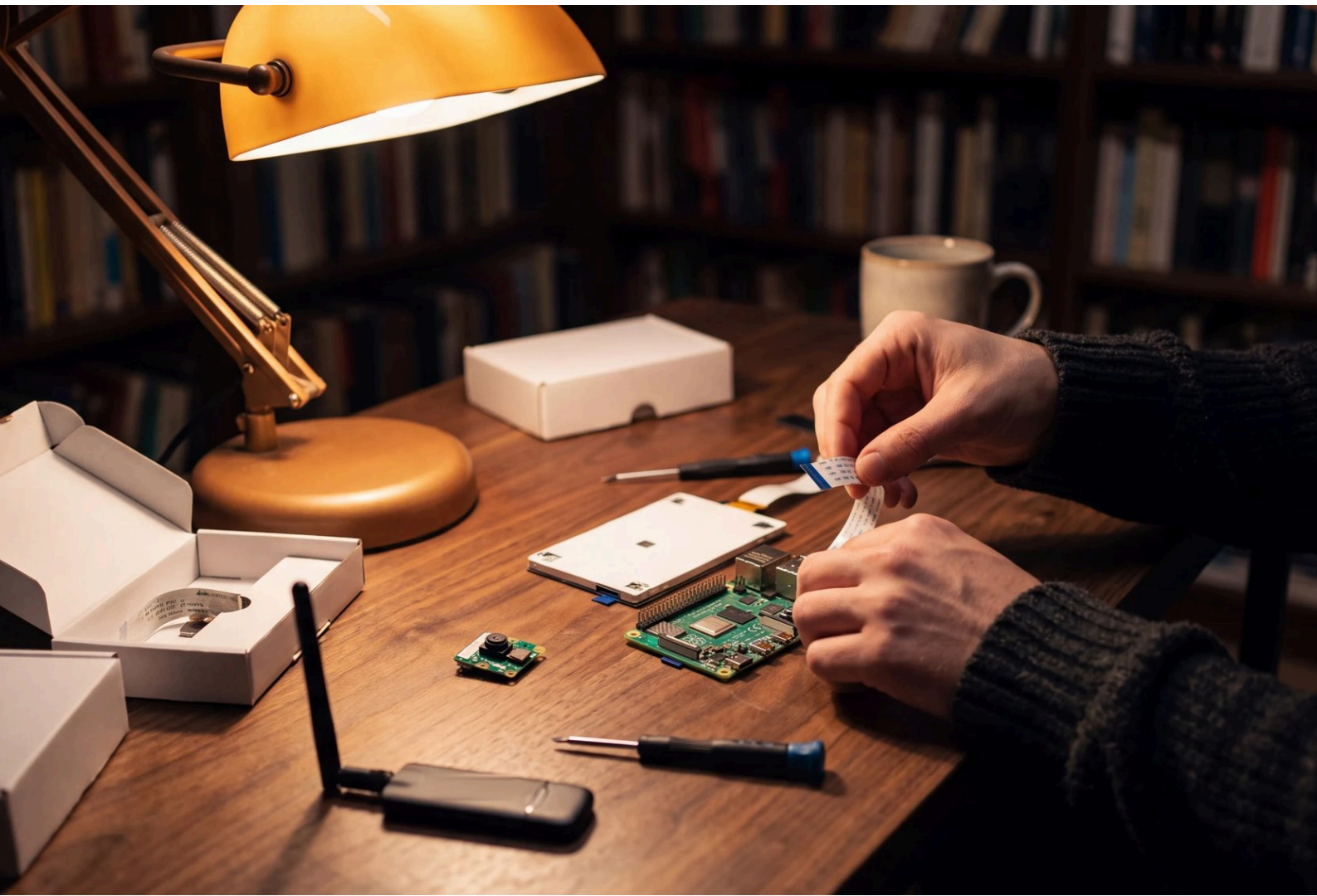




The integration guide

Build on the rail

Contents

1	What you are integrating	2
2	Deployment shapes	3
3	Route one: NATIVE, inside your hardware	4
4	Route two: EMBED, the rail in your app	5
5	Route three: LABEL, your wallet, built and run by us	5
6	Route four: GRID, pure rail access	6
7	Institutions	6
8	Pricing	7
9	The road, on every route	7
10	The document map	7

