

CHAPTER ONE: INTRODUCTION	1
BACKGROUND	1
STUDY GOALS AND OBJECTIVES.....	1
INTENDED AUDIENCE.....	1
SCOPE OF REPORT	2
INFORMATION SOURCES AND METHODOLOGY.....	2
ANALYST CREDENTIALS.....	2
RELATED BCC RESEARCH REPORTS.....	3
BCC ONLINE SERVICES.....	3
DISCLAIMER	4
 CHAPTER TWO: EXECUTIVE SUMMARY.....	 5
<i>SUMMARY TABLE GLOBAL MARKET FOR RFID TECHNOLOGIES,</i> <i>THROUGH 2015 (\$ MILLION)</i>	 5
<i>SUMMARY FIGURE GLOBAL MARKET FOR RFID TECHNOLOGIES,</i> <i>2009–2015 (\$ MILLIONS)</i>	 5
EXECUTIVE SUMMARY (CONTINUED).....	6
 CHAPTER THREE: RFID OVERVIEW	 7
GENERAL DESCRIPTION OF RFID.....	7
<i>TABLE 1 CHARACTERISTICS OF RFID VS. BAR-CODE</i> <i>TECHNOLOGIES</i>	 7
RFID TECHNOLOGIES.....	8
TRANSPONDERS (TAGS)	8
Identifier Formats	8
Frequencies.....	9
<i>TABLE 2 COMMON U.S. TRANSPONDER FREQUENCIES</i>	9
<i>TABLE 3 PENETRATION CAPABILITIES OF RF TAG FREQUENCIES</i>	10
<i>TABLE 4 PENETRATION CAPABILITIES OF RF TAG FREQUENCIES</i>	11
Power Sources.....	11
Passive Tags.....	12
Active Tags.....	12
Semi-Active Tags	12
Semi-Passive Tags	13
Functionality.....	13
Memory.....	13
Environmental Sensors	14
Security	14
Privacy Protection.....	14
Physical Form	15
Summary.....	15
<i>TABLE 5 SUMMARY OF RF TAG FEATURES</i>	16
<i>TABLE 5 (CONTINUED)</i>	17
PRINTERS/ WRITERS/ENCODERS	17
Screen Printing.....	17

Ink-jet Printing and Other Liquid Dispensing Systems	18
Offset Lithography	18
Flexographic Printing.....	19
Rotogravure	20
Pad Printing.....	20
Roll-to-Roll	21
Laser Printing.....	21
READERS.....	21
Readers (Continued).....	22
RFID ANTENNAS AND OTHER HARDWARE.....	23
SOFTWARE.....	23
Middleware	23
Backend Applications	24
INTEGRATION SERVICES	24
TYPICAL PROJECT COSTS	25
<i>FIGURE 1 TYPICAL RFID PROJECT COSTS (%).....</i>	<i>25</i>
APPLICATIONS	25
IDENTIFICATION/SECURITY	26
E-PAYMENTS	26
MATERIALS HANDLING/LOGISTICS	27
ASSET TRACKING.....	27
MILITARY APPLICATIONS.....	27
OTHER APPLICATIONS	27
END USERS.....	28
AGRICULTURE	28
MINING.....	28
MANUFACTURING	28
HEALTH CARE	28
TRANSPORTATION AND LOGISTICS	29
RETAIL/PERSONAL SERVICES	29
GOVERNMENT/MILITARY.....	29
CONSUMERS	30
OVERALL MARKET SIZE AND SEGMENTATION.....	30
MARKET SIZE AND GROWTH TRENDS	30
APPLICATION SEGMENTS.....	30
<i>TABLE 6 GLOBAL MARKET FOR RFID TECHNOLOGIES BY</i> <i>APPLICATION, THROUGH 2015 (\$ MILLION).....</i>	<i>31</i>
<i>FIGURE 2 TRENDS IN GLOBAL MARKET FOR RFID</i> <i>TECHNOLOGIES, 2009–2015 (\$ MILLION).....</i>	<i>31</i>
<i>FIGURE 3 GLOBAL RFID MARKET APPLICATION SEGMENTS, 2009–</i> <i>2015 (%).....</i>	<i>32</i>
END-USER SEGMENTS.....	33
<i>TABLE 7 GLOBAL MARKET FOR RFID TECHNOLOGIES BY END-</i> <i>USER SEGMENT, THROUGH 2015 (\$ MILLION)</i>	<i>33</i>

