



ARRIS

Second Quarter 2013
ARRIS Earnings
Conference Call

August 7, 2013

Safe Harbor

Statements in this presentation or made in this meeting, including those related to the outlook for 2013 and beyond, the integration of Motorola Home, expected revenues and net income, gross margins, operating expenses, income taxes, acceptance of certain ARRIS products, the general market outlook, and industry trends, are forward-looking statements. These statements involve risks and uncertainties that may cause actual results to differ materially from those set forth in these statements. Among other things, projected results are based on preliminary estimates, assumptions and projections that management believes to be reasonable at this time, but are beyond management's control; ARRIS is dependent upon customer decisions to purchase the Company's products - these decisions can be deferred and customers also may select competitor products; and because the market in which ARRIS operates is volatile and actions taken and contemplated may not achieve the desired impact. Other factors that could cause results to differ from current expectations include: the uncertain current economic climate and financial markets, and their impact on our customers' plans and access to capital; ARRIS' ability to successfully integrate Motorola Home's opportunities, technology, personnel, and operations, the impact of rapidly changing technologies; the impact of competition on product development and pricing; the ability of ARRIS to react to changes in general industry and market conditions; rights to intellectual property and the current trend toward increasing patent litigation, market trends and the adoption of industry standards; possible acquisitions and dispositions; and consolidations within the telecommunications industry of both the customer and supplier base. These factors are not intended to be an all-encompassing list of risks and uncertainties that may affect the Company's business. Additional information regarding these and other factors can be found in ARRIS' reports filed with the Securities and Exchange Commission, including its Form 10-Q for the quarter ended March 31, 2013. In providing forward-looking statements, the Company expressly disclaims any obligation to update publicly or otherwise these statements, whether as a result of new information, future events or otherwise.



Second Quarter 2013 Highlights & Business Outlook

Bob Stanzione
CEO & Chairman

Q2 2013 Highlights

- Q2 results better than expected
- Integration going well
- Post close second quarter revenues of \$1,000.4 million
 - Excludes ~\$66 million of pre acquisition Motorola Home Q2 revenue
 - ~66% Domestic, ~34% International
- Post Close Non-GAAP EPS* of \$0.46 (4/17 – 6/30)
 - Excludes ~\$(0.15) of pre acquisition Motorola Home Q2 operating loss
- Solid cash generation from operations
- TiVo® litigation settled, secured fully paid up licenses to the patents in the lawsuit

* See reconciliation of GAAP to Non-GAAP measures.

The ARRIS Portfolio

Before

NOW



ATS
 HE Optics, Fiber Nodes
 RF Amplifiers

MCS
 Assurance, Analytics
 Workforce Management
 Video on Demand
 Ad Insertion & Management

BCS
 CMTS, CCAP, Edge QAMs
 Encoder/Decoder/Transcoder

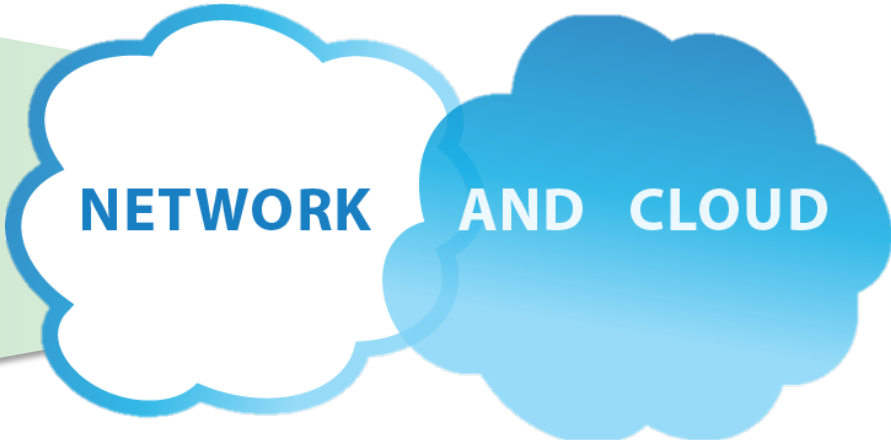
BCS
 Modems, EMTAs, Gateways

MOTOROLA

Network Infrastructure
 CMTS, Edge QAMs, HE Optics
 Fiber Nodes, RF Amplifiers
 Encoders/Decoders/Transcoders

Convergence Experiences
 Assurance, Asset Management,
 Content Security, Ad Insertion, Video
 on Demand, User
 Experience