You are integrating a wallet with no network path to its keys, and a rail that carries its transactions over the voice network. This guide gives your engineers, security team and product owners every route into TELRPC: what we provide, what you build, and the road from first call to certified launch. Section 10 maps every deeper question to the document that answers it.

1 What you are integrating

TELRPC is a broadcast-and-state rail for blockchains, carried over the global voice network. A transaction is signed on the device, keyed into an ordinary call as DTMF signalling, decoded and broadcast by the TELRPC Grid, and confirmed back by echo. The grid runs on carrier infrastructure Minutes Network operates, with local numbers available in 93 countries (17 live in 15 countries today, more added on demand).

The signer is device-agnostic: a phone app, a purpose-built device with no radio, an isolated module inside your hardware, or the TRP/1 frame logic built into your app. TELRPC need not be the signer at all. A product that signs with its own keys, hardware wallet or MPC setup can use the rail only to broadcast an already-signed transaction and read the state a send needs.

Four production components face you:

Component	What it is
TELRPC Grid	The voice edges, the collectors that decode the call, a broadcaster per chain, and the echo return channel. Holds no key that can move user funds.

Component	What it is
Reference implementation	The TRP/1 frame format and the Android TELRPC Wallet source that implements it: framing the signed transaction, keying the tones, checksum and automatic resend, reading state by QR or echo, verifying the confirmation. Under licence and NDA.
TELRPC Console	Your scoped portal: clients and addresses, broadcasts, usage, keys.
API	Key-authenticated JSON for your apps and dashboards.

Isolation. The TELRPC Wallet process holds no `INTERNET` permission and four others, `CALL_PHONE`, `ANSWER_PHONE_CALLS`, `CAMERA` and `USE_BIOMETRIC` (optional fingerprint or face unlock), none of which can open a network connection, so the operating system grants it no network socket. A purpose-built device with no radio proves the same isolation by having no network interface at all. The rail itself needs only `CALL_PHONE` and `CAMERA`; biometric unlock and ending its own call if the network doesn't are TELRPC Wallet app features.

Broadcast. The call keys the signed transaction as one TRP/1 frame, sent whole and checksummed. A frame with a lost tone, or a call that drops, fails the check and nothing is broadcast; the grid signals a resend by echo and the device redials the same signed transaction by itself, so it can land only once. A USDC transfer on Base is about 95 seconds of tones and about two minutes from call to confirmation.

State. Chains that need live state to build a transaction (a nonce, a sequence, unspent outputs, a recent blockhash) receive it offline: a QR read by the camera, or the echo; an EVM account can also take a spoken readback on a call or type it by hand. The camera reads; it never transmits. An EVM chain takes one nonce and gas sync per account, then advances the nonce locally. Every send is self-gassed: the account pays its own network fee, so the grid runs no gas relay and sponsors no transaction.

The exact bytes on the wire are the TRP/1 specification, shared with partners under licence and NDA as part of an integration.

7 deployment shapes, delivered through four commercial routes	1 grid serving every route at once	93 countries with local grid numbers available (17 live in 15 countries today)	Yours brand, users, and keys, always
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2 Deployment shapes

Every integration answers four questions: which device holds the key, which device places the call, how the signed bytes get from one to the other, and what TELRPC supplies. Seven shapes cover the field. Each carries one of two labels: **Available now**, or **Built with you**, an engineering engagement we run with your team.

