ELECHOUSE RFID TCP Broker Test Guide

This guide describes how to test the online TCP Broker path for the ELECHOUSE Network RFID Reader. The device is configured through COM3, connects to **rfid-tcp-broker**, uploads reader events, and receives commands from the web page.

Test Date 2026-07-05	**Device Under Test** Network RFID Reader V0.1H
Serial Config Port COM3, 115200 8N1	**Broker Endpoint** www.elechouse.com:9000

1. Tool Overview

ELECHOUSE RFID TCP Broker is an online test utility for validating the network path of an ELECHOUSE Network RFID Reader. The web page creates a temporary test session, the device connects to the Broker over plain TCP, and the page displays uploaded reader events in real time.

Web test page

https://www.elechouse.com/rfid-tcp-broker/

Source code

wilson-elechouse/TCPServer4NetworkRFID

The source repository is provided for developers who want to review the Broker protocol, deploy a customized server, or adapt the online test workflow to their own production environment.

2. Test Scope

The TCP Broker test verifies the full network path between the RFID reader firmware and the online ELECHOUSE test page.

Broker session binding

The web page generates a temporary session code and binds the device TCP socket to that session.

Device TCP connection

The firmware connects to `www.elechouse.com:9000` in ELECHOUSE Test mode.

Event upload

The device uploads card/test events as JSON Lines.

Command downlink

The web page sends commands back to the firmware through the same TCP connection.

The session code is temporary. Use the current code shown on the Broker page during each test. The measured code in this document is only the code used for this run.

