	SensThys
Product	3393	Red 5	SA+	9900+	F800	7500	9500	420	Pro
Power (dBm)	29	30	30	31.5	31.5	31.5	33	33	33

TEST ONE – THE LAUNDRY INDUSTRY

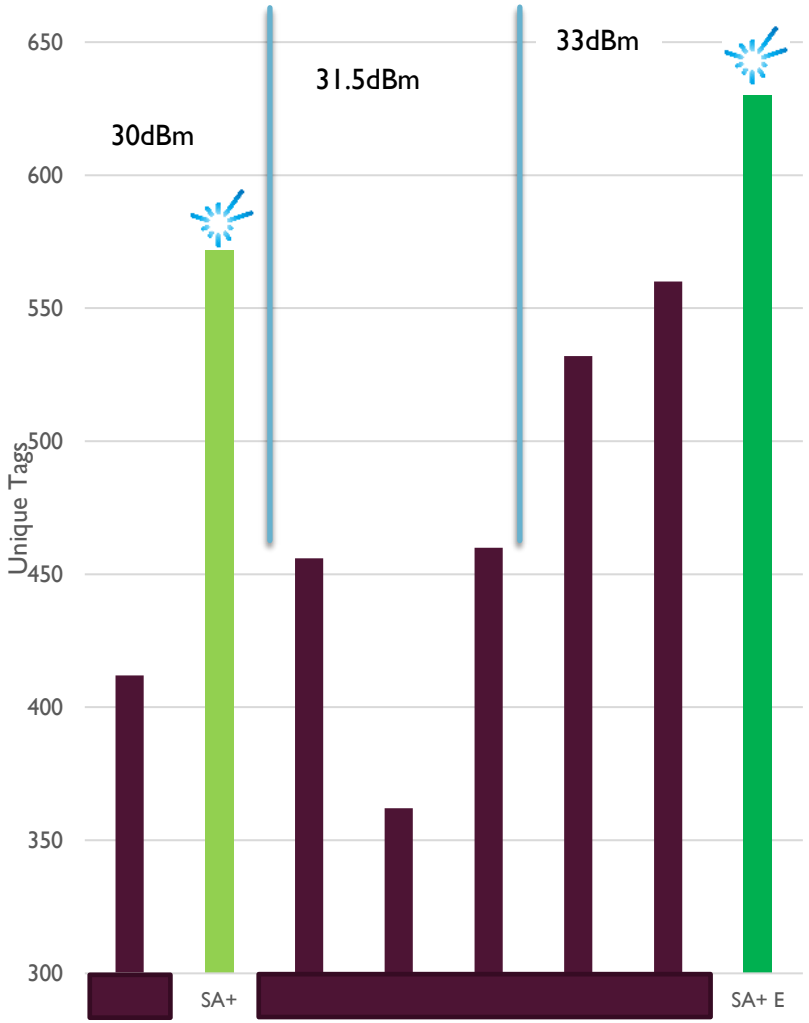
- The “ChadRoll”
  - 713 tags, 5 different tag types, random tag polarizations
- 9 different readers, 7 different manufacturers
- Read times of 3, 10 and 60 seconds
- Single and multiple antennas attached to reader

