

These are the technologies given to, stolen by, or developed by the Terrans. I only focused on those technologies that were repeatedly used over a long period of time.

Note : many of the more advanced technologies no longer worked after the hyperimpedance increase, or had to be modified to work.

Ship Hulls

Terkonite (24th century AD)

This is a structurally compact, bluish shimmering metal *composite* primarily used in Terran starship construction. Its components are metals (iron), organic matter (*long* polymers) and hyperenergetic components.

The structure of Terkonite is more dense than the Arkonide *version*. Hyper-energetic irradiation and bombardment densification artificially increase the cohesive forces. Terkonite has a density of 25,880 kg/m³, exceeding the strength of Arkonite by a factor of twelve. The melting point of high-quality alloys is given as 35,000 Kelvin.

Ynkelonium-Terkonite (35th century AD)

This is a pink alloy, with a density of 33,500 kg/m³, is 30 times stronger than Terkonite, and has a melting point of 100,000 Kelvin. Depending on the Ynkelonium content, is partially resistant to anti-matter. If complete resistance to antimatter is required, a layer of pure ynkelonium can be galvanically applied to any surface as a so-called maverick cape.

Shields

Shields can protect an individual or a spaceship.

Impact field / Gravo field (20th century AD)

This low-density screen can hold in atmospheres, and act as a heat shield. *High-power fields can allow machines to hover a few inches off the floor.*

Standard energy protection field (20th century AD)

Used to deflect meteorites and interstellar matter during space travel. It can defend against standard energy weapons, but not against higher-dimensional weapons like transform cannons or converter cannons.

HÜ screen (25th century AD)

A 5-dimensional green-colored screen with an unstable overload zone that sends incoming objects or energies into linear space (between the standard universe and hyperspace). HÜ is an abbreviation for “high-energy overcharge” (in German). Psionics cannot penetrate or act thru this screen.

Paratron screen (25th century AD)

A 5-dimensional blue-colored screen that sends any incoming energy into hyperspace. It blocks normal radio communications, but can be modified to allow it. It also blocks teleportation. Multiple screens can be created around a ship for more protection. Note : paratron technology “creates a controlled connection between space-time and hyperspace”. Eventually, screens large enough to enclose a planet and an entire solar system are made.

(Paros) Shadow screen (36th century AD)

This *paratron-based* screen sends the object *inside* it partially into hyperspace so that 4-D physical and energy attacks cannot affect it, but it can still be affected by hyperphysical attacks, and remains barely visible in the standard universe. It consumes hypercrystals (see below) to operate. It wasn't until 1300 years later (14th century NGE) that the technology was re-discovered.

Crystal screen (14th century NGE) – protects an entire solar system

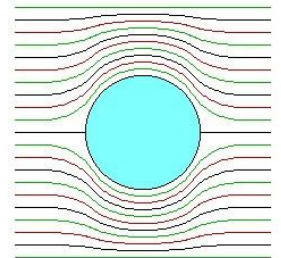
Hyperenergy is created by satellites, typically by solar tapping (see below), which modifies the sun's naturally emitted hyperenergy; at the heliopause this interacts with hyperenergy coming from interstellar space, creating a barrier to normal matter. Anything trying to enter the solar system is transferred to a parallel reality.

Cloaks

Cloaks hide an object from detection.

Deflector screen (20th century AD)

Sends incoming electromagnetic energy smoothly around the object within it → preventing any detection. It affects infrared, visible, and ultraviolet energy. A paramechanical device converts some of the incoming radiation to whatever's inside it as paramental energy, so the user can "see" his surroundings.



Antitemporal Tidal Field (35th century AD) – protects an entire solar system

An ATG (*in German*) field uses paratron technology to create a field in a geometrically closed form and envelop a micro-universe created by it, which is separated from the Einstein universe by a variable time difference. This time difference is determined by the power of the field generator and the efficiency of the projector. As a rule, a "skip" of up to ten hours is possible, whereby the greater the time difference, the more difficult it is to locate.