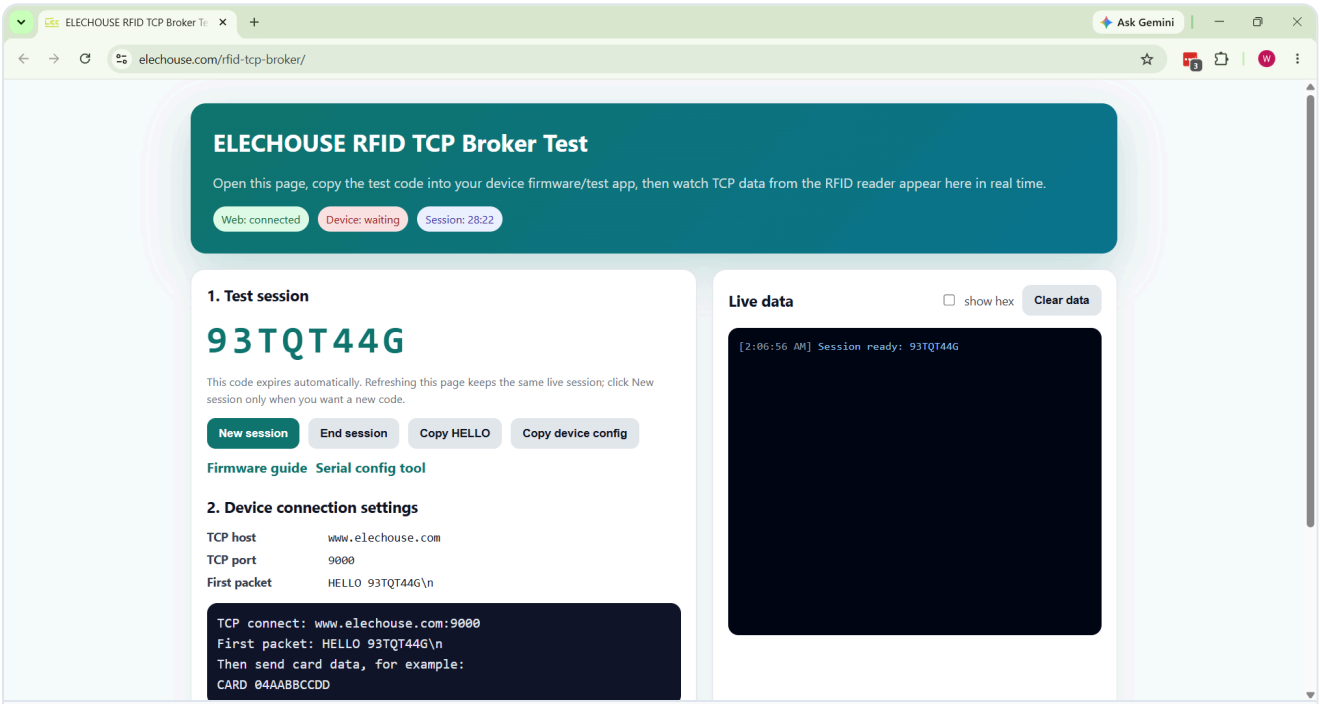
3. Test Environment

Item	Value
Browser	System Google Chrome on Windows
Web test page	`https://www.elechouse.com/rfid-tcp-broker/`
Firmware command input	USB CDC serial on `COM3`, `115200 8N1`
WiFi network	SSID `YOU`, connected with IP `192.168.124.18`
Measured session code	`93TQT44G`

4. Open Broker Page and Get Session Code

1. Open `https://www.elechouse.com/rfid-tcp-broker/` in system Chrome.
2. Confirm that the page shows `Web: connected`.
3. Copy the displayed session code. In this test run, the code was `93TQT44G`.
4. Use `Copy device config` if the host, port, and first-packet reference are needed.

```
Host: www.elechouse.com
Port: 9000
First packet: HELLO 93TQT44G\n
```



The Broker page generated session code 93TQT44G and was waiting for the device connection.

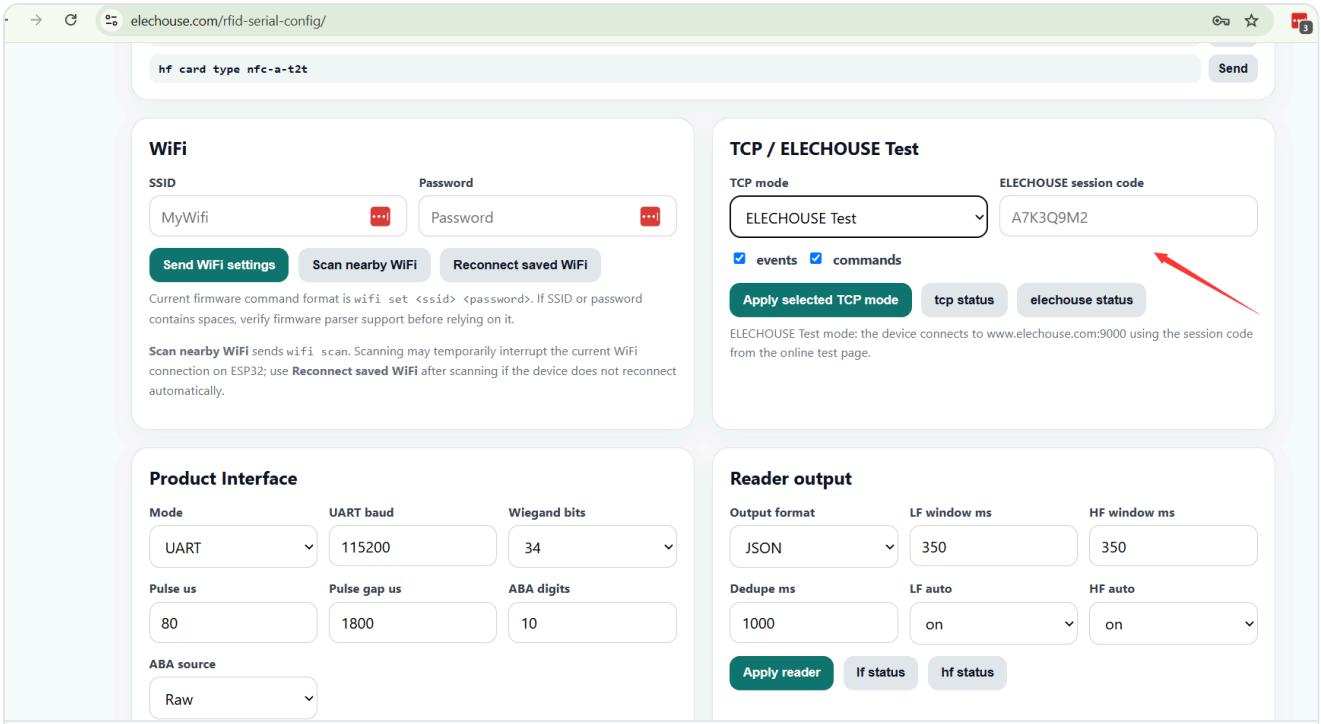
5a. Configure Session With Serial Config Tool

