Wireless Receiver Decoder

Technical spec sheet

Superheterodyne | -116 dBm | Analog RSSI | Pilot timing | CC-BUS (A+/B-) | Daisy-chain

Highlights

- **Long-range RF reception**
  Superheterodyne 433.92 MHz front-end with sensitivity down to -116 dBm for reliable coverage.
- **Packet decode + event forwarding**
  Decodes received ASK packets and forwards events to the application server over CC-BUS.
- **Timing-aware reception**
  Detects pilot/preamble to support time-to-delivery measurement and system diagnostics.
- **Analog RSSI output**
  Provides an analog RSSI signal for signal-strength monitoring and site verification.
- **Noise-robust multi-drop bus**
  Differential A+/B- signaling with optional AGC for high-noise industrial environments.

Key Specifications

RF band	433.92 MHz ISM (315/915 MHz optional variants)
Receiver type	Superheterodyne
Sensitivity	-116 dBm (typical)
Modulation	ASK (OOK)
Data rate	4-10 kb/s
RSSI	Analog output
Pilot detect	Time-to-delivery measurement support
Interface	CC-BUS differential (A+/B-), half-duplex multi-drop
Bus distance	Up to 1200 m (cable dependent)
Nodes	32+ devices per bus (addressing 1-128)
Termination	120 ohm at each end of the bus
Power	+6~24 V DC (typical)

CC Protocol overview:

• Master-slave architecture: one master queries up to 128 addressed receivers.
• Binary frames with CRC for robust error detection and data integrity.
• Frame boundaries are defined by silent intervals (>= 3.5 character times).
• Compact 16-bit register messages can transport numeric values, tables, ASCII text, queues, and more.

Wireless Receiver Decoder

Technical spec sheet

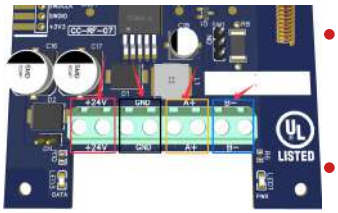
Superheterodyne | -116 dBm | Analog RSSI | Pilot timing | CC-BUS (A+/B-) | Daisy-chain

Connection Diagram

CC-BUS daisy-chain wiring • 120 ohm termination • +6~24 VDC power distribution

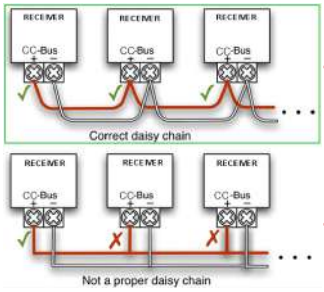
Tip: Use a single trunk cable. Avoid stubs/branches to reduce reflections and improve noise immunity.

1 Terminal block (Power + CC-BUS)



- **+24V / GND**: supply power (daisy-chain with power pair).
- **A+ / B-**: differential CC-BUS data pair (shielded twisted pair recommended).
- Keep polarity consistent across all devices (A+ to A+, B- to B-).

2 Daisy-chain topology



- Connect receivers in a **line (trunk)** - not in star/branch topology.
- Place **120 ohm termination** across A+/B- at both ends of the bus (master end and last receiver).
- Half-duplex multi-drop: only one device transmits at a time

3 Example wiring (power + CC-BUS)

- Daisy-chain **data pair** (A+/B-) and **power pair** (+24V/GND) through each receiver.
- Use cable routing suitable for the environment; keep data pair twisted to maintain balance.
- Typical field baud rates: 9600 to 115200 over long runs (up to 1200 m, cable dependent).
- Assign each receiver a unique CC address (1-128) for master polling.