<i>FIGURE 4 GLOBAL RFID MARKET END-USER SEGMENTS, 2009–2015 (%)</i>	34
GEOGRAPHICAL SEGMENTS	34
<i>TABLE 8 GLOBAL MARKET FOR RFID TECHNOLOGIES BY COUNTRY/REGION, THROUGH 2015 (\$ MILLION)</i>	35
<i>FIGURE 5 GLOBAL RFID MARKET GEOGRAPHICAL SEGMENTS, 2009–2015 (%)</i>	35
<i>FIGURE 5 (CONTINUED)</i>	36
CHAPTER FOUR: IDENTIFICATION AND SECURITY APPLICATIONS.....	37
SUMMARY.....	37
<i>TABLE 9 GLOBAL MARKET FOR RFID TECHNOLOGIES IN IDENTIFICATION/SECURITY, THROUGH 2015 (\$ MILLION)</i>	37
<i>FIGURE 6 GLOBAL RFID SECURITY/IDENTIFICATION TECHNOLOGY MARKET SHARES, 2009–2015 (%)</i>	38
<i>FIGURE 6 (CONTINUED)</i>	39
PERSONNEL ACCESS CONTROL/MONITORING	39
DESCRIPTION.....	39
SUPPLIERS	40
<i>TABLE 10 SUPPLIERS OF RFID PERSONNEL ACCESS CONTROL AND MONITORING TECHNOLOGIES</i>	40
MARKET	40
<i>TABLE 11 GLOBAL MARKET FOR RFID TECHNOLOGIES IN PERSONNEL ACCESS CONTROL AND MONITORING, THROUGH 2015 (\$ MILLION)</i>	41
VEHICLE ENTRY AND CONTROL.....	41
DESCRIPTION.....	41
NEW DEVELOPMENTS	42
Key2SafeDriving.....	42
Connected Key	43
SUPPLIERS	43
<i>TABLE 12 SUPPLIERS OF RFID VEHICULAR ENTRY AND CONTROL TECHNOLOGIES</i>	44
MARKET	44
<i>TABLE 13 GLOBAL MARKET FOR RFID TECHNOLOGIES IN VEHICULAR ENTRY AND CONTROL, THROUGH 2015 (\$ MILLION)</i>	44
RETAIL ANTI-THEFT	45
DESCRIPTION.....	45
NEW DEVELOPMENTS	45
DUAL-EAS Technology Tags	45
Phased Array “Smart” Antenna	46
SUPPLIERS	46
<i>TABLE 14 SUPPLIERS OF RFID RETAIL ANTI-THEFT TECHNOLOGIES</i>	47
MARKET	47

<i>TABLE 15 GLOBAL MARKET FOR RFID TECHNOLOGIES IN RETAIL ANTI-THEFT APPLICATIONS, THROUGH 2015 (\$ MILLION)</i>	47
ANTI-COUNTERFEITING/ANTI-TAMPERING	47
DESCRIPTION	47
Drug Anti-Counterfeiting	48
<i>FIGURE 7 BUSINESS PROCESS OF CREATING AND APPLYING A DRUG PEDIGREE</i>	49
Other Counterfeiting Areas	50
RECENT DEVELOPMENTS	50
SUPPLIERS	51
<i>TABLE 16 SUPPLIERS OF RFID ANTI-COUNTERFEITING/ANTI-TAMPERING TECHNOLOGIES</i>	52
MARKET	52
<i>TABLE 17 GLOBAL MARKET FOR RFID TECHNOLOGIES IN ANTI-COUNTERFEITING/ANTI-TAMPERING APPLICATIONS, THROUGH 2015 (\$ MILLION)</i>	52
HOSPITAL PATIENT/STAFF TRACKING	53
DESCRIPTION	53
RECENT DEVELOPMENTS	53
Hybrid Systems	53
Real-Time Location Systems	54
SUPPLIERS	54
<i>TABLE 18 SUPPLIERS OF RFID HOSPITAL PATIENT/STAFF TRACKING TECHNOLOGIES</i>	54
MARKET	54
<i>TABLE 19 GLOBAL MARKET FOR RFID TECHNOLOGIES IN HOSPITAL PATIENT/STAFF TRACKING APPLICATIONS, THROUGH 2015 (\$ MILLION)</i>	55
LIVESTOCK/ANIMAL IDENTIFICATION	55
DESCRIPTION	55
RECENT DEVELOPMENTS	56
SUPPLIERS	57
<i>TABLE 20 SUPPLIERS OF RFID LIVESTOCK/ANIMAL IDENTIFICATION TECHNOLOGIES</i>	57
MARKETS	57
<i>TABLE 21 GLOBAL MARKET FOR RFID TECHNOLOGIES IN LIVESTOCK/ANIMAL IDENTIFICATION APPLICATIONS, THROUGH 2015 (\$ MILLION)</i>	58
TRAVEL DOCUMENTS	58
DESCRIPTION	58
SUPPLIERS	59
MARKET	59
<i>TABLE 22 GLOBAL MARKET FOR RFID PASSPORT SECURITY TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	60