Home Devices
 Modems, EMTAs, Gateways,
 Set-top Boxes



Network and Cloud Segment



CMTS

- CMTS, CCAP



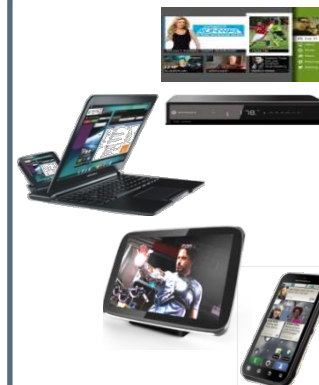
Video Infrastructure

- QAM
- Encryption, Programmer
- Compression



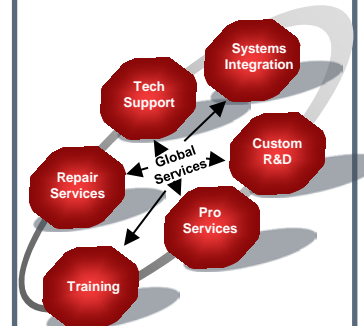
Access and Transport

- HFC (Headend Optics, Nodes, RF)
- Metro WiFi
- Supplies



Cloud Services

- Multi-screen
- On Demand / Advertising
- Assurance



Global Services

Consists of 5 Product Lines

- First three product lines are of similar size, with CMTS the largest
- Cloud product line combines ARRIS MCS business with new high growth Consumer Experience Medios+ multi-screen portfolio
- Global Services organization provides Technical Support for entire ARRIS portfolio, along with a growing Professional Services and Systems Integration business

Q2 2013 Network & Cloud Highlights

- **Integration**
 - Product lines and teams integrated.
- **CCAP: E6000™ Converged Edge Router**
 - Full scale deployment underway with trials and/or deployment across all geographies
 - Significant shipments to Comcast
- **C4® and BSR CMTS**
 - Solid shipments as operators continue to cost effectively extend their installed base
- **Access and Transport**
 - Continued strength across combined portfolio as cable operators extend fiber deeper
 - Achieved general availability on new cost-optimized fiber node platform
 - Growing momentum on Metro Wi-Fi products

Q2 2013 Network & Cloud Highlights

▪ Video Infrastructure

- New wins and continued deployment of new APEX3000 CCAP Edge QAM
- Launched new high density GT-3 Transcoder platform targeted at Multi-Screen IP Video markets
- Solid sales of MPEG-4 compression and encryption products into programmer environment
- Reducing exposure to unprofitable legacy GPON FTTH business

▪ Cloud

- Excellent progress on expanding commercial deployment of our Multi-screen software solutions.
 - Includes comprehensive Medios+ portfolio including Dream Gallery User Interface framework, Secure Media[®] DRM, Merchandiser offer management system, and Video Flow Content Management System
- Delivered significant capacity management enhancement for WorkAssure[™] platform

CPE Segment



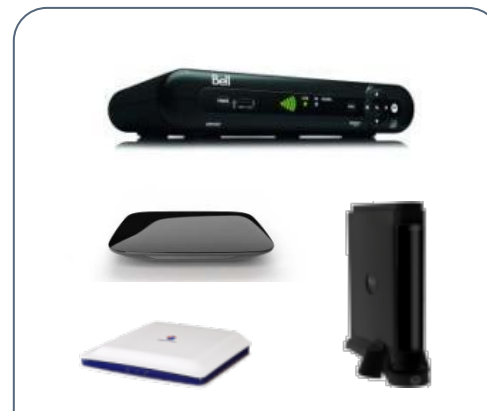
Digital Video Products

- Digital Set-tops (SD, HD, DVR)
- Video Gateways
- Cable IP clients



DOCSIS Devices

- Data & Voice Modems
- WiFi-enabled Platforms
- Multi-service IP Gateways



Telco CPE

- IPTV Set-top Solutions
- DSL Modems & Assy's
- DSL Residential Gateways

Consists of 3 Product Lines

- Digital video products aligned to serve DVB & ATSC cable markets
- DOCSIS[®] devices integrates the Touchstone[®] & SURFboard[®] product portfolios
- Telco CPE products address worldwide telecommunications operator markets

Q2 2013 CPE Highlights

- Integration update – DOCSIS[®] product lines & teams integrated
- Traditional set-top technology transition underway
- Continued video gateway engagements – Strong industry momentum
 - Announced program to launch XG1 video gateway with Comcast
 - Design wins with 3 additional large service providers progressing
 - Accelerated Moxi[®] Whole Home Solution deployments
- Introduced new video set top platforms
 - Launched next generation wireless set top with Bell Canada
 - Selected to provide hybrid set-top in support of Vectra's digital transition
- Record DOCSIS CPE shipments
 - ~90% of units were DOCSIS 3.0
 - ~60% of units were Wi-Fi-enabled Gateway devices
- Recognized via AT&T's 2013 Supplier Award Program