60 SEC READ 1-ANTENNA



- SA+ E sees 89%
- SA+ sees 86% of tags
  - GREAT performance for 30 dBm

10 SEC READ 1-ANTENNA



- SA+ E sees 88% of tags
- SA+ sees 80% of tags

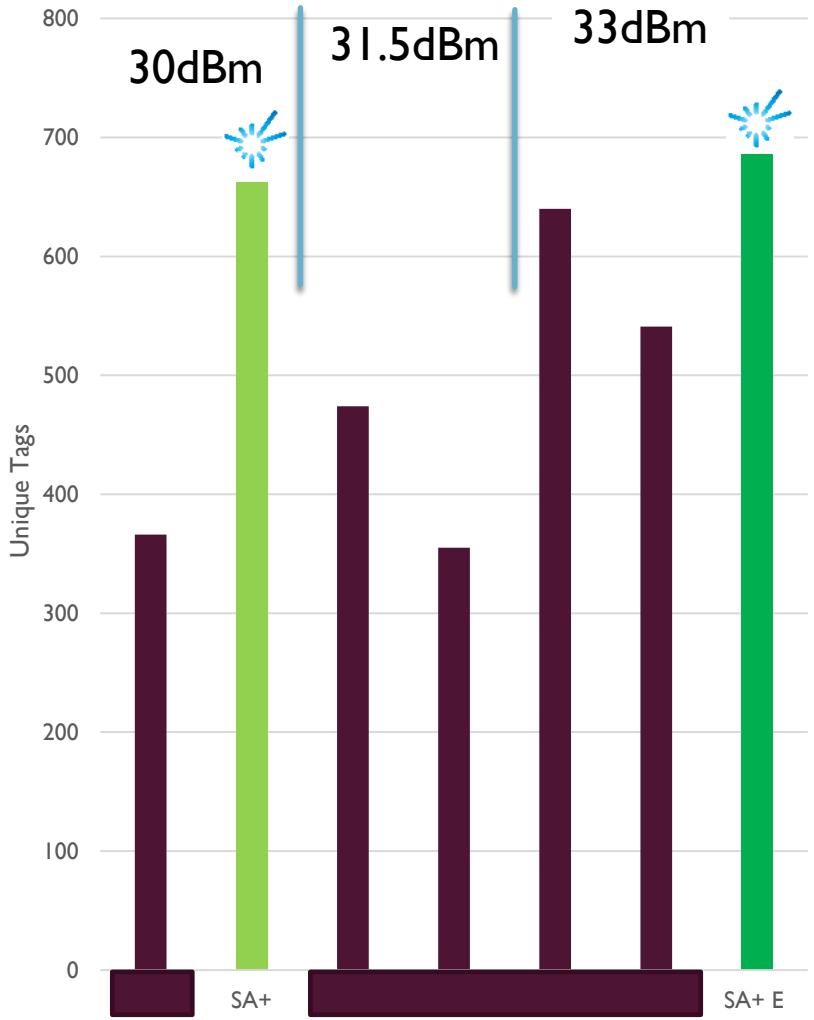
KEY POINTS – SINGLE ANTENNA

- For short read times SensThys is compelling
- ***In 10 sec, SA+ E sees more tags than <u>any</u> other reader sees in 60***
- For long read times
  - The SA+ E and one 33 dBm reader are great
  - The SA+ (30 dBm) beats all but one enterprise-class reader

60 SEC READ PERFORMANCE – 2 ANTENNAS

- SA+ E and Zebra 9500 tie!
  - Read 99% of tags

3 SEC READ PERFORMANCE - 2 ANTENNAS

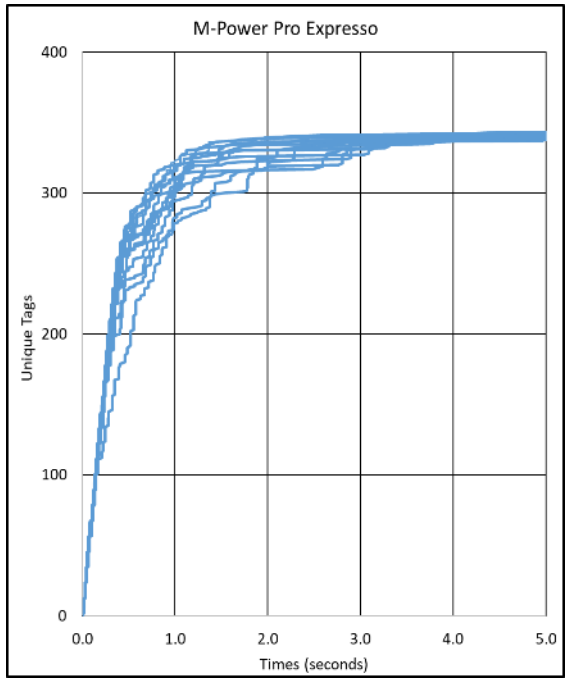


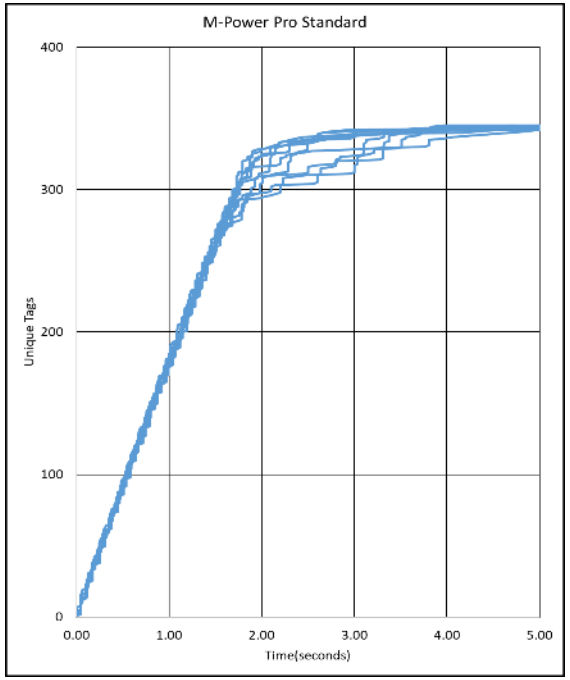
- The SA+ E ***in 3 sec beats all but one reader result at 60 sec***

