

Lorath Communications Units

Seeing a shortfall of equipment available to the [LSDF](#), developers decided that a suite of dedicated communications equipment was desirable and set about developing the tools that would be needed to better facilitate communication and coordination between LSDF forces in space and on the ground, in an effort to modernize from equipment which had been produced nearly a decade prior.

Due to the varying requirements of different combat theatres a spectrum of communications units were developed rather than a single item. To make the best use of these devices they are all designed to readily communicate with each other allowing for a communications web to be formed in any deployment.

For the purposes of security all devices are capable of accepting quantum entangled encryption hardware allowing for secure communications during operations.

The full suite of Lorath communications equipment entered circulation in [YE 38](#)

Production Info

- Developers: [Lorath Matriarchy](#), [LSDF](#), [Fyunnen House](#), [New Tur'lista House](#)
- Manufacturers: Lorath Matriarchy, LSDF
- Fielded by: Lorath Matriarchy, LSDF

Lorath Personal Micro-Transceiver Communications Unit

At the smallest scale of the developed hardware, the Micro-Transceiver is as the name implies a tiny communications suite typically a built into a plug inserted into the ear-canal, or sealed within an implant that is capped on a tooth. In either location the Micro-Transceiver works by [vibrating the user's skeleton](#) to produce audio that only the user can hear, and picks up either regular or sub-vocal speech.¹⁾

Due to the size limitation and the typical location of the unit the device making high energy transmissions unattractive it is limited to radio frequency transmissions providing a range of up to 8KM (5 miles).

A variant on this system has the device implanted as a small sub-dermal device that is directly connected to the user's cybernetic systems allowing for more intimate control of the device. In this configuration messages are sent and received via the user's Neural OS negating the need for placement near the head of the user. A hybrid organic and metallic pico-jelly antennae can be used to improve reception slightly. An optional incorporation of equipment repairing nanomachines can also be included with the device, which would be able to repair the implanted device in the event of damage, as well as implement physical adjustments to the device components if needed.

All versions of this unit draw power via voltaic pickups that absorb radiated infrared from the body and store it within a micro-capacitor intended to function as a power buffer to ensure continued function even

during periods of consistent high demand use.

Lorath Personal Communications Unit

A step up from the Micro-Tranciever, the Personal Communications unit is a small device approximately the size of a small reusable metal lighter.²⁾ This unit is easily stored within pouches on the owner's pack webbing, or in uniform pockets allowing for minimal impact on the soldier's kit. The unit contains a small reservoir of plastic and metallic pico-jelly that can be used to form an physical jack for direct connection, or an external antenna to improve broadcast and reception performance if needed, as well as providing the means to stick the communications unit in a location other than the user allowing for flexibility of use.

Due to the larger size this unit allows more flexibility in communications featuring radio, and microwave either in a wide broadcast or tight beam. The radio and microwave communications have a planetary range of 400KM (250 Miles) and can reliably receive signals from a distance of up to 1AU.

Like the Micro-Transceiver, the Personal Communications Unit can be installed as a cybernetic implant for those who wish it, or in those cases where a soldier requires the improved communications capability. Allowing direct communication between the Unit and the user's cybernetics.

Either a one 2.5cm (1 inch) diameter [CDDA unit](#), or a small hyper-capacitor with induction charging capability provides power to the unit depending on the needs of the user.

A modular accessory slot has also been incorporated into external use variations of the device, allowing for users to swap in hardware components such as cameras, laser-transmitters, biometric scanners, volumetric projectors, LED lamps, and other various after-market add-ons. Notably, the accessory slot is not designed to interface with on-board memory within the communication device. As standard all units include the capability to flip open, to reveal a 1nm thick interface screen, as well as a haptic feedback enabled input-pad.

These personal communication units are designed for civilian and government applications, with build quality aimed at providing a rugged damage-resistant structural design for both. These units are designed with their own limited on-board OS, with government-use models being built around software aimed at optimizing communication effectiveness, and security features. Civilian models are aimed at providing data-management features and meta-data connectivity. Build allocations have been made to allow for open-source add-on software for civilian model units.

Lorath Hand-Held Communications Unit

The Hand-Held Communications unit is a larger unit 25cm tall, 8cm wide, and 5cm thick.³⁾ This size provides much larger ranges approaching 1000km (621 miles) utilizing [skywave propagation/radio skipping](#) off of a planet's ionosphere allowing for communications beyond the curvature of a planet's surface in addition to the capacity to reliably receive signals from as far as 50AU assuming no

obstruction. This unit like the personal scale features a small reservoir of metallic pico-jelly that can be used to form physical jacks, or an external antenna potentially over surfaces or outside of windows to improve broadcast and reception capabilities without exposing the user to danger.