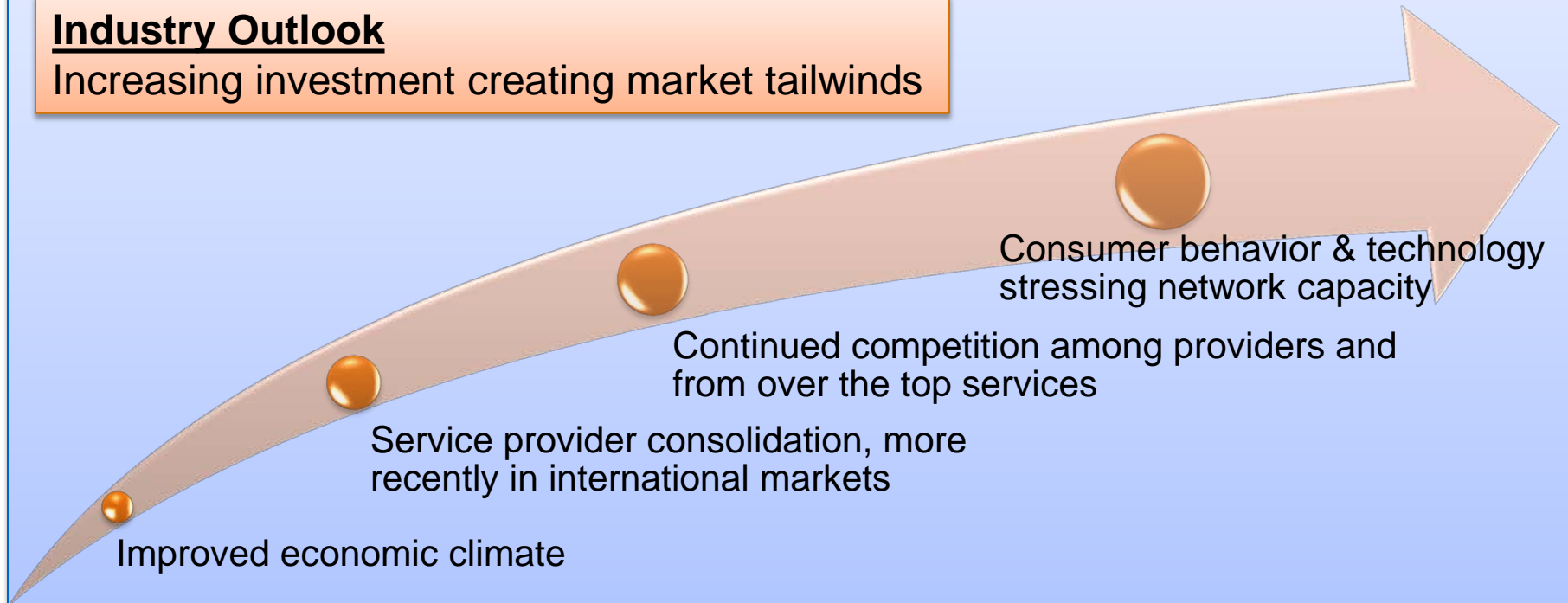
Integration Status

- Integration milestones being achieved ahead of schedule
 - Sales force and product line integration substantially complete
 - Headcount reductions of ~550 employees
 - Announced facility consolidation plans
 - State College, PA
 - Marlborough, MA
 - Libertyville, IL
 - San Francisco Bay area
 - Several sales and support offices, etc.
 - Supply Chain efficiencies being pursued
 - Organizational integration completed
 - Purchasing efficiencies beginning to accrue
 - Optimizing manufacturing footprint
 - Finance and IT integration
 - In progress, operating under Transitional Services Agreements with Google
 - Anticipate exiting services agreements in early 2014

Positive Business Trends and Outlook

Industry Outlook

Increasing investment creating market tailwinds



The New ARRIS:

Acquisition/integration has progressed well
Have the talent and the scale to be the leader
Expect that our target model can be achieved



Second Quarter 2013 Financial Highlights

David Potts
Chief Financial Officer

Financial Highlights – Q2 2013 (Preliminary & Unaudited)

	<u>Q2 2012</u>	<u>Q2 2013</u>
Sales - \$M	349.3	1,000.4
Gross Margin - \$M	118.5	231.1
Gross Margin - %	33.9%	23.1%
Direct Contribution	35.4	19.9
EPS - GAAP ⁽¹⁾	0.13	(0.37)
Adjusted EPS - Non-GAAP ⁽²⁾	0.25	0.46
Cash, ST & LT Marketable Securities - \$M	576.3	764.1
Cash Provided by Operating Activities - \$M	30.6	294.0
Short-term Debt -\$M	0.0	290.0
Long-term Debt -\$M	215.8	1,837.9
Weighted average common shares - basic - M	113.8	134.6
Weighted average common shares - diluted - M	115.1	136.6
Backlog - \$M	251.9	534.9
Book-to-Bill	0.93	0.95

See GAAP to Non GAAP Reconciliation

(1) Basic shares used for Q2 2013 as losses were reported for this period and the inclusion of dilutive shares would be antidilutive.

