



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Robert W. Baird & Co.

State of RFID Industry

- Reik Read 414-298-1030
- Robb Timme 414-298-1762
- Samantha DeLay 414-298-6215

Please refer to Appendix – Important Disclosures and Analyst Certification



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Overview

- Passive Market Progress 2003-2007
- Market Status
 - Retail / DoD
 - Non-Retail / DoD
 - Developing Distribution
- Industry M&A
- Market Risks
- Baird's Outlook



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Market Status - 2003

- No usable UHF standard in place; Auto ID Center was industry body
- Tag pricing exceeded \$0.75
- Three major mandates Wal-Mart, DoD and Metro, but with very little direction
- IP generally not considered
- Minimal implementation skill sets available
- End users had little to no understanding of the technology



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Market Progress Since 2003

- Gen 2 standard in place for just over two years, equipment available; EPCglobal is recognized industry body;
- Pricing down to \$0.10-\$0.13 for standard Gen 2 tags
- Mandate progress
 - Wal-Mart mandate better than expected; add'l retail mandates
 - DoD has DFAR change
 - Pharma pilots underway
- IP is becoming better organized
- Implementation skills increasing
- End users are learning; business case development is underway
- HF standards development/HF interest



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

General Market Status

- Multiple Gen 2 silicon vendors entered the market; volume inlay production processes on line
- Gen 2 standard and interoperability certifications. Gen 2 comments favorable, adoption also in non-supply chain applications
- Evidence of positive ROIs; mostly in non-supply chain applications
 - Displays
 - Auto/Aerospace
 - Transportation
 - Chemical
- Adoption requires greater networking capability, more RFID skill sets and greater ROI transparency.
- Increased item level opportunity sooner than expected



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Current Market Status

-Retail-

- Wal-Mart - 1,000 stores implemented – Impact?
 - WMT spending to move forward, wants progress, Gen 2 in place – become increasingly aggressive
 - WMT has perception problem of being too heavy handed – move more moderately
- DoD progress additive
- Reader prices expected to drop substantially by late 2007; seeing volumes increase
- Tag pricing will remain flat
- Most see lots of little progress in 2007, not big events



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Current Market Status

-Non Retail-

- Progress is measured, volumes are modest; but see growth in 2007
- Focus continues on non-retail supply chain and asset management applications – this appears to be where the business is
 - Transportation
 - Textiles/Apparel/Footwear
 - Library
 - Jewelry/Brand Protection
- More electronic payment
- Pharma – will see some progress but generally slower than expected
 - Some interested, some not (cost, liability)
 - FDA not taking sufficient leadership



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Distribution Developing

- Increasing focus on specific vertical markets
- Solution development accelerating
 - Resellers
 - Application Software
- Vendors seeking greater product distribution
- Market seeking greater solution/case study/ROI transparency



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Industry M&A

- Activity is increasing
- Zebra acquires WhereNet to gain access into active/RTLS market
- Motorola acquires Symbol – mostly for mobile computing capability and retail relationships, but RFID likely attractive component
- Sirit increasing RFID Focus – sell Applied Data Systems business; acquired SAMSys assets in 2006
- Avery Dennison acquires RF Identics



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

RFID Business Development

- Both start-ups and incumbents have opportunity to participate
- Start-ups have had more advantage during the early stages
- The market is gaining further definition
- We expect incumbents will seek to fill gaps – expect increased consolidation
- We expect smaller private companies will seek increased growth capital – private equity or public markets



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Market Risks

- High cost of transition (infrastructure and tags); challenged business case development
- Education – End users (as a whole) are not well educated on important topics – capabilities, technical issues, support, implementation, etc.
- RFID is more complex than end users and even vendors appreciate – progress is taking longer than anticipated
- Intellectual property issues have made very good progress, but are not completed



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Baird's RFID Outlook

- 2007
 - Compliance: 600 CPG for under WMT compliance mandate; greater SKU tracking
 - Increased Gen 2 piloting – depth and breadth; business case development
 - Expanded closed loop offerings
 - HF / UHF debate continues
 - Roughly \$40M-\$50M Gen 2 hardware market; passive total \$250M-\$300M
- 2008
 - WMT fully implemented
 - ROIs identified and leading to deployments, likely at high end
 - Estimated \$175M-\$200M Gen 2 hardware market; passive total \$450M-\$500M



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

Appendix – Important Disclosures and Analyst Certification

Robert W. Baird & Co. and/or its affiliates expect to receive or intend to seek investment banking related compensation from the company or companies mentioned in this report within the next three months.

Investment Ratings: Outperform (O) - Expected to outperform on a total return, risk-adjusted basis the broader U.S. equity market over the next 12 months. Neutral (N) - Expected to perform in line with the broader U.S. equity market over the next 12 months. Underperform (U) - Expected to underperform on a total return, risk-adjusted basis the broader U.S. equity market over the next 12 months.