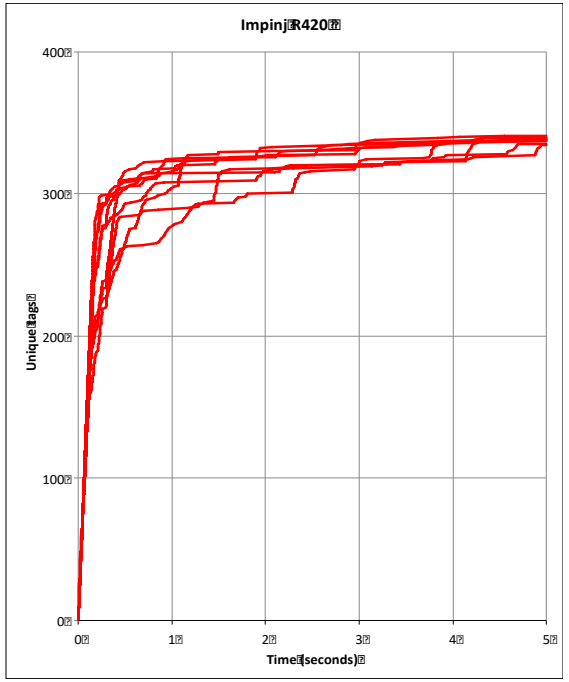
TEST TWO → THE BAD BOX

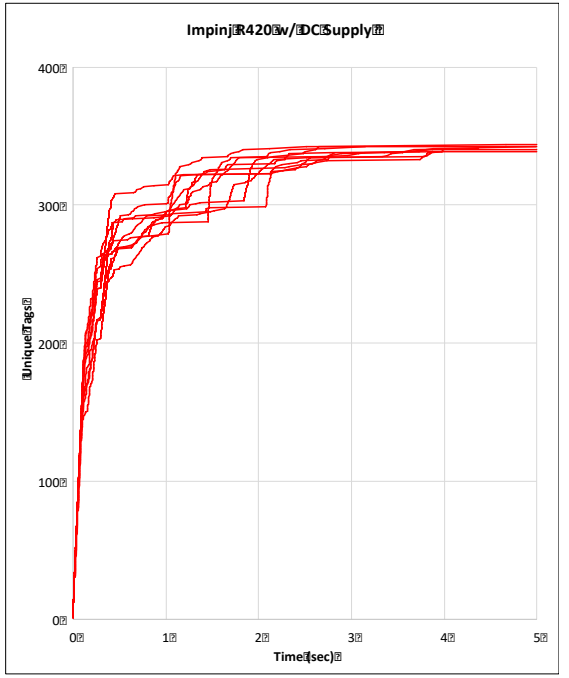
- Customer requests benchmark
  - **M-POWER** vs. R420
- Mimics small refrigerator
  - Conducting walls
  - RF reflective environment
- Faraday cage
  - ~30cm x 60cm x 60cm
  - 360 tags