Shape	Signs	Places the call	Hand-off	TELRPC supplies	Status
1. In your app, on the user's phone (EMBED, LABEL)	The phone, or it receives a signed transaction	The same phone	None, or an imported signed transaction	Reference implementation under licence or whitelabel app, plus Grid	Available now
2. Companion phone for an air-gapped signer	Your hardware wallet, as today	A phone	QR by camera; USB, Bluetooth or NFC	TELRPC Wallet ("Carry a signed transaction") or your app, plus Grid	Available now (QR); Built with you (USB, Bluetooth, NFC)
3. Inside the hardware wallet (NATIVE)	The device	(a) any phone held to the device or a headset jack, keyed by the device's own audio path; (b) the device itself, through its own cellular voice module and SIM or eSIM	Inside the device	Frame logic ported to your firmware under licence, test vectors, certification, Grid	Built with you
4. On the SIM or eSIM	Your signer	Any handset, even a basic phone, through standard SIM toolkit commands	A TELRPC applet on the SIM, issued with a mobile-operator partner	Applet engineering with the operator, plus Grid	Built with you
5. An institution's dedicated handsets	The treasury's HSM, MPC or multisig	A locked-down handset with no internet permission, whose signing addresses are enrolled on the console	QR by camera in the treasury room	Handset app, Grid, address allowlist, seats, audit export	Available now
6. Treasury module in the vault or data centre	The HSM or signing server	A purpose-built appliance: cellular voice module with SIM, or an analogue or private line; no outward IP stack	One way: data diode, serial link or QR	Module firmware, Grid, echo to the module	Built with you
7. Private trunk for the data centre	Your signing system	Your own telephony	Your existing desk systems	A dedicated private trunk on Minutes Network's carrier estate into the grid, with dedicated numbers; the call never crosses the public internet	Built with you

In every shape the grid holds no key that can move user funds and can only carry or refuse the signed bytes; the confirmation echo returns a reference to the transaction id to the device that placed the call. The sections below cover the commercial routes that deliver these shapes.

3

Route one: NATIVE, inside your hardware

Your device finishes its own air gap. It signs and produces the TRP/1 frame; delivery takes one of three patterns, and we engineer the fit with you. A device with its own camera can also import chain state from the relay QR itself, so nothing in the flow reaches for a companion.

Pattern	How it runs	Fit
Companion hand-off	The device signs and passes the signed transaction to a phone over your existing link; the phone dials and keys it. The key never leaves the device; the phone never needs data.	Every current device, no hardware change. QR: Available now. USB, Bluetooth, NFC: Built with you
Built-in line	A device variant with a cellular voice module and SIM or eSIM dials the grid itself. No second device at all.	Devices with a voice module. Built with you
Own audio path	The device keys the tones through its own speaker into any phone held to it, or down a headset jack. The audio path passes a joint engineering review before certification.	Any phone. Built with you

We provide the protocol test vectors, the frame logic ported to your firmware under licence, engineer-to-engineer support, and certification. You provide the signing integration and the industrial design you are already the best at.

4

Route two: EMBED, the rail in your app

Your companion app gains the offline broadcast-and-state path by building the TRP/1 frame logic in, from the reference implementation. TELRPC need not be the signer: carry a transaction your own signer made, or sign on the device and carry it the same way. The integration surface is four things:

Surface	What your app does
The frame	Encodes the signed transaction as one checksummed TRP/1 frame and keys it as DTMF on an ordinary call, byte-for-byte against the reference vectors
The call-in numbers	Dials a grid number from the dial plan the app carries; the console API lists the grid's active numbers
The state return	Imports the nonce, sequence, unspent outputs or recent blockhash from a relay QR read by the camera, or from the echo, and never opens a socket to get it
The echo	Runs the echo receiver in the call-screening role, redials a refused frame by itself, and confirms only on a transaction id it computed locally

The Android TELRPC Wallet is the reference implementation of all four, and its source is shared with you under licence and NDA. You keep your UX, your onboarding and your brand.

