



USB Wi-Fi Dongle

Our Client

One of India's leading digital content distributor.

Why they needed us

They were planning on introducing a new product that would enable their customers to stream content wirelessly. They needed us to handle the new product introduction right from the conception stage to market penetration.

What we did

- Conceptualized and defined the industrial design with electrical and mechanical intensive features.
- Evaluated various Class A components like processors, memories, connectors and all relevant components that have mechanical impact.
- Documented High Level Design (HLD) for electrical and mechanical.
- Designed Electrical Schematics based on HLD using OrCAD.
- Generated gerber files for the PCB.
- Designed the Electrical Layout of the Board using Cadence Allegro.
- Designed the Mechanical Model based on the HLD using SolidWorks. Thermal Analysis was done on these models.
- Ensured that there were no obstruction of the electrical components with the mechanical model using EMN and EMP files.
- 3rd party manufacturers were used to handle manufacturing of the mechanical models and the required tooling.
- Routed the PCB based on the schematic and layout using Cadence Allegro.
- Released the gerber files, manufactured and assembled the PCB.
- Tested and debugged the assembled PCB.
- Developed device Drivers for Windows and Linux based OS.
- Ported the OS to the hardware, loaded the device drivers and booted up the device.
- Tested for Electromagnetic Compatibility and Electromagnetic Interference along with various tests for Reliability.
- RF & Analog Simulations done for multi-band RF isolation.
- Developed GUIs for Windows and Linux based OSs.

Product Specification

- Chipset: Ralink RT5370 Single Chip
- Compatible with IEEE 802.11b/g/n standards
- Compliant with USB 2.0 Hi-Speed
- Range, indoor: 100 metres; outdoor: 300 metres
- Frequency band: 2.4000 ~ 2.4835 GHz

- Data rate: 150/72/54/48/36/24/18/12/9/6/5.5/2/1 Mbit/s auto fallback
- Security: 64/128 Bit Key Length WEP Encryption, WPA and WPA2
- Supports WPS function
- Built-in antenna (1T1R)
- Transmit power: 13 – 18 dBm

How they benefited

They were able to utilize our design, manufacturing, assembly and testing capabilities to introduce a new product into the market in a short amount of time.

About Redeem Systems

Redeem Systems is a pure-play Engineering and Digital Services Company with focus on mission critical highly engineered + high availability systems. Our global presence spans Asia-Pacific, Middle-east, Europe and North-America.

Our focus verticals include – Tele-communications, Medical Electronics and Aerospace & Strategic Electronics.

Our Product Engineering competencies include Product Design and Development, Verification & Validation, Emerging Markets Strategy and Product Life-Cycle Extension through Value Analysis and Value Engineering

Our Digital competencies are focused on Industrial Internet-of-Things (IIoT), Engineering Big Data Analytics and Software Defined Networking (SDN)/ Network Functions Virtualization (NFV).