(2) Although net income for Q2 2013 is a loss, dilutive shares are used for purposes of this calculation per share as earnings excluding highlighted items is net income.

Estimated Q2 Adjusted Results (Preliminary & Unaudited)

	As Reported	Non GAAP Adj's	Adjusted	Estimated Motorola Home Apr 1-16 ⁽⁶⁾
Adjusted Sales - \$M	1,000.4	2.4 ⁽¹⁾	1,002.8	66
Adjusted Gross Margin - \$M	231.1	73.5 ⁽²⁾	304.6	4
Adjusted Gross Margin - %	23.1%		30.4%	
Adjusted Direct Contribution	19.9	79.8 ⁽³⁾	99.7	(30)
Adjusted EPS - GAAP ⁽⁴⁾	(0.37)			
Adjusted EPS - Non-GAAP ⁽⁵⁾	0.46		0.46	(0.15) ⁽⁷⁾

See GAAP to Non GAAP Reconciliation

(1) Revenue impact of "fair valuing" Motorola Home deferred revenue that Motorola Home would have recorded but ARRIS cannot as a result of acquisition accounting.

(2) Gross Margin impact of \$2.4 M of Motorola Home def revenue, def costs of \$(0.9) million, fair value of inventory of \$57.5 million, product rationalization of \$13.6 million and stock comp of \$0.9 million.

(3) Direct Contribution impact of \$2.4 M of Motorola Home def revenue, def costs of \$(0.9) million, fair value of inventory of \$57.5 million, product rationalization of \$13.6 million and stock comp of \$7.2 million

(4) Basic shares used for Q2 2013 as losses were reported for this period and the inclusion of dilutive shares would be antidilutive.

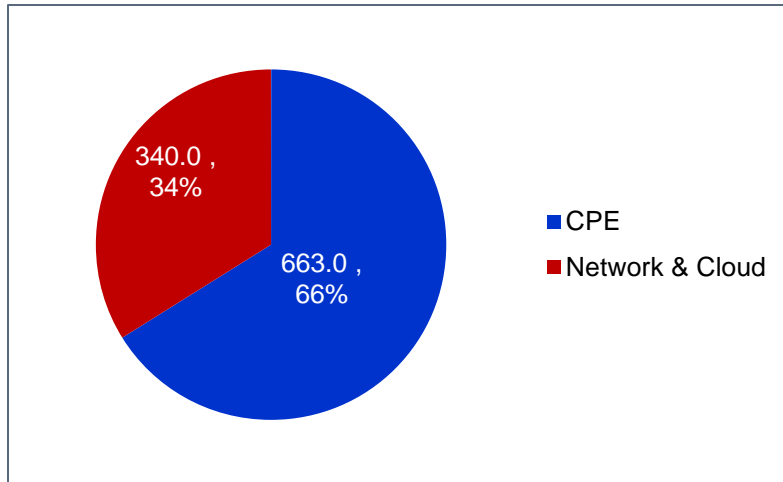
(5) Although net income for Q2 2013 is a loss, dilutive shares are used for purposes of this calculation per share as earnings excluding highlighted items is net income.

(6) Estimated pre acquisition Motorola Home results not included in ARRIS Q2 results.

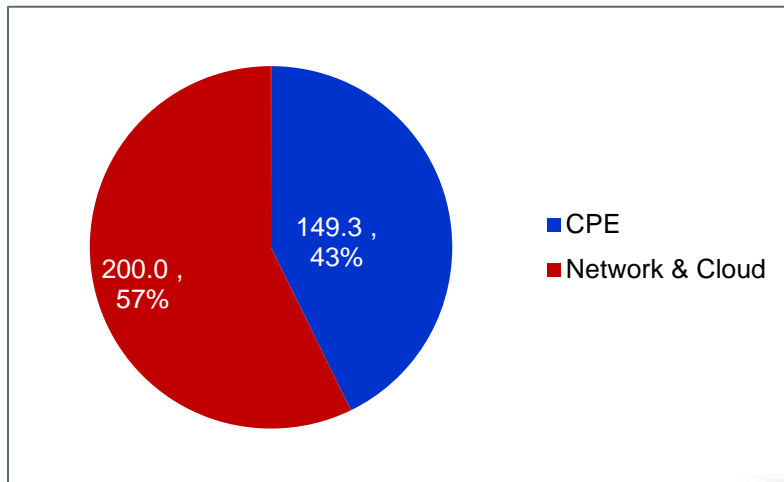
(7) Impact of \$(30)M Direct Contribution after tax

Sales \$M – Q2 2013 (Preliminary & Unaudited)

Q2 2013



Q2 2012



	Q2 2013	% of Sales
Domestic Sales	658.3	65.8%
International Sales	342.1	34.2%

	Q2 2013	% of Sales
Comcast	190.1	19.0%
Time Warner	98.4	9.8%

Sales and Direct Contribution by Segment – Excluding April 1 – 16, 2013 for Motorola Home (Preliminary & Unaudited)