CHAPTER FIVE: E-PAYMENTS	61
SUMMARY.....	61
<i>TABLE 23 GLOBAL MARKET FOR RFID TECHNOLOGIES IN E-PAYMENTS, THROUGH 2015 (\$ MILLION)</i>	61
<i>FIGURE 8 GLOBAL RFID E-PAYMENT TECHNOLOGY MARKET SHARES, 2009–2015 (%)</i>	62
HIGHWAY TOLL COLLECTION.....	62
DESCRIPTION.....	62
RECENT DEVELOPMENTS	63
SUPPLIERS	63
<i>TABLE 24 SUPPLIERS OF RFID HIGHWAY TOLL COLLECTION TECHNOLOGIES</i>	64
MARKET	64
<i>TABLE 25 GLOBAL MARKET FOR RFID HIGHWAY TOLL COLLECTION TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	64
PAYMENT BY CELLULAR PHONES AND OTHER MOBILE DEVICES	65
DESCRIPTION.....	65
RECENT DEVELOPMENTS	65
SUPPLIERS	66
<i>TABLE 26 DEVELOPERS AND SUPPLIERS OF RFID E-PAYMENT TECHNOLOGIES</i>	66
<i>TABLE 26 (CONTINUED)</i>	67
MARKET	67
<i>TABLE 27 GLOBAL MARKET FOR RFID MOBILE PAYMENT TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	68
OTHER TYPES OF CONTACTLESS PAYMENTS	68
DESCRIPTION.....	68
Contactless Payment Cards	68
Transit Fare Cards	69
Other Formats	70
RECENT DEVELOPMENTS	70
New Formats.....	70
Security Improvements	71
SUPPLIERS	71
<i>TABLE 28 SUPPLIERS OF OTHER CONTACTLESS PAYMENT TECHNOLOGIES</i>	71
<i>TABLE 28 (CONTINUED)</i>	72
MARKETS	72
<i>TABLE 29 GLOBAL MARKET FOR OTHER RFID CONTACTLESS PAYMENT TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	72
CHAPTER SIX: MATERIALS HANDLING/LOGISTICS.....	73
SUMMARY.....	73