The recommended graphical configuration path is the ELECHOUSE Serial Config Tool. It can configure WiFi and the ELECHOUSE Test session code through Web Serial without requiring a separate serial terminal.

> Choose either Method 5a or Method 5b. A normal test does not require both methods because they configure the same ELECHOUSE Test mode and session code. After completing one method, continue to Section 6.

1. Open `https://www.elechouse.com/rfid-serial-config/` in system Chrome.
2. Connect to the product serial port, usually `COM3`, at `115200 8N1`.
3. In `TCP / ELECHOUSE Test`, select `ELECHOUSE Test` as the TCP mode.
4. Paste the current Broker page session code into `ELECHOUSE session code`.
5. Keep `events` and `commands` enabled.
6. Click `Apply selected TCP mode`, then check `elechouse status` or `tcp status`.

> For a temporary test session, applying the mode is enough. Use `Save settings to device` only when the device should reconnect to the Broker automatically after reboot.



The Serial Config Tool provides a graphical way to select ELECHOUSE Test mode and enter the session code generated by the Broker page.

5b. Configure Session With Serial Commands

Use this method when direct COM3 command-line configuration is preferred over the graphical Serial Config Tool. Do not use historical aliases in product documentation.

> Choose this method only if Method 5a is not being used for the same test run. Both methods produce the same target state: ELECHOUSE Test mode enabled with the current Broker session code.

1. Open COM3 at `115200 8N1`.
2. Check that WiFi is connected with `wifi status`.
3. Enable the online test connection with `elechouse on <session_code>`.
4. Check the broker state with `elechouse status` and `tcp status`.

```
wifi status
elechouse on <session_code>
elechouse status
tcp status
```

