**Primitives (the small units of protocol)**

Phy

Data Link

Network

Transport

Session

Presentation

Application

**VLAN Concept**

**Gateway**

**Gateway**

Transport

Presentation

Application

Session

Network

Data Link

Phy

**Routing concept**

Router 2

Router 1

**Routing Table of Router 1**

Destination IP Address Out Port

B 2

Object

CPU

ROM

Memory

RFID Reader

Electromagnetics

**RFID operation**

Antenna

**Data Link Layer Data Link Layer**

Router 1

Router 2

1

2

3

Access Point

**Routing Table of Router 1**

Destination IP Address Out Port

B 2

Date segmentation

Digital Signal 50 Ohm

Analog Signal 75 Ohm

**Bit Timing**

Bit Timing

Bit Timing

**OFDM (Orthogonal Frequency Division Multiplexing)**

Guard Band

Max Max

F1 F2 F4 F3 Frequency

+++++++++++++++++++++++++++++++++++++++++++++++++++++

**Codec/Decod (Analog-to-Digital and Digital-to-Digital Conversion)**

Source

TX

Receive

RX

Analog Signal

Analog

Digital

3 Volts

2 Volts

Analog Signal

Digital

Analog

|  |  |
| --- | --- |
| Digital | Analog |
| 0010 | 2 Volts |
| 0011 | 3 Volts |

|  |  |
| --- | --- |
| Analog | Digital |
| 2 Volts | 0010 |
| 3 Volts | 0011 |

**CSMA/CD**

**(Collusion Sense Media Access)/ (Collusion Detection)**

**Chip Sequence C**

**Chip Sequence B**

**Chip Sequence A**

Payload

Payload

Payload

**Frequency**

Electric Current from south pole to north pole

**Van Allen Belt**

Magnetic Field

Earth

F1

F2

F1

F3



Gun

Radar

Gun

Radar

**ΔF=F1-F2**

**ΔF=F1-F3**

Poll +ACK

**Frequency hopping**