An ATG field can generally only be detected with devices that can locate in more than four dimensions. The weapon effect of units within the ATG can only effect *things in the standard universe by having a very small time difference.*

Stealth coating (14th century NGE)

Energy *weapons* and generators can be easily located due to their scattered radiation. Modern Terran hull systems have a stealth coating that also contains Howalgonium or CV-Embinium, among other things. These hull designs enable almost complete suppression of all energy emissions, and therefore practically undetectable.

Weapons

Disintegrator (20th century AD)

A disintegrator is a device that is able to neutralize the electrostatic bonding forces between molecules. The binding forces between the molecules are neutralized by means of a hyperfield. The beam is generated *by* microwave radiation which is sent through a hypercrystal and becomes a five-dimensional disintegrator pulse at the focus. As a result, the bombarded matter in the affected area disintegrates into fine dust or gas, without generating heat.

Impulse weapons (21st century AD)

These weapons create a small nuclear fusion which creates a beam of energetic plasma.

Anesthesia Radiator (22nd century AD)

This is a hypersonic *weapon* whose vibrations lead to temporary unconsciousness. The vibrations can penetrate *weaker* energy shields. They block the nerve reflexes of living beings, which leads to deep anesthesia within seconds. Those affected wake up on their own after a long time without suffering any consequential damage.

Thermal Emitter (22nd century AD)

This weapon is equivalent to a high-energy laser.

Transform Cannon (22nd century AD)

This gun shoots transform bombs by dematerializing them and rematerializing them in the target in zero-time. This is similar to a fictive transmitter (see below). Bombs equivalent to 500-5000 gigatons of TNT can be delivered.

In the last part of the transform cannon, the target materializer, the projectile is transported to the pre-calculated target point and causes the detonation through the rematerialization shock (transform effect). If the bomb does not detonate at the moment of materialization, it would *explode* in hyperspace. Stable materialization could not be achieved.

Transform cannons can usually only fire bombs that have been specially developed for their series.

Gravity bomb (22nd century AD)

Gravity bombs, also known as spiral fields, are weapons that open up a huge gap to hyperspace. Everything that comes within the sphere of influence and is not protected accordingly (e.g. by a strong paratron shield) is radiated into *hyperspace*.

A gravitational bomb is not a bomb in the sense of an explosive device. Rather, it is a light-*speed* spiral field of stabilized dimensionally superior energy, which is optically perceptible as a violet energy path. If the spiral field collides with matter, it is dissolved and torn out of *standard* space-time. The bomb emits extremely large and directed amounts of hyperradiation at the target location. This radiation then forms *a high pressure at the interface*. This gravitational or "gravity shock" then leads to an unstable hyperspace breakdown of incalculable proportions. The rupture, which lasts only fractions of a second, causes matter and energy to flow uncontrollably into hyperspace.

Depending on the number and strength of the bombs, they can be used to *destroy* spaceships, *planets*, and entire solar systems.

Converter cannon (*not sure if or when used by Terrans*)

This generates an unstable five-dimensional bubble within the selected target area, which encloses the target, for example a spaceship. When the field is extinguished after approximately one hundred thousandth of a second, the matter within it is de-materialized without a target point. The target object is therefore completely destroyed.

Interval gun (25th century AD)

The weapon emits hyperradiation that is exactly in the hypermechanical frequency band. The effect is an extremely large, purely mechanical force that acts on the target area for a very short time, *thus* shattering every known material or crushing it to dust. Even the most modern ynkelonium-terkonite alloys could be severely damaged. Only Paratron or stronger shields were able to withstand it.

FpF (25th century AD)

The external energy direction finder and frequency modifier (FpF *in German*) was developed to enable transform cannons to penetrate paratron screens.

Paralyzer (36th century AD)

A paralyzer uses a combination of electromagnetic and hyperelectromagnetic waves, which paralyzes the peripheral nervous system of the locomotor muscles. The autonomic nervous system is not subject to conscious control, as it is responsible for vital bodily functions such as heartbeat. Although the victim can no longer move, they can still hear, see and think.