(\$M)

	<u>Q2 2013</u> ⁽³⁾			
	Network & Cloud	CPE	Corp/ Other	Total
Net Sales	340.0	663.0	(2.6)	1,000.4
Non GAAP Adjustments ⁽¹⁾	-	-	2.4	2.4
Adjusted Net Sales	<u>340.0</u>	<u>663.0</u>	<u>(0.2)</u>	<u>1,002.8</u>
Direct Contribution	66.4	123.8	(170.3)	19.9
Non GAAP Adjustments ⁽²⁾	-	-	79.8	79.8
Adjusted Direct Contribution	<u>66.4</u>	<u>123.8</u>	<u>(90.5)</u>	<u>99.7</u>

See GAAP to Non GAAP Reconciliation

(1) Revenue impact of "fair valuing" Motorola Home deferred revenue that Motorola Home would have recorded but ARRIS cannot as a result of acquisition accounting.

(2) Adjustments related to the acquisition accounting impacts of deferred revenue and the fair valuing of inventory. Also adjusted for stock compensation and product rationalization.

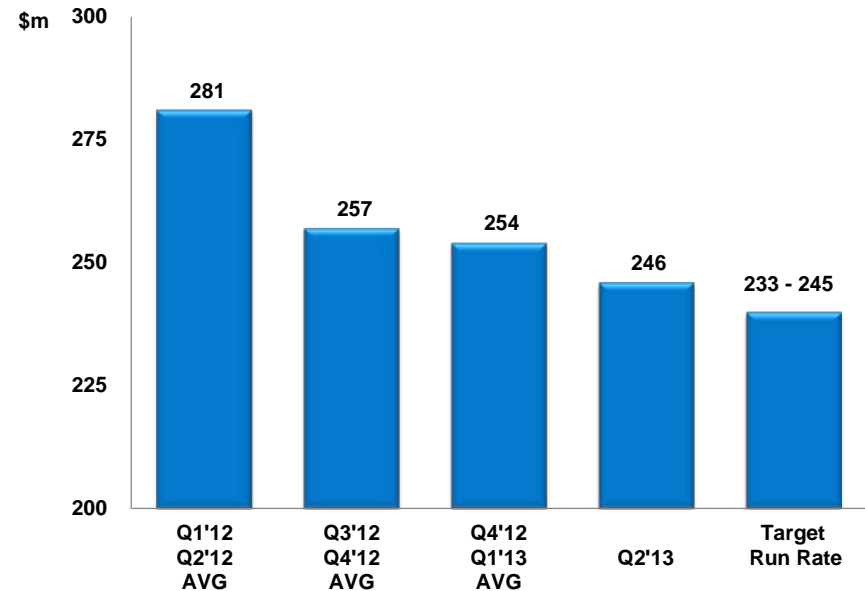
(3) Estimated pre acquisition Motorola Home results not included in ARRIS Q2 results

Operating Expenses – Q2 2013 (Preliminary & Unaudited)

\$M	As Reported		
	Qtr 2 2012	Qtr 2 2013	
R&D	\$M	42.9	123.4
	% of Sales	12.3%	12.3%
SG&A	\$M	40.1	87.8
	% of Sales	11.5%	8.8%
Operating Expenses	\$M	83.0	211.2
	% of Sales	23.8%	21.1%
Restructuring	\$M	1.0	32.3
	% of Sales	0.3%	3.2%
Acquisition Costs & Other	\$M	0.1	19.4
	% of Sales	0.0%	1.9%
Amortization of Intangibles	\$M	7.4	58.1
	% of Sales	2.1%	5.8%
Total	\$M	91.6	321.0
	% of Sales	26.2%	32.1%

Equity Compensation Expense Included 7.9 7.2

SG&A/R&D Trend – Estimated Combined ⁽¹⁾



- On track to targeted run rate
- Implemented reduction actions in Q2 2013, anticipate run rate of \$235M - \$245M in Q3/Q4
- Working other reduction actions, in particular exit of transitional services with Google

(1) Includes estimates for ARRIS and Motorola Home for the full quarters of 2012 and 2013.

Cash from Operating Activities – Q2 2013

(Preliminary & Unaudited)

Cash from operating activities - Q2 2013	\$M
Increase in AP and Accrued Liabilities	223
Decrease in Inventory	85
All Other (Net)	(15)
Total	294

- Q2 better as a result of lower working capital, some of which will reverse.
- Anticipate lower AP & Accrued Liabilities in the second half; ~\$200M

Taxes

- **2013 Federal Cash Taxes**
 - Expected to be ~ \$0M as a result of deal and restructuring, etc.
- **Recorded preliminary estimate of \$309M of deferred tax assets as part of acquisition**
 - Will be used to offset cash taxes over next 10 years
 - Does not impact GAAP and Non GAAP rate
- **Estimating Non GAAP Rate for 2013 of ~ 30%**
 - Improved from prior views; various tax planning strategies
 - Rate includes benefits from R&D tax credits, manufacturing deduction, etc.
- **Estimating, GAAP Tax Rate for 2013 of ~ 45%**
 - Rate creates a tax benefit given we anticipate a GAAP pre tax loss for the year & includes benefits of R&D tax credits, etc.