In addition to the improved range, the communications device features a larger battery of communications types allowing for more options when communicating between friendly forces. These include modes of communication present in the smaller versions along with laser communication, subspace radio projection with a range of 20 AU, and in special circumstances a quantum modem may be installed.

This is the largest communications unit that may be installed as an integrated cybernetic system. Due to its size however the components are typically decentralized throughout the body of the individual, with specific placement of the components prone to change due to possible conflicts with per-existing hardware. Organic and metallic pico-jelly are used to convert the user's skeleton into an antenna improving the performance of the unit, this is done so that the pico-jelly can be withdrawn into the unit to prevent any complications that may result from lacing the user's skeleton with conductive material.

This size of communications unit typically features a triple stacked 4cm diameter CDDA unit married to a hyper-capacitor for power. In situations where fewer moving parts may be desired a small **QNC** may be installed in its place.

Much like the personal communication device, this variation of communication unit also includes a flip-open capacity, interface pad and screen, OS, software plus hardware features, and four modular accessory slots.

A fifth modular slot is also incorporated as a 'Secure Interface' slot, which can interact with a limited allocation of on-board memory within the unit, allowing for memory intensive add-ons to be used, while creating a buffer which prevents direct external access to the primary storage and processing memory of the unit. A physical disconnect is incorporated into this slot, allowing for a hard disconnect in the event of attempted data breach.

Lorath Backpack Communications Unit

A backpack sized unit provides mobile heavy duty communications options to deployed forces, granting the capacity to project radio, microwave, laser, neutrino, and subspace communications, as well as having the option of installing a quantum modem when needed. The device is 48cm tall, 34cm wide, and 21cm deep. Notably the backpack unit features a large reservoir of plastic and metallic pico-jelly that can be used to create physical wired jacks. Alternatively it can be used to spiderweb across surfaces or form a parabolic dish to improve the projection and reception of signals.

Typically used to accommodate inter-planetary communication between groups of forces actively operating, this unit has been designed to provide a maximum interstellar range of 10LY allowing for inter-system communication if needed. To this end the Backpack unit can reliably communicate with all forces on a planet assuming no major obstructions.

This unit is typically powered by a dedicated QNC, or a 12 unit 6cm diameter CDDA array fed hyper-capacitor pack.

Backpack communication units are produced sans add-ons and special software features outside of a high-end software-hardware encryption suite, being entirely focused upon one goal; maintaining communication. Government specification models are jacketed in a micron-thin [Nerimium](#) foil, with a [Durandium Alloy](#) frame, and [stone-thread fiber](#) laminated polymer casing with a conductive fiber weave creating a [faraday cage](#) around sensitive internal components.

Lorath Communications Server

The largest unit produced for field deployment with infantry detachments, this unit is intended to function as a transportable command and communications hub. The server is 1m in length, 1m in width, and 2.5m tall in size and features the largest variety of dedicated communication options. Like the backpack unit, the Server features a sizable reservoir of metallic and plastic pico-jelly that can be used extruded and used form physical wires and access jacks. In other circumstances the pico-jelly may be used to spiderweb across surfaces as an antenna or form a parabolic dish for improved signal performance.

Along with to the more basic forms of communication, the Server Unit provides a reliable range of up to 80LY for subspace enhanced radio, microwave, laser, neutrino broadcasts.

Typically the server is linked to a home ship, or forward operations base with entangled quantum-encryption hardware for additional security and ease of communications. For the purpose of creating secure communications networks the Server typically comes with quantum entangled security chits that can be inserted into subordinate devices to provide quantum-encryption.

Communications Servers are typically powered by a power armour grade QNC, however they may feature a bank of 20 stacked 6cm diameter CDDA units that feed a hyper-capacitor.

At the top of the server design 'food chain' are server units which have been built around the incorporation of a Matriarchy built [non-SI type ARIA](#) body-less processing unit, allowing for large scale network optimization.

OOC Notes

[Eistheid](#) created this article on 2016/03/16 19:40.

Approved on 2016/04/03 17:51.

1)

To facilitate optimal performance for the user a brief calibration process occurs on initial activation.

2)

4cm x 3cm x 1cm

3)

10"x3"x2"

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Last update: **2023/12/21 04:23**

