Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

TRM-915

Linx
Model: TRM-900-T
FCC ID: OJMTRM900T
1  IC: 5840A-TRM900TTA

DT
900

# Linx
TECHNOLOGIES

# RF Module Overview Guide

Linx strives to *make every engineer a hero in record time*™  by minimizing the risk, delays and technical challenges for design engineers to implement wireless functionality and connectivity to the Internet. Unlike other module producers, every aspect of our product and design experience is specifically crafted to achieve Wireless Made Simple®.
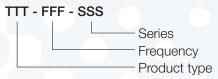
# Wireless made simple®

# Linx RF Module Parameters

| Type | Transparent (Radio only, no built-in protocol or software configuration) | | | | Packetized Wireless Data (Serial UART interface with built-in protocol for data transfer) | | | | | | Remote Control & Sensor (Built-in encoder/decoder/transcoder) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Series** | LC | LR | LT | ES | NT (NEW!) | EUR/DTS | 25 | 250 | HumDT™ (NEW!) | HumPRO™ (NEW!) | HumRC™ (RC) (NEW!) | TT (NEW!) | HumRC™ (RC) (NEW!) | KH3 (NEW!) |
| **Function** | Transmitter | Separate transmitter & receiver | Transceiver | Separate transmitter & receiver | Transceiver | Transceiver | Transceiver | Transceiver | Transceiver | Transceiver | Transceiver | Transceiver | Transceiver | Separate transmitter & receiver |
| **Product Positioning** | Lowest power, easy to implement, flexibility of protocol for remote control and non-periodic data — Lowest cost transmitter | More robust transmitter | Two way link, acknowledgement | Transparent data module, user protocol on external MCU — Analog / audio option | Long range, serial data option | Spread spectrum for data with integrated MCU — Medium range, robust | Medium range, robust | Longest range, robust | Lowest cost spread spectrum data with integrated MCU — Medium range | Medium range | Plug & play for remote control with integrated MCU and FHSS protocol — Medium range | Short range, worldwide acceptance | Long range, robust | Plug & play, integrated encoder / decoder |
| **Size (mm) TX** | 9.14 x 12.70 | 9.14 x 12.70 | 15.72 x 16.00 | 16.00 x 12.95 | 16.00 x 29.21 | 20.32 x 23.75 | 20.32 x 23.75 | 30.48 x 30.48 | 11.43 x 13.97 | 11.43 x 13.97 | 11.43 x 13.97 | 11.43 x 13.97 | 16.00 x 29.21 | 16.00 x 30.99 |
| **Size (mm) RX** | – | 16.00 x 20.62 | 15.72 x 16.00 | 16.00 x 20.62 | 16.00 x 29.21 | 20.32 x 23.75 | 20.32 x 23.75 | 30.48 x 30.48 | 11.43 x 13.97 | 11.43 x 13.97 | 11.43 x 13.97 | 11.43 x 13.97 | 16.00 x 29.21 | 16.00 x 36.32 |
| **Frequencies** | 315, 418, 433MHz | 315, 418, 433MHz | 315, 418, 433MHz | 869, 916MHz | 863–870MHz, 902–928MHz | 868–870MHz, 902–928MHz | 902–928MHz | 902–928MHz | 418, 433MHz, 863–870MHz, 902–928MHz | 902–928MHz | 418, 433MHz, 863–870MHz, 902–928MHz | 2.40-2.48GHz | 902–928MHz | 315, 418, 433MHz |
| **Modulation** | OOK | OOK | OOK | FM / FSK | FSK | FSK | FSK | FSK | FSK | FSK | FSK | MSK | FSK | OOK |
| **Max TX Power** | 4dBm | 7.5dBm | 9.2dBm | 1dBm | 12.5dBm | 12dBm | 13dBm | 23.5dBm | 9.5dBm | 9.5dBm | 9.5dBm | 1dBm | 12.5dBm | 4dBm |
| **TX Current 0dBm** | 2.0mA | 5.4mA | 7.6mA | 6.2mA | 16mA | 38mA | 30mA | 54mA | 20.5mA | 22mA | 22mA | 28mA | 16mA | 1.0mA |
| **TX Current Max. Power** | 5.2mA | 8.5mA | 12mA | 7mA | 36mA | 67mA | 65mA | 190mA | 38mA | 40.5mA | 36mA | 28mA | 36mA | 1.5mA |
| **RX Current** | – | 5.2mA | 6.1mA | 6.0mA | 19mA | 20mA | 20mA | 25mA | 22mA | 23.5mA | 25.5mA | 25.5mA | 19mA | 5.2mA |
| **Power Down Current TX** | <1µA | <1µA | 11.5µA | 90µA | <1µA | 35µA | 3µA | 3µA | <0.3µA | <0.7µA | <0.5µA | <0.5µA | <1µA | <1µA |
| **Power Down Current RX** | – | 28µA | 11.5µA | 50µA | <1µA | 35µA | 3µA | 3µA | <0.3µA | <0.7µA | <0.5µA | <0.5µA | <1µA | 28µA |
| **Sleep Current** | – | – | – | – | 1.4mA | 0.85mA | 1.4mA | 1.5mA | 4.5mA | – | – | – | – | 0.2mA |
| **Operating Voltage Range TX** | 2.7–5.2VDC | 2.1–3.6VDC | 2.1–3.6VDC | 2.1–4.0VDC | 2.5–5.5VDC | 2.7–3.6VDC | 3.0–3.6VDC | 2.7–3.6VDC | 2.0–3.6VDC | 2.0–3.6VDC | 2.0–3.6VDC | 2.0–3.6VDC | 2.7–5.5VDC | 2.7–5.2VDC |
| **Operating Voltage Range RX** | – | 2.7–3.6VDC | 2.1–3.6VDC | 4.5–5.5VDC | 2.5–5.5VDC | 2.7–3.6VDC | 3.0–3.6VDC | 2.7–3.6VDC | 2.0–3.6VDC | 2.0–3.6VDC | 2.0–3.6VDC | 2.0–3.6VDC | 2.7–5.5VDC | 2.7–3.6VDC |
| **Data Rate** | 0.1–5kbps | 0.1–10kbps | 0.065–10kbps | 0.2–56kbps | 1–300kbps | 2.4–115.2kbps | 2.4–115.2kbps | 2.4–115.2kbps | 1.2–115.2kbps | 1.2–115.2kbps | – | – | – | – |
| **RX Sensitivity Min. Rate** | – | –112dBm | –112dBm | –96dBm | –113dBm | –106/–105dBm | –105dBm | –105dBm | –101dBm | –101dBm | –98dBm | –99dBm | –111dBm | –112dBm |
| **RX Sensitivity Max. Rate** | – | –112dBm | –112dBm | –96dBm | –102dBm | –102/–100dBm | –100dBm | –100dBm | –92dBm | –94dBm | –98dBm | –99dBm | –111dBm | –112dBm |
| **Line-of-Sight Range[1]** | 2,500m (1.5 miles) | 2,500m (1.5 miles) | 6,000m (3.2 miles) | 300m (1,000ft) | 5,000m (3.1 miles) | 2,000m (1.2 miles) | 2,000m (1.2 miles) | 7,000m (4.3 miles) | 1,500m (1.0 miles) | 1,500m (1.0 miles) | 1,600m (1.0 miles) | 100m (300ft) | 3,500m (2.2 miles) | 2,500m (1.5 miles) |
| **Operating Temp Range TX** | –30 to 70°C | –40 to +85°C | –40 to +85°C | 0 to +70°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –30 to +40°C |
| **Operating Temp Range RX** | – | –40 to +70°C | –40 to +85°C | 0 to +70°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +85°C | –40 to +70°C |
| **Interface** | Transparent Serial | Transparent Serial | Transparent Serial | Transparent Serial | Transparent Serial or UART | UART | UART | UART | UART | UART | Parallel | Parallel | Parallel | Parallel |
| **Channels/Spread Spectrum** | 1 | 1 | 1 | 1 | 68 / 101 | 32 or 84 DTS | 32 FHSS | 32 FHSS | 4 | 25 / 50 FHSS | 25 FHSS | 25 FHSS | 25 FHSS | 1 |
| **Protocol** | None | None | None | None | None or Serial | DTS | FHSS | FHSS | Frequency Agility, Extended Star | FHSS | RC FHSS | RC FHSS | RC FHSS | RC |
| **Certifications** | None | None | None | None | None | EVM module: FCC, ANATEL | EVM module: FCC | EVM module: FCC, IC, COFETEL / IFETEL | CE | FCC, IC | FCC, IC (900MHz) | None | FCC, IC | None |
| **Applications** | Remote control, keyless entry, sporting, lighting, irrigation, consumer, security/safety, proximity sensing, home and industrial automation, signage, sensors, telemetry | (same) | (same) | (same) | Data transfer, sensors/telemetry, home and industrial automation, M2M, lighting, irrigation, security/safety, proximity sensing, healthcare, signage, automotive aftermarket — Consumer, home, sporting | Medium range telemetry, robust applications | Medium range telemetry, robust applications | Long range, telemetry, robust applications | Consumer, home, sporting, cost sensitive applications, Internet of Things, sensors | Consumer, home, sporting, cost sensitive applications, Internet of Things, sensors | Remote control, keyless entry, sporting, consumer, home and industrial automation, signage, lighting — Digital and analog sensor input, acknowledgement, robust, Internet of Things | Analog sensor, robust, acknowledgement | Digital and analog sensor input, acknowledgement, robust, Internet of Things | Compatible with Linx DS Series |

