Chapter 1

Comparison of different automatic identification technologies The main features of RFID

Constraints of RFID technology Core technologies of RFID

The advantage of RFID in IoT, and the development trend

Chapter 2 Reader’s function

Reader’s classification: by working frequency, by appearance Influencing factors of R&W range

Reader’s components and their functions: signal processing and control module, RF modules (two types) Tag’s functions

Tag classification: by package form, by power source, by work frequency, by R&W capability Two work modes of RFID middleware

Chapter 3

Different work principles of different carrier frequency Signal voltage and energy: dB, dBm，**重点：如何计算**

Modulation of reader signal: OOK and its problem, solution: PIE; Tag encoding: FM0 Link budget **(重点)**

Antenna gain and polarization, EIRP

Effects of antenna gain，**重点：分析 link budget，几个计算公式**

Chapter 4

Checksum procedure: parity checks, LRC, CRC ASK, FSK, PSK

Difficulty of traditional anti-collision algorithms for solving collision detection between RFID tags TDMA, FDMA, CSMA

ALOHA based protocols: pure ALOHA, S-ALOHA, FSA, DFSA, Q 算法。**重点：性能分析、执行过程**

Binary tree based protocols: BT, QT, **重点：执行过程**

Binary search: Manchester code instead of NRZ code, **重点：执行过程**

Dynamic binary search, **重点：执行过程**

Advantages and disadvantages of ALOHA based anti-collision algorithm Advantages and disadvantages of binary tree based anti-collision algorithm:

Chapter 5

Concept of EPC global network

Five basic services of EPC global network, interaction of different components of EPCglobal network EPC code: Domain Manager Number + Object Class Number + Serial Number

Basic procedures of the EPC Network

Binary tree based variant algorithm for EPCglobal Class 0

EPCglobal C1 G1: PingID; C1G2: four commands (是什么，分别干什么用的), two types of performance trade-offs