Risk Ratings: L - Lower Risk - Higher-quality companies for investors seeking capital appreciation or income with an emphasis on safety. Company characteristics may include: stable earnings, conservative balance sheets, and an established history of revenue and earnings. A - Average Risk - Growth situations for investors seeking capital appreciation with an emphasis on safety. Company characteristics may include: moderate volatility, modest balance-sheet leverage, and stable patterns of revenue and earnings. H - Higher Risk - Higher-growth situations appropriate for investors seeking capital appreciation with the acceptance of risk. Company characteristics may include: higher balance-sheet leverage, dynamic business environments, and higher levels of earnings and price volatility. S - Speculative Risk - High-growth situations appropriate only for investors willing to accept a high degree of volatility and risk. Company characteristics may include: unpredictable earnings, small capitalization, aggressive growth strategies, rapidly changing market dynamics, high leverage, extreme price volatility and unknown competitive challenges.

Valuation, Ratings and Risks: The recommendation and price target contained within this report are based on a time horizon of 12 months but there is no guarantee the objective will be achieved within the specified time horizon. Price targets are determined by a subjective review of fundamental and/or quantitative factors of the issuer, its industry, and the security type. A variety of methods may be used to determine the value of a security including, but not limited to, discounted cash flow, earnings multiples, peer group comparisons, and sum of the parts. Overall market risk, interest rate risk, and general economic risks impact all securities. Specific information regarding the price target and recommendation is provided in the text of our most recent research report.

Distribution of Investment Ratings: As of August 31, 2006, Baird U.S. Equity Research covered 471 companies, with 46% rated Outperform, 53% rated Neutral and 1% rated Underperform. Within these rating categories, 19% of Outperform-rated, 8% of Neutral-rated companies and 40% of Underperform-rated companies have compensated Baird for investment banking services in the past 12 months and/or Baird managed or co-managed a public offering of securities for these companies in the past 12 months.

Analyst Compensation: Individual compensation determinations for research analysts, including the author(s) of this report, are based on a variety of factors, including the overall profitability of the firm and the total revenue derived from all sources, including revenues from investment banking. Baird does not compensate research analysts based on specific investment banking transactions.



**DoD RFID
SUMMIT**
APRIL 3RD - 4TH 2007

Hilton Washington | Washington D.C. USA



www.DoDRFIDsummit.com

-
- A complete listing of all companies covered by Baird U.S. Equity Research and applicable research disclosures can be accessed at <http://www.rwbaird.com/researchdisclosure/>. You can also call 1-800-792-2473 or write: Robert W. Baird & Co., Equity Research, 24th Floor, 777 E. Wisconsin Avenue, Milwaukee, WI 53202.
 - Analyst Certification
 - The senior research analyst(s) certifies that the views expressed in this research report and/or financial model accurately reflect such senior analyst's personal views about the subject securities or issuers and that no part of his or her compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in the research report.
 - Disclaimers
 - Baird prohibits analysts from owning stock in companies they cover.
 - This is not a complete analysis of every material fact regarding any company, industry or security. The opinions expressed here reflect our judgment at this date and are subject to change. The information has been obtained from sources we consider to be reliable, but we cannot guarantee the accuracy.
 - ADDITIONAL INFORMATION ON COMPANIES MENTIONED HEREIN IS AVAILABLE UPON REQUEST
 - The Dow Jones Industrial Average, S&P 500, S&P 400 and Russell 2000 are unmanaged common stock indices used to measure and report performance of various sectors of the stock market; direct investment in indices is not available.
 - Baird is exempt from the requirement to hold an Australian financial services license. Baird is regulated by the United States Securities and Exchange Commission, NASD, NYSE, and various other self-regulatory organizations and those laws and regulations may differ from Australian laws. This report has been prepared in accordance with the laws and regulations governing United States broker-dealers and not Australian laws.
 - Copyright 2005 Robert W. Baird & Co. Incorporated
 - Other Disclosures
 - UK disclosure requirements for the purpose of distributing this research into the UK and other countries for which Robert W Baird Limited holds an ISD passport.
 - This report is for distribution into the United Kingdom only to persons who fall within Article 19 or Article 49(2) of the Financial Services and Markets Act 2000 (financial promotion) order 2001 being persons who are investment professionals and may not be distributed to private clients. Issued in the United Kingdom by Robert W Baird Limited, which has offices at Mint House 77 Mansell Street, London, E1 8AF, and is a company authorized and regulated by the Financial Services Authority and a member of the London Stock Exchange. For the purposes of the Financial Services Authority requirements, this investment research report is classified as objective.
 - Robert W Baird Limited ("RWBL") is exempt from the requirement to hold an Australian financial services license. RWBL is regulated by the Financial Services Authority ("FSA") under UK laws and those laws may differ from Australian laws. This document has been prepared in accordance with FSA requirements and not Australian laws.