5

Route three: LABEL, your wallet, built and run by us

A complete companion wallet under your name, owned by you, engineered and operated by the team that built the TELRPC Wallet. You give us brand assets and store accounts; we deliver the app, the grid connection, the receipts, the updates, and the

audit trail. One engineering fee, then wholesale per-broadcast terms. The fastest route to shipping the never-online claim under your own mark.

6 Route four: GRID, pure rail access

You build everything; we carry everything. Your infrastructure and apps use the protocol under licence and the API; your users dial the same global pools.

Endpoint	Returns
Dial plan	The grid's active call-in numbers, grouped by country
Wallet registration	Registers a wallet address on your account
Broadcasts	Your broadcast history, status, metered fees
Fees	The published fee schedule
Grid status	Grid heartbeat for your status pages
Clients	Wallet makers: provision and list your end-clients with the partner key
Client addresses	Wallet makers: the wallet addresses under each client
Usage	Wallet makers: per-client usage

Authentication is a key issued in the console and shown once. The same console gives your operations team the live view: every broadcast and every meter.

7 Institutions

Institutions keep their signer and their approval policy: multisig, MPC quorum or HSM signs as it does today, and TELRPC carries the finished transaction. Today that runs on dedicated handsets (shape 5): locked-down phones with no internet permission, whose signing addresses are enrolled on the institution's console, carrying the signed transaction from the treasury room. A treasury module in the vault or data centre (shape 6) and a private trunk with dedicated numbers (shape 7) are built with you.

The console runs now: a committed-capacity term on a named package (Treasury Core, Plus or Max, or custom); the treasury addresses that broadcast on the committed term, an allowlist the grid reads for entitlement and billing (an address outside it broadcasts only on its own prepaid credit); a seat register recording each team member with the role admin, operator or viewer, every change written to the audit log, with console sign-in provisioned per account; usage against committed capacity; a time-ordered audit log of every change and every broadcast, with CSV export of the audit log and the capacity statement; and an SLA view with a 99.9%

uptime SLA, a 99.0% frame-acceptance target and a 4-hour priority response. Branded deployments ride the LABEL route. Onboarding runs beside your security review. The institutions brief carries the full control table for a risk committee.

8

Pricing

Every call request is 10 cents of prepaid credit (a broadcast, a sync or balance read by call, a swap price check, a swap, a token approval, a contract read), charged only when successful; there are no pack discounts. A send is never charged a percentage. Every fee is shown on the review before a swap. Wallet makers and integrators buy wholesale, and institutions take committed-capacity terms, both agreed by volume and invoiced monthly. TELRPC deploys no contract on any chain.

9

The road, on every route

Step	What happens	Who
Scope	Your security team receives the whitepaper, the security model, and the protocol spec under NDA; we answer everything; the route and markets are agreed	Both
Pilot	One market on the live grid; your team names an address, places the call and watches the confirmation echo arrive with no internet in the room	Both
Certify	Protocol conformance against the reference vectors, the TELRPC INSIDE mark, wholesale terms in writing	Us
Launch	Rollout on your calendar, our engineers on the line, capacity added ahead of your curve	Both

10

The document map

Your question	The document
Why is this possible at all?	Scientific whitepaper
How does the whole system work, in an hour?	Technology overview
What can an attacker actually do?	Security model
What are the exact bytes on the wire?	TRP/1 protocol specification
What is the commercial shape?	Wallet-maker brief
How does a treasury run on this?	Institutions brief
Which integration type and deployment shape fit us?	The Integrations Paper
What exactly do our engineers implement?	SDK and API reference

Your question	The document
How do we integrate, end to end?	This guide
The whole story, as it is pitched?	The TELRPC Brief

Bring us the route you want, or one not written down here. Custom paths are part of the deal. Contact us at contact@telrpc.com.

T E L R P C

The rails that never go online.

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