Constant Crack Needle Point (36th century AD)

Also abbreviated as KNK (*in German*), it first generates a faster-than-light tube field that weakens or even penetrates the target's protective shield. The emitted energy (thermal or interval) is then transported to the target point by the tubular hyperfield at faster-than-light speed and without loss, while at the same time being focused.

Multi-Variable High-Energy gun (5th century NGE)

Also abbreviated as MVH (*in German*) or called a Dissonance or combi-radiator gun, this is a combination weapon of Thermal Emitter, Disintegrator and Paralyzer. Some models can emit interval and/or impulse beams.

Paratron Transformer (12th century NGE)

This combines a transform cannon with paratron technology. The target is transferred into hyperspace without being able to fall back into Einstein space. In effect, it is immediately de-materialized. *In the 14th century, they were converted into Paratron Throwers, having the same effect but with a smaller range and target size.*

VRITRA gun (14th century NGE)

Like the dissonance gun, the VRITRA gun is also based on the combined operating principle of the KNK gun and the interval gun.

Within a faster-than-light tube field, which can weaken or even penetrate an enemy protective shield, a tightly focused interval beam runs, hyper-mechanically deforming or shattering the target. In contrast to a normal KNK weapon, the lines of the hyper-energetic tube field run in a spiral, so that the enemy's protective shield is virtually "drilled open". The special feature of the VRITRA gun is that a UHF *hyperenergy* component has been added to the interval beam to increase the penetrating and destructive power of the weapon beam.

Aagenfelt Flash (16th century NGE)

This device sends any hyperspace technology (such as shield generators, weapons, and space drives) inside the target to hyperspace.

Linear space torpedo (21st century NGE)

This device enters linear space, seeks out ships in linear space, and explodes. It can remain in linear space, waiting for targets to come near.

Planet and solar system killers

Arkon bomb (20th century AD)

Starts an unstoppable nuclear "fire", causing fusion of all heavy elements in the planet's crust.

Hyperinmestron (25th century AD)

Converts part of a star's matter into antimatter, converting the star into pure energy; bigger than a supernova, destroying everything in the star's system.

Shiva bomb (15th century NGE)

Creates a 50,000 mile wide and 500,000 mile long tear in space-time into hyperspace, pulling any nearby planets into it almost instantly.

Space drives

Transition drive (20th century AD)

This drive throws the ship into hyperspace, and once it has reached its destination, brings it back to normal space. The greater the leap distance, the greater the physical stresses on the crew. The ship must be travelling at a significant fraction of the speed of light to lower the energy consumption of the jump. Maximum jump distance is 5000 light years, and the calculations for a jump can take 30-60 minutes. Upon entry and exit, a structural vibration in space-time is created, which can be dampened by other devices. These drives wear out after about 400,000 light years of travel.

Linear drive (22nd century AD)

This drive allows continuous faster-than-light travel thru hyperspace directly. Once entering hyperspace, the ship could be flown continuously to its destination. There is no pain, no calculations, and no structural vibrations associated with this. The ship's velocity thru hyperspace was provided by slower than light impulse drives. These drives wear out after about 300,000 light years of travel, so "spares" had to be carried on-board for intergalactic trips. The typical speed is several million times faster than light, and wear out after about 300,000 light years of travel.

Dimetrans drive (25th century AD)

This engine is based on paratron technology. The flight itself takes only a few seconds. Due to the construction, it always ends in the center of gravity of the target galaxy, which could be dangerous.

Waringer Converter drive (35th century AD)

This engine allows faster-than-light travel thru linear space from 4000 up to several million times light speed.

Dimesexta drive (35th century AD)

The Terrans developed the Dimetrans engine into the more flexible and safer Dimesexta engine for intergalactic flights. It allows travel at many billions the speed of light within the Dakkar zone, between the 5th and 6th dimensions, but this makes it impossible to use within a galaxy. It requires sexagonium (below) to work.