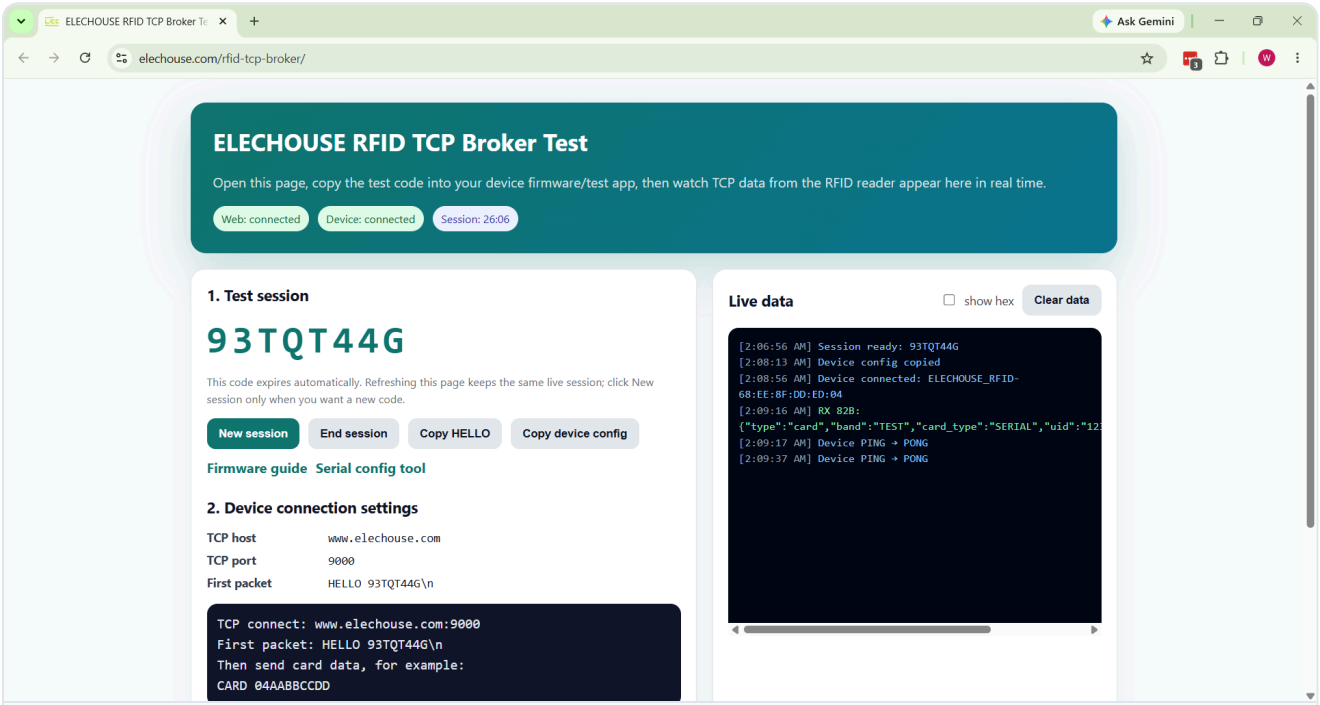
Measured serial log

```
TX: wifi status
RX: wifi ssid=YOU passLen=9 hostname=ELECHOUSE_RFID status=CONNECTED(3)
ip=192.168.124.18 rssi=-50

TX: elechouse on 93TQT44G
RX: OK elechouse test on
RX: ELECHOUSE broker OK 93TQT44G

TX: elechouse status
RX: elechouse host=www.elechouse.com port=9000 session=93TQT44G mode=elechouse
connected=yes brokerOk=yes

TX: tcp status
RX: tcp mode=elechouse host=www.elechouse.com port=9000 listen=9000 events=on
commands=on session=93TQT44G connected=yes brokerOk=yes
```

6. Verify Broker Handshake

After `elechouse on <session_code>`, the firmware opens a plain TCP socket to the Broker and sends a HELLO packet. A successful handshake is confirmed on both sides.

Side	Expected Signal	Measured Result
Serial	`ELECHOUSE broker OK <session_code>`	`ELECHOUSE broker OK 93TQT44G`
Web page	`Device: connected`	`Device: connected`
Status command	`connected=yes brokerOk=yes`	`connected=yes brokerOk=yes`



The Broker page changed from Device: waiting to Device: connected and showed the device ID plus live data.

7. Upload Data to the Broker

Use a real card read for production verification. When a real card is not required, the firmware command `test` can generate a test event to verify the upload path.

1. Keep the Broker page open.
2. Confirm `Device: connected`.
3. Send `test` through COM3 or place an HF card on the antenna.
4. Confirm that the Broker Live data window receives a JSON event.