Q3 2013 Guidance

(Preliminary & Unaudited)

	<u>Q2 2013</u>	<u>Estimated Motorola Home April 1 - 16 ⁽¹⁾</u>	<u>Q3 2013</u>
	<u>As Reported</u>		
Sales - \$M	1,000.4	66	1,050 - 1,080
EPS - GAAP	(0.37)	-	(0.12) - (0.07)
Adjusted EPS - Non-GAAP	0.46	(0.15) ⁽²⁾	0.32 - 0.37

See reconciliation of GAAP to Non GAAP

(1) Estimated pre acquisition Motorola Home results not included in ARRIS Q2 results

(2) Impact of \$(30)M direct contribution after tax

GAAP to Adjusted Non-GAAP EPS Guidance Reconciliation

	Q3 2013 Guidance
Estimated GAAP EPS	\$(0.12) - \$ (0.07)
Reconciling Items (after tax):	
Amortization of Intangibles	0.34
Acquisition accounting impacts related to Motorola Home deferred revenue	0.02
Stock Compensation Expense	0.05
Non-Cash Interest - Convertible Debt	0.02
Acquisition Costs	0.01
Subtotal	<u>0.44</u>
Estimated Adjusted (Non-GAAP) EPS	<u><u>\$ 0.32 - \$ 0.37</u></u>

GAAP EPS⁽¹⁾/Adjusted EPS Reconciliation Q2

2013 (Preliminary & Unaudited)

(in thousands, except per share data)

	Q2 2012		Q2 2013		YTD 2012		YTD 2013	
	Amount		Amount		Amount		Amount	
Sales	\$ 349,327		\$ 1,000,362		\$ 652,228		\$ 1,354,012	
Highlighted items:								
Acquisition accounting impacts related to Motorola Home and BigBand deferred revenue	663		2,417		2,434		2,417	
Reduction in revenue related to Comcast investment in ARRIS	-		-		-		13,182	
Sales excluding highlighted items	\$ 349,990		\$ 1,002,779		\$ 654,662		\$ 1,369,611	
	Amount	Per Diluted Share	Amount	Per Diluted Share	Amount	Per Diluted Share	Amount	Per Diluted Share
Net income (loss)	\$ 15,001	\$ 0.13	\$ (50,277)	\$ (0.37)	\$ 20,800	\$ 0.18	\$ (64,927)	\$ (0.52)
Highlighted items:								
<i>Impacting gross margin:</i>								
Acquisition accounting impacts related to Motorola Home fair value of inventory	-	-	57,600	0.42	-	-	57,600	0.45
Product rationalization	-	-	13,582	0.10	-	-	13,182	0.10
Acquisition accounting impacts related to Motorola Home and BigBand deferred revenue	663	0.01	1,472	0.01	1,921	0.02	1,472	0.01
Fair value impacts related to Comcast investment in ARRIS	-	-	-	-	-	-	13,182	0.10
Stock compensation expense	809	0.01	866	0.01	1,559	0.01	1,697	0.01
<i>Impacting operating expenses:</i>								
Acquisition costs and other	102	0.00	19,392	0.14	1,046	0.01	26,582	0.21
Restructuring	1,039	0.01	32,257	0.24	6,242	0.05	32,266	0.25
Amortization of intangible assets	7,444	0.06	58,130	0.43	14,823	0.13	65,733	0.51
Stock compensation expense	7,058	0.06	6,314	0.05	12,957	0.11	12,227	0.10
<i>Impacting other (income) / expense:</i>								
Non-cash interest expense	3,058	0.03	3,308	0.02	6,057	0.05	6,552	0.05
Impairment of investment	466	0.00	-	-	466	0.00	-	-
Credit Facility - ticking Fees	-	-	477	0.00	-	-	865	0.01
Mark-to-market FV adjustment related to Comcast investment in ARRIS	-	-	(6,159)	(0.05)	-	-	13,189	0.10
<i>Impacting income tax expense:</i>								
Adjustments of income tax valuation allowances and other	-	-	-	-	-	-	(7,516)	(0.06)
Tax related to highlighted items above	(6,749)	(0.06)	(74,784)	(0.55)	(14,870)	(0.13)	(80,520)	(0.63)
Total highlighted items	13,890	0.12	112,455	0.82	30,201	0.26	156,511	1.23
Net income excluding highlighted items	\$ 28,891	\$ 0.25	\$ 62,178	\$ 0.46	\$ 51,001	\$ 0.44	\$ 91,584	\$ 0.72
Weighted average common shares - Basic		113,842		134,626		114,457		124,940
Weighted average common shares - diluted ⁽²⁾		115,111		136,626		116,352		127,731