1. Based on maximum broadcast power, 0dBm antenna and 20dBm link margin.

# RF Module Part Numbering System

Our part numbers are structured as follows: product type, frequency and series.

**TTT - FFF - SSS**

- Series
- Frequency
- Product type

| RF Module Part Numbering System Descriptions | | |
|---|---|---|
| **Product Type Options** | **Frequency** | **Series** |
| RXM (Receiver module) | 315, 418, 433, 868, 900, 916 (Frequency in MHz) | LC, LR, LT, ES, NT, DTS, EUR, 25, 250, DT, RC, PRO, TT, KH3 |
| TXM (Transmitter module) | 2.4 (Frequency in GHz) | |
| TRM or HUM (Transceiver module) | | |

# Basic Evaluation Kits and Master Development Systems

The evaluation and development kits are not an afterthought to us at Linx. They are key to how we make Wireless Made Simple®. We do not consider a designer who purchases our kit to be a customer yet; they are potential customers who must be won over by our development experience and the support we provide. Linx kits are different in that they are:

1. **Intuitive** – We took inspiration from modern consumer products and usability best practices to design our kits to be extremely intuitive. Open the box and begin preliminary testing without reading the manual.
2. **Everything you need** – Contains everything a designer needs to make their product wireless including printed documentation, various Antenna Factor™ antennas, RF connectors and preloaded and configured firmware. There are no additional software licenses to buy. Master Development Kits include PC software to customize the module and troubleshoot the development.
3. **Ergonomic to develop** – Linx is unique in providing a hardware development area with easy to access lines and clips tied directly to output the RF module. The developer can easily switch between the benchmark provided in the kit and the prototype development to troubleshoot.
4. **Affordable** – The goal of Linx is to make it as easy as possible to try out our products, not to make a profit on the kit. We price most development and evaluation kits at $99 and our master development kits at $149 to $199.

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