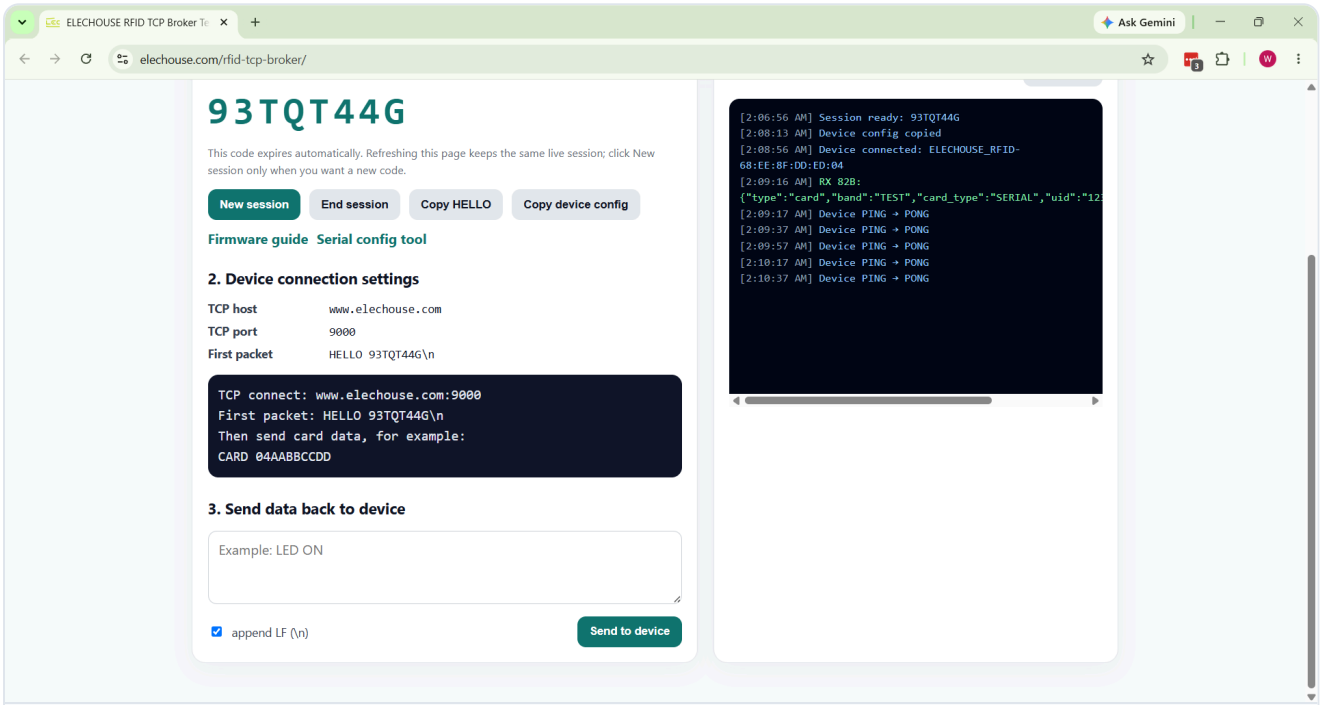
```
TX: test
RX: {"band":"TEST","type":"SERIAL","id":"12345678","ms":15681853}
```

Measured result: the Broker Live data window received an 82-byte JSON event after the firmware test command.