(1) Excludes Motorola Home results prior to April 17, 2013

(2) Basic shares used for Q1 2013 and Q2 2013 as losses were reported for those periods and the inclusion of dilutive shares would be anti-dilutive

See the Notes to GAAP / Adjusted Non-GAAP Financial Measures slide

Notes to GAAP/Adjusted Non-GAAP Financial Measures

(Preliminary & Unaudited)

The Company reports its financial results in accordance with accounting principles generally accepted in the United States ("GAAP" or referred to herein as "reported"). However, management believes that certain non-GAAP financial measures provide management and other users with additional meaningful financial information that should be considered when assessing our ongoing performance. Our management regularly uses our supplemental non-GAAP financial measures internally to understand, manage and evaluate our business and make operating decisions. These non-GAAP measures are among the factors management uses in planning for and forecasting future periods. Non-GAAP financial measures should be viewed in addition to, and not as an alternative to, the Company's reported results prepared in accordance with GAAP. Our non-GAAP financial measures reflect adjustments based on the following items, as well as the related income tax effects:

Acquisition Accounting Impacts Related to Deferred Revenue: In connection with our acquisitions of Motorola Home and BigBand, business combination rules require us to account for the fair values of arrangements for which acceptance has not been obtained, and post contract support in our purchase accounting. The non-GAAP adjustment to our sales and cost of sales is intended to include the full amounts of such revenues. We believe the adjustment to these revenues is useful as a measure of the ongoing performance of our business. We have historically experienced high renewal rates related to our support agreements and our objective is to increase the renewal rates on acquired post contract support agreements; however, we cannot be certain that our customers will renew our contracts.

Inventory Valuation: In connection with our acquisition of Motorola Home, business combinations rules require the inventory be recorded at fair value on the opening balance sheet. This is different from historical cost. Essentially we were required to write the inventory up to end customer price less a reasonable margin as a distributor. This resulted in an increase in the value of inventory and will result in higher cost of goods sold as it is sold.

Product Rationalization: In conjunction with the integration of Motorola Home, we have identified certain product lines which overlap. In the second quarter of 2013, we made the decision to eliminate certain products. As a result, we recorded expenses related to the elimination of inventory and certain vendor liabilities. We believe it is useful to understand the effects of this item on our total cost of goods sold.

Reduction in Revenue Related to Comcast Investment in ARRIS: In connection with our acquisition of Motorola Home, Comcast purchased shares of ARRIS common stock to fund a portion of the acquisition price. The accounting guidance requires that we record the implied fair value of benefit received by Comcast as a reduction in revenue. Until the closing of the deal, changes in the value of the investment were marked to market and flowed through other expense (income). We have excluded the effect of the implied fair value in calculating our non-GAAP financial measures. We believe it is useful to understand the effects of these items on our total revenues and other expense (income).

Stock-Based Compensation Expense: We have excluded the effect of stock-based compensation expenses in calculating our non-GAAP operating expenses and net income measures. Although stock-based compensation is a key incentive offered to our employees, we continue to evaluate our business performance excluding stock-based compensation expenses. We record non-cash compensation expense related to grants of options and restricted stock. Depending upon the size, timing and the terms of the grants, the non-cash compensation expense may vary significantly but will recur in future periods.

Restructuring, Acquisition and Integration Costs: We have excluded the effect of acquisition related and other expenses and the effect of restructuring expenses in calculating our non-GAAP operating expenses and net income measures. We will incur significant expenses in connection with our recent acquisition of Motorola Home, which we generally would not otherwise incur in the periods presented as part of our continuing operations. Acquisition related expenses consist of transaction costs, costs for transitional employees, other acquired employee related costs, and integration related outside services. Restructuring expenses consist of employee severance, abandoned facilities, and other exit costs. We believe it is useful to understand the effects of these items on our total operating expenses.

Loss on Sale of Product Line: We have excluded the effect of a loss on the sale of a product line in calculating our non-GAAP operating expenses and net income measures. We believe it is useful to understand the effects of these items on our total operating expenses.

Amortization of Intangible Assets: We have excluded the effect of amortization of intangible assets in calculating our non-GAAP operating expenses and net income measures. Amortization of intangible assets is non-cash, and is inconsistent in amount and frequency and is significantly affected by the timing and size of our acquisitions. Investors should note that the use of intangible assets contributed to our revenues earned during the periods presented and will contribute to our future period revenues as well. Amortization of intangible assets will recur in future periods.