Metagrav drive (5th century NGE)

This engine provides both less than light speed and faster than light speed travel. It works by creating an artificial black hole in front of it, which "drags" the ship after it. For faster than light speed, it creates a field around itself for protection. Speeds from 60 to 85 million times the speed of light are possible.

Hawk-II Linear drive (14th century NGE)

This linear drive provides its own propulsion thru hyperspace, can travel up to 750,000 times the speed of light, and wears out after about 25,000 light years of travel. It functions despite the increased hyperimpedance, but consumes hypercrystals during travel.

Hawk-III (15th century NGE) : allows course changes in hyperspace; can stay stationary in linear space for cloaking and protection; inside its hyperspace bubble, the hyperimedance is reduced; 1.4 million times light-speed

Hawk-IV (16th century NGE) : allows stationary entry into linear space

Hawk-V (16th century NGE) : provides propulsion in normal space; 3 million times light-speed

Hypertrans progressive drive (16th century NGE)

A paratron bubble and Paros Shadow Screen is created around the ship using Salkrit hypercrystals (see below), whose hull must be coated with ynkalkrit. This process does not require the ship to be travelling very fast in the standard universe to happen, unlike other drives. It can travel up to 500 million times the speed of light. All living creatures must be placed in suspended animation to avoid exposure to lethal radiations.

Transmitters (transporters)

A transmitter envelops the *object (including people)* to be transported in a hyperfield *bubble* and transports it through hyperspace to its destination - a process that works in a similar way to the transition drive. The transmitted objects are transferred to their destination, another transmitter, without any loss of time.

From the point of view of the Einstein universe, the transmitted objects do not give up their *coporality*, but are "channeled through hyperspace" in an undefined manner in order to be "ejected" again in the Einstein universe at their destination.

One-polar transmitters transport an object from a transmitter station to a receiving station. Terrans had access to this kind of transmitter in 20th century AD, and by the 35th century AD were using them extensively for people and cargo over interstellar distances.

Two-polar transmitters only need one station : objects can be sent from this to the destination location or brought from a destination location. Neither the Terrans nor the Arconides are able to build two-polar transmitters.

Three-polar transmitters are able to send an object directly to any other site from anywhere within reach. They cannot be built by *any race in the Milky Way*. *From 1982 to 2113, the Terrans had two such transmitters, also called "fictive" transmitters, given to them by IT. From 1517 to 1522 NGE, they had access to a fictive transmitter built and operated by a Kelosker named Gholdordydyn.*

Stellar transmitters use multiple suns to perform the transportation, with more suns being able to transmit longer distances. All the suns must have an identical hyperradiation signature. An adjustment station is usually on a nearby planet to align the suns and control the process, including picking the destination stellar transmitter. The Terrans built a two-star transmitter in the solar system in the 35th century.

A situation transmitter uses a different process : the object is enveloped in a linear space bubble, and transported thru a linear space tunnel at a pre-selectable speed. Apparently, the destination does not require a receiving transmitter, thus making it a "two-polar" device. The energy requirements depend on the speed and distance travelled, but are always high enough to require a solar tap (see below) to power it. Terrans had access to this kind of transmitter by the 35th century AD, and improved its range to 2500 light years.

A cocoon transmitter, developed by the Akonians, creates a "cocoon" field, which when it collapses, provides the energy for transfer. It apparently requires a receiving station. Its range is 25 light years. The Terrans

had this technology by the 14th century NGE.

Computer technology

Positronic (20th century AD)

The technology used by positronic computers is unspecified, but large enough computers could be programmed with an artificial intelligence. However, smaller units were susceptible to bluffs, logically incomprehensible events, and events outside their programming.

Biohyperinpotronic (22nd century AD)

Hyperinpotronics function by sending faster-than-light hyperenergetic signals thru physical circuits. Biohyperinpotronics has a plasma component (see next entry).