<i>TABLE 30 GLOBAL MARKET FOR RFID TECHNOLOGIES IN MATERIALS HANDLING/LOGISTICS, THROUGH 2015 (\$ MILLION)</i>	73
<i>FIGURE 9 GLOBAL RFID MATERIALS HANDLING/LOGISTICS TECHNOLOGY MARKET SHARES, 2009–2015 (%)</i>	74
MANUFACTURING AUTOMATION	74
DESCRIPTION.....	74
Production Tracking	75
Silicon Fabs	75
Motor Vehicle Manufacturing	75
Other Manufacturing Applications.....	76
SUPPLIERS	76
<i>TABLE 31 SUPPLIERS OF RFID MANUFACTURING TECHNOLOGIES</i>	76
MARKET	76
<i>TABLE 32 GLOBAL MARKET FOR RFID MANUFACTURING TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	77
SUPPLY CHAIN MANAGEMENT	77
DESCRIPTION.....	77
Description (Continued)	78
RECENT DEVELOPMENTS	79
SUPPLIERS	79
<i>TABLE 33 SUPPLIERS OF RFID SUPPLY CHAIN MANAGEMENT TECHNOLOGIES</i>	79
MARKET	80
<i>TABLE 34 GLOBAL MARKET FOR RFID SUPPLY CHAIN MANAGEMENT TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	80
WAREHOUSE AUTOMATION.....	81
DESCRIPTION.....	81
<i>FIGURE 10 BUSINESS PROCESS FOR WAREHOUSE RFID</i>	81
Receiving	82
Putaway	82
Security/Documentation.....	82
Picking.....	83
Shipping	83
SUPPLIERS	83
<i>TABLE 35 SUPPLIERS OF RFID WAREHOUSE AUTOMATION TECHNOLOGIES</i>	84
MARKETS	84
<i>TABLE 36 GLOBAL MARKET FOR RFID WAREHOUSE AUTOMATION TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	84
SHIPMENT TRACKING	85
DESCRIPTION.....	85
MARKET	85

<i>TABLE 37 GLOBAL MARKET FOR SHIPMENT-TRACKING TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	86
CHAPTER SEVEN: ASSET TRACKING	87
SUMMARY	87
<i>TABLE 38 GLOBAL MARKET FOR ASSET-TRACKING TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	87
<i>FIGURE 11 GLOBAL RFID ASSET-TRACKING TECHNOLOGY MARKET SHARES, 2009–2015 (%)</i>	88
BAGGAGE IDENTIFICATION AND TRACKING	88
DESCRIPTION.....	88
Description (Continued)	89
SUPPLIERS	90
<i>TABLE 39 SUPPLIERS OF RFID BAGGAGE TRACKING TECHNOLOGIES</i>	90
MARKET	90
<i>TABLE 40 GLOBAL MARKET FOR RFID BAGGAGE IDENTIFICATION AND TRACKING TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	90
LIBRARY BOOKS.....	91
DESCRIPTION.....	91
SUPPLIERS	92
<i>TABLE 41 SUPPLIERS OF RFID LIBRARY TECHNOLOGIES</i>	92
MARKET	92
<i>TABLE 42 GLOBAL MARKET FOR RFID LIBRARY TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	93
HOSPITAL ASSET TRACKING	93
DESCRIPTION.....	93
SUPPLIERS	94
<i>TABLE 43 SUPPLIERS OF RFID HOSPITAL ASSET-TRACKING TECHNOLOGIES</i>	94
MARKET	95
<i>TABLE 44 GLOBAL MARKET FOR RFID HOSPITAL ASSET-TRACKING TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	95
CARGO CONTAINER TRACKING AND SECURITY.....	95
DESCRIPTION.....	95
RECENT DEVELOPMENTS	96
SUPPLIERS	97
<i>TABLE 45 SUPPLIERS OF RFID CARGO CONTAINER SECURITY TECHNOLOGIES</i>	97
MARKET	97
<i>TABLE 46 GLOBAL MARKET FOR RFID CARGO CONTAINER SECURITY AND TRACKING TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	98
AUTOMATIC VEHICLE IDENTIFICATION	98
DESCRIPTION.....	98