Non-Cash Interest on Convertible Debt: We have excluded the effect of non-cash interest in calculating our non-GAAP operating expenses and net income measures. We record the accretion of the debt discount related to the equity component non-cash interest expense. We believe it is useful to understand the component of interest expense that will not be paid out in cash.

Impairment of Investment: We have excluded the effect of an other-than-temporary impairment of a cost method investment in calculating our non-GAAP financial measures. We believe it is useful to understand the effect of this non-cash item in our other expense (income).

Notes to GAAP/Adjusted Non-GAAP Financial Measures (con't)

(Preliminary & Unaudited)

Credit Facility - Ticking Fees: In connection with our acquisition of Motorola Home, the cash portion of the consideration was funded primarily through debt financing commitments. A ticking fee is a fee paid to our banks to compensate for the time lag between the commitment allocation on a loan and the actual funding. We have excluded the effect of the ticking fee in calculating our non-GAAP financial measures. We believe it is useful to understand the effect of this non-cash item in our other expense (income).

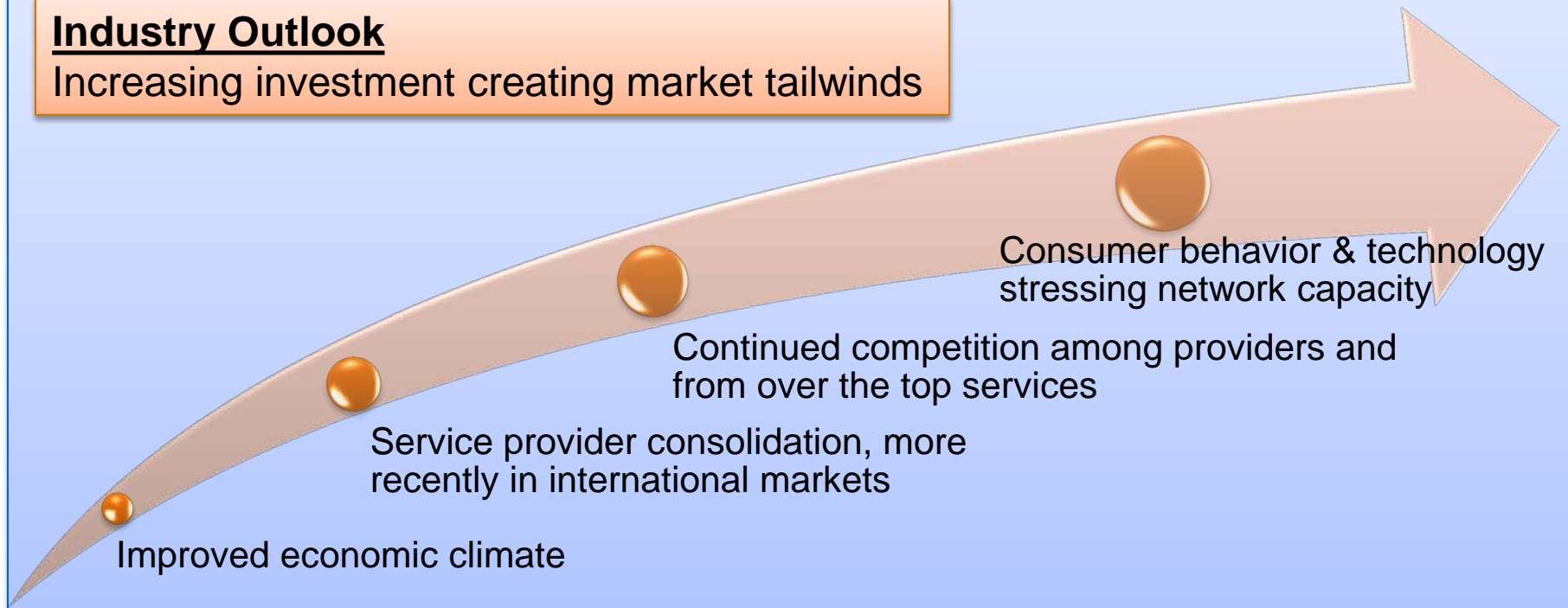
Mark To Market Fair Value Adjustment Related To Comcast Investment in ARRIS: In connection with our acquisition of Motorola Home, Comcast purchased shares of ARRIS common stock. The accounting guidance requires we mark to market the changes in the value of the investment and flow through other expense (income). We have excluded the effect of the implied fair value in calculating our non-GAAP financial measures. We believe it is useful to understand the effects of these items on our total other expense (income).

Income Tax Expense (Benefit): We have excluded the tax effect of the non-GAAP items mentioned above. Additionally, we have excluded the effects of certain tax adjustments related to state valuation allowances, research and development tax credits and provision to return differences.

Positive Business Trends and Outlook

Industry Outlook

Increasing investment creating market tailwinds



The New ARRIS:

Acquisition/integration has progressed well
Have the talent and the scale to be the leader
Expect that our target model can be achieved