Biopositronic (24th century AD)

Also called biotronic, this kind of computer interfaces positronics with biological living tissue ("plasma"). It can therefore come up with more creative solutions to problems. Note : Terrans were familiar with biopositronics since the 22nd century, but were not able to build the interface on their own until the 24th.

Syntronic (4th century NGE)

This powerful computer is located entirely in hyperspace. It functions by manipulating hyperenergetic structure fields. They ceased to function after the hyperspace impedance increase in the 14th century NGE.

Contra-computer (5th century NGE)

A contra-computer is a positronic or syntronic computer whose task is to always assume the opposite of a conventional computer and to assume improbable events. This enables it to make calculations that have a high hit rate, particularly in confusing and critical situations. To be able to interpret the *results* and *turn* them into advice, you need a specially trained cyberneticist.

Semitronic (16th century NGE)

Similar to syntronics, this computer works with the increased hyperimpedance, is located entirely in linear space, and presumably functions by manipulating hyperenergy as well. Due to its lack of security from psionic infiltration, it was not widely used.

Battle Suits

These are space suits with additional armor and shield generators. *They have other features like integrated targeting systems, friend-enemy recognition, etc.*

By the 25th century, they had cloaking and antigrav capabilities, with 100 hours of air. They also had a device that could react to the occupant's thoughts to raise shields, etc.

*By the 36th century, they had evolved into SERUNS (**S**emi-**R**efoundent(?)-and-**R**ecycling-**U**nit), with recycling able to provide water and air indefinitely. They have a Medosystem that can analyze and treat a variety of wounds and health problems, as well as camouflage and mimicry (appearing like anyone or any race) capability. They also have state-of-the-art defensive and offensive abilities for the period.*

Special Materials

There are many natural materials that have higher-dimensional energy components available in the universe. It is generally not possible to produce these materials synthetically.

Howalgonium (35th century AD)

This is the best-known hypercrystal in the Milky Way. It is an oscillating quartz with energetic five-dimensional structures *within it* with atomic weights between 208 and 513. *It is used in faster-than-light target acquisition in transform cannons (35th century AD), and automatic aiming of impulse guns (5th century NGE). A typical price was 150,000 solars per ounce. After the hyperimpedance increase in the 14th century NGE, it became worthless.*

Sextagonium (35th century AD)

This crystal radiates in the six-dimensional range of the hyperspectrum. The material must be produced synthetically from howalgonium; no natural sources are known. Terrans perfected its manufacture in the 35th century AD. It is required for the use of dimesexta drives.

PEW metal (35th century AD)

This metal is a 5-D emitter with a six-dimensional tactile resonance(?). It is able to hold disembodied consciousnesses indefinitely.

CV-Embinium (14th century NGE)

This metal absorbs hyperenergy and releases it into hyperspace. It is therefore used as shielding to contain hyperenergy or block it.

Salkrit (14th century NGE)

Salkrit consists of psi-matter that manifests itself around solid clusters of gold atoms. However, this basic material, which serves as a normal space anchor, only makes up 0.23% of the mass of the material on average, *because only the gold atoms are detectable by conventional means.* The remaining components are a matter projection of psi-matter in crystallized form.

Khalumvatt (14th century NGE)

After the hyperimpedance increase, Khalumvatt replaced Howalgonium as the main source of 5-dimensional energy.

Miscellaneous

Masks (22nd century AD)

A material called bioplast can bond to skin, and then be shaped into any form desired, allowing one person to look exactly like another, or look like a different race. It can even cover the entire body, disguising robots as humans for example.

Matter converter (22nd century AD)

A machine that converts any raw material into a predefined material or object. *These are used, for example, to convert moon rock into copper for circuitry.*

Mental stabilization (25th century AD)

A surgical procedure on the brain that encapsulates and re-routes some neural connections. As a result, the mentally stabilized person is immune to practically all known means of interrogation and influence: psionic attacks such as telepathy, hypnosis, suggestion or psychic radiation remain just as ineffective as drugs, chemicals, stimulus