Parking and Gated Community Access	98
Fleet Tracking/Vehicle Location.....	99
Rail Car Identification and Tracking.....	99
Mining Anti-Collision Systems.....	100
Weighing Trucks	100
Traffic Management	100
SUPPLIERS	101
TABLE 47 SUPPLIERS OF RFID VEHICLE IDENTIFICATION TECHNOLOGIES.....	101
MARKETS	102
TABLE 48 GLOBAL MARKET FOR RFID VEHICLE IDENTIFICATION TECHNOLOGIES, THROUGH 2015 (\$ MILLION)	102
CHAPTER EIGHT: MILITARY APPLICATIONS	103
SUMMARY	103
TABLE 49 GLOBAL MARKET FOR MILITARY RFID TECHNOLOGIES, THROUGH 2015 (\$ MILLION).....	103
FIGURE 12 GLOBAL MILITARY RFID MARKET SHARES, 2009–2015 (%).....	103
FIGURE 12 (CONTINUED)	104
MILITARY LOGISTICS TRACKING AND SECURITY	104
DESCRIPTION.....	104
U.S. Department of Defense In-Transit Visibility Network ...	104
Other Defense Organizations.....	105
RECENT DEVELOPMENTS	105
Supply Chain Security.....	105
Ordinance Security	106
SUPPLIERS	106
TABLE 50 SUPPLIERS OF RFID MILITARY LOGISTICS TECHNOLOGIES.....	106
TABLE 50 (CONTINUED).....	106
MARKET	107
TABLE 51 GLOBAL MARKET FOR RFID TECHNOLOGIES USED IN MILITARY SUPPLY CHAIN MANAGEMENT, THROUGH 2015 (\$ MILLION).....	107
OTHER MILITARY APPLICATIONS	108
DESCRIPTION.....	108
Electronic Identification Tags	108
Combat Casualty Tracking	108
SUPPLIERS	109
TABLE 52 SUPPLIERS OF RFID TECHNOLOGIES FOR OTHER MILITARY APPLICATIONS.....	109
MARKETS	109
TABLE 53 GLOBAL MARKET FOR RFID TECHNOLOGIES USED IN OTHER MILITARY APPLICATIONS, THROUGH 2015 (\$ MILLION).....	109

CHAPTER NINE: OTHER APPLICATIONS.....	110
SUMMARY.....	110
<i>TABLE 54 GLOBAL MARKET FOR RFID TECHNOLOGIES IN OTHER APPLICATIONS, THROUGH 2015 (\$ MILLION)</i>	110
<i>FIGURE 13 GLOBAL RFID SECURITY/IDENTIFICATION TECHNOLOGY MARKET SHARES, 2009–2015 (%)</i>	111
GAMING AND ENTERTAINMENT.....	111
DESCRIPTION.....	111
RFID Toys	112
Sports	112
Casino Gaming	112
SUPPLIERS	113
<i>TABLE 55 SUPPLIERS OF RFID GAMING AND ENTERTAINMENT TECHNOLOGIES</i>	113
MARKET	113
<i>TABLE 56 GLOBAL MARKET FOR RFID GAMING AND ENTERTAINMENT TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	114
LOCATION-BASED SERVICES.....	114
DESCRIPTION.....	114
RECENT DEVELOPMENTS	114
SUPPLIERS	115
<i>TABLE 57 SUPPLIERS OF RFID LOCATION-BASED SERVICES TECHNOLOGIES</i>	115
MARKETS	115
<i>TABLE 58 GLOBAL MARKET FOR RFID TECHNOLOGIES USED IN MOBILE PAYMENTS, THROUGH 2015 (\$ MILLION)</i>	116
SMART APPLIANCES	117
DESCRIPTION.....	117
SUPPLIERS	117
<i>TABLE 59 DEVELOPERS OF RFID SMART APPLIANCE TECHNOLOGIES</i>	117
<i>TABLE 59 (CONTINUED)</i>	118
MARKETS	118
<i>TABLE 60 GLOBAL MARKET FOR RFID SMART APPLIANCE TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	119
MUSEUMS.....	119
DESCRIPTION.....	119
Collections Management and Security	119
Visitor Services	120
Other Museum Applications	120
SUPPLIERS	121
<i>TABLE 61 DEVELOPERS OF RFID MUSEUM TECHNOLOGIES</i>	121
MARKET	121