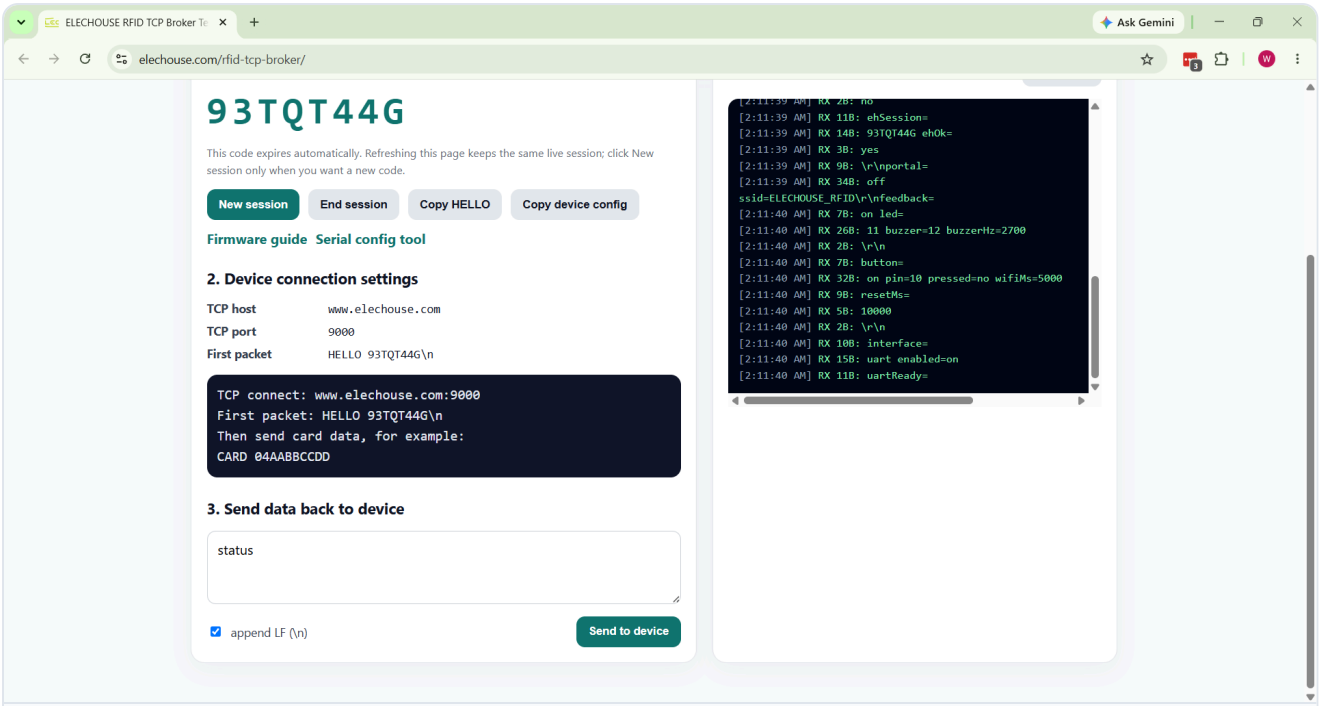
8. Send a Command From the Web Page

The Broker page can send one command line back to the device. This requires TCP commands to be enabled, which is done automatically when `elechouse on <session_code>` is used.

1. Scroll to `Send data back to device`.
2. Enter a command such as `status`.
3. Keep `append LF (\n)` checked.
4. Click `Send to device`.
5. Confirm that the device response appears in Live data.



The Broker page provides a command box for sending firmware commands back through TCP.



The web page sent `status` and received fragmented status output from the device in Live data.

9. Cleanup After Testing

For this run, the session code was used only at runtime. The device was not saved with this temporary code.

1. Click `End session` on the Broker page when the web-side test is complete.
2. Run `elechouse off` to leave ELECHOUSE Test mode at runtime.
3. Run `tcp status` to confirm the TCP mode is off.
4. If a session code was saved during another test, run `elechouse clear` and then `save`.

```
TX: elechouse off
RX: OK elechouse test off

TX: tcp status
RX: tcp mode=off host= port=9000 listen=9000 events=on commands=on
```

10. Troubleshooting

Symptom	Likely Cause	Action
The page stays at `Device: waiting`	The device has not connected to the Broker, WiFi is not connected, or the session code is wrong.	Run `wifi status`, then run `elechouse on <current_session_code>` again.
`unknown_or_expired_code`	The session expired, was ended, or was replaced by New session.	Use the current code shown on the page and update the device with `elechouse on <session_code>`.
`connected=yes` but `brokerOk=no`	The TCP socket is connected, but HELLO binding has not succeeded.	Check the session code and the Broker Live data for an ERR message.
No card events appear	TCP events are off, HF scan is not ready, or duplicate suppression hides repeated reads.	Check `tcp status`, `hf status`, and try `test` to verify the upload path.
Web commands do not work	TCP commands are disabled or the command is missing the line ending.	Use `elechouse on <session_code>` and keep `append LF (\n)` checked.

11. Test Record

Test Item	Result	Record
Broker page opens and generates session code	PASS	Session code `93TQT44G` was generated.
Device WiFi status	PASS	SSID `YOU`, `CONNECTED(3)`, IP `192.168.124.18`.
ELECHOUSE Broker handshake	PASS	Serial log showed `ELECHOUSE broker OK 93TQT44G`.
Broker web-side device state	PASS	The web page showed `Device: connected`.
Data upload	PASS	The `test` command uploaded a JSON event to Live data.
Web command downlink	PASS	The web page sent `status` and received status output.
Runtime cleanup	PASS	`elechouse off` returned TCP mode to off.

No `save` command was executed during this run, so the temporary session code was not stored as a persistent device setting.