

# RFID MARKET & ASSEMBLY TECHNOLOGY



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## Report Description

Radio Frequency Identification Devices or in short RFID (a semiconductor device that can store and send data to a reader device by means of radio transmission), known as Transponders / Smart labels / Tag's, are the first genuine alternative to traditional barcode tags in conventional applications as well as to magnet stripe tickets. In addition they open new fields of applications.

Smart Labels / Tag's offer numerous advantages that encourage users to migrate from barcode or magnet strip technology. Their high level of read accuracy, relative insensitivity to dirt, moisture and temperature, their read/write and data-storage capabilities, and the fact that they require no line-of-sight in order to be scanned make them an optimum choice for the retail industry, rental services and libraries, parcel or cargo services, airline baggage handling, asset tracking, and source tagging. What's more, they offer the added advantages of the RFID chip's virtual intelligence. Not only are they capable, say, of supplying IT systems with important logistical information, the data they carry can also be erased and updated at a decentralized source.

The fastest growing future market are contact-less Smart Card's or Smart Tickets already introduced at many big cities around the world for automatic fare collection on public transportation, electronic road tolling, utility metering, and e-business.

Supply chain processes, asset tracking and automatic fare collection on public transportation can benefit significantly from RFID technology. Now, as prices for the technology continue to fall and reliable, cost-effective readers are available that can simultaneously support tags from different vendors, RFID's are poised to fulfill their potential. And with standards activities now well established, for Smart Labels / Tickets / Card's / Tag's in general and for specific applications, the last step for the market to reach maturity has been taken.

As already seen above, the RFID device market is largely diversified. Derived from different applications one unique design doesn't exist, thus different manufacturing technologies are applied.

The aim of this study is to describe main technologies and applications, their respective markets, resulting designs and manufacturing technologies and their manufacturing costs, as well as related assembly equipment. It focuses on main technologies and applications, niche markets with uncertain futures are not included.

The report starts with some general information about the history, development path and base technologies used.

Following is a chapter with detailed information about the applied technologies for all various applications such as car immobilizer tags, animal live stock tags, supply chain labels, ticketing and many more.

Next is a market overview split down in the main segments 13.56 MHz and 125 kHz Transponders and further subcategories such as public transportation etc. The report also shows the market share of the RFID chip manufacturers and the RFID transponder vendors.

After the market overview the report shows today's most commonly used manufacturing technologies, especially for labels and the prefabricated chip-modules. The report also shows the typical manufacturing costs for all various technologies, and gives an overview about the most important transponder manufacturers.

Knowing about the transponder technologies and the applied manufacturing processes, the report describes in detail the chip or module to antenna assembly techniques, the requirement to the equipment, and today's actually most used equipment and their suppliers.

Next is an overview about the manufacturers of modules respectively inlets and their installed assembly equipment.

The report also shows the result of a survey with module manufacturers about their view and specific needs for the assembly of the chip modules.

The report finishes with some hints about risks and opportunities in the RFID market and its corresponding equipment suppliers, and a condensed wrap-up with the most important conclusions.

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