<i>TABLE 62 GLOBAL MARKET FOR RFID MUSEUM TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	122
DOCUMENT TRACKING	122
DESCRIPTION.....	122
RECENT DEVELOPMENTS	123
Chipless RFID Technology	123
RFID Laser Printers.....	123
SUPPLIERS	124
<i>TABLE 63 DEVELOPERS OF RFID DOCUMENT-MANAGEMENT TECHNOLOGIES</i>	124
MARKET	124
<i>TABLE 64 GLOBAL MARKET FOR RFID DOCUMENT-MANAGEMENT TECHNOLOGIES, THROUGH 2015 (\$ MILLION)</i>	125
CHAPTER TEN: RFID REGULATIONS AND STANDARDS	126
OECD RFID-RELATED REGULATIONS	126
EUROPEAN UNION	127
EUROPEAN UNION (CONTINUED).....	128
CHINA'S RFID REGULATIONS	129
U.S. RFID REGULATIONS	129
FTC RFID-RELATED REGULATIONS	130
DHS RFID RECOMMENDATIONS AND GUIDELINES	131
FCC RFID REGULATIONS	132
FDA RFID REGULATIONS	132
DOD RFID REGULATIONS.....	133
ISO STANDARDS.....	133
EPC STANDARDS.....	134
APPENDIX ONE PATENT ANALYSIS	135
<i>FIGURE 14 U.S. RFID PATENTS BY TYPE OF TECHNOLOGY (%)</i>	135
<i>FIGURE 15 RECENT TRENDS IN NUMBER OF U.S. RFID PATENTS ISSUED ANNUALLY (%)</i>	136
<i>TABLE 65 COMPANIES HOLDING 10 OR MORE U.S. RFID PATENTS</i>	137
APPENDIX TWO COMPANY PROFILES	138
AEROSCOOT, INC.	138
ALIEN TECHNOLOGY	138
ALLFLEX INC.	138
APPLIED WIRELESS ID	139
ASCENDENT ID.....	139
ASK.....	139
AVANTE INTERNATIONAL TECHNOLOGY, INC.	139
AVERY DENNISON CORP.....	140
AWAREPOINT CORP.	140
AXCESS INTERNATIONAL INC.....	141

BARTRONICS AMERICA, INC.	141
BIOMARK, INC.	142
CENTRAK INC.	142
CHECKPOINT SYSTEMS, INC.	143
CLEARCOUNT MEDICAL SOLUTIONS, INC.	143
DATALOGIC S.P.A.	143
DATAMARS SA	144
DEVICE FIDELITY	144
DIGITAL ANGEL	144
ENFUCELL OY LTD.	145
EXAVERA TECHNOLOGIES INC.	145
FEDERAL APD, INC.	146
GAMING PARTNERS INTERNATIONAL	146
GLOBERANGER CORP.	146
I.D. SYSTEMS	147
IER	147
INDESIT	148
INFORMATION MEDIARY CORP.	148
INNOVISION RESEARCH AND TECHNOLOGY PLC	149
INSIDE CONTACTLESS	149
INTERMEC, INC.	150
IPICO	150
ISIS	151
LAKS GMBH	151
LIBRAMATION LIBRARY SYSTEMS	151
LXE INC.	152
MAN ROLAND DRUCKMASCHINEN GMBH	152
MARK ANDY, INC.	152
MARK IV IVHS	152
MINE SITE TECHNOLOGIES	153
NEXPERTS GMBH	153
NXP SEMICONDUCTORS N.V.	153
OATSYSTEMS, INC.	154
ODIN TECHNOLOGIES	154
ORGANICID	155
PARELEC INC.	155
POLARIX APS	156
POLYIC GMBH & CO. KG	156
PRINTRONIX, INC.	156
QINETIQ GROUP PLC	157
REFINE INFORMATION TECHNOLOGY CO. LTD.	157
RF TECHNOLOGIES	158
RSI ID TECHNOLOGIES	158
RACE TIMING SYSTEMS	158

SAVI TECHNOLOGY.....	159
SCHENKER-SEINO CO. LTD.	159
SENSIBLE SOLUTIONS SWEDEN AB.....	160
SENSORMATIC.....	160
SIRIT	160
SONY CORP.....	161
SKYETEK.....	161
SYSGEN	162
TAGMASTER AB.....	162
TAGSYS.....	162
TEKVET TECHNOLOGIES CO.	163
TEXAS INSTRUMENTS	163
THE REVENUE MARKETS, INC.	163
THIN FILM ELECTRONICS AB.....	163
TRANSCORE	164
TWINLIX.....	164
VERAYO	164
VERSUS TECHNOLOGY, INC.....	165
VIVOTECH	166
WASHI WRAP LLC	166
WATCHDATA.....	166
XTERPRISE INC.	167
XAAR PLC.....	167
ZEBRA TECHNOLOGIES CORPORATION.....	167
ZEBRA TECHNOLOGIES CORPORATION (CONTINUED)	168