BAD BOX DISTRIBUTIONS



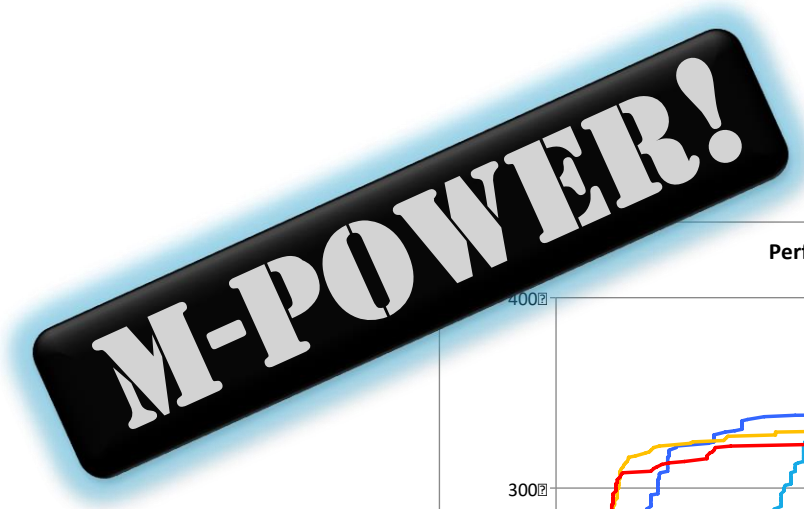




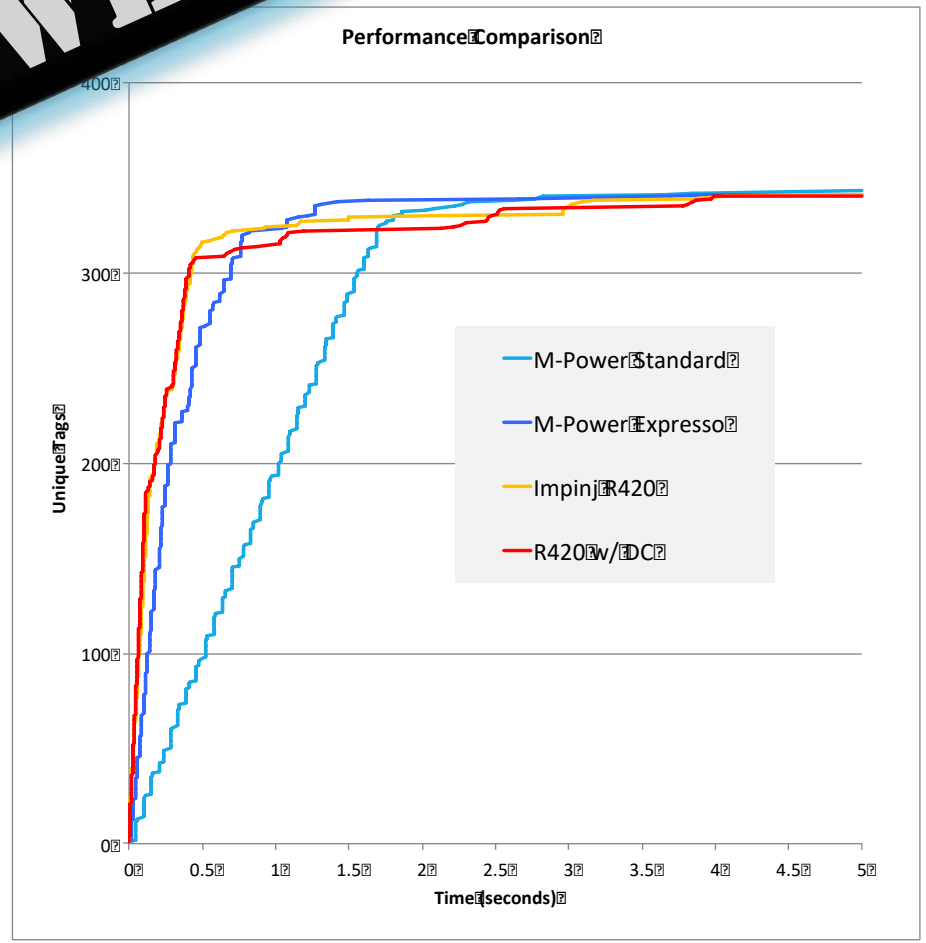


- Pro Expresso
- Pro Standard
- R420 PoE
- R420 w/ DC

COMPARISON



- Pro M-Power
  - Class 4 PoE
  - Standard & Expresso
- R420
  - Class 4 PoE
  - With optional DC supply



BAD BOX BY THE NUMBERS

Maximum Values					
TIME	1	2	3	4	5
Expresso	323	339	341	342	343
Standard	189	328	341	343	345
R420 w/DC	315	341	343	343	344
R420	324	329	332	339	341

Minimum Values					
TIME	1	2	3	4	5
Expresso	277	317	331	337	337
Standard	170	297	312	336	341
R420 w/DC	279	299	332	338	339
R420	277	300	317	323	333

QUALITY SYSTEMS

- Hardware
  - Mil-Spec and Telecom Testing
  - 100% out-going test
  - Continual surveillance testing
- Software
  - Source control (BitBucket)
  - Bug tracking (Jira)
  - Peer code review
  - Automated regression testing

CERTIFICATIONS

SensThys
Sense This World

IP 67

Industry Canada Industrie Canada
Canada

MiCOM Labs
opening wireless markets

BLU FLUX

THANK YOU!

WE APPRECIATE YOUR TIME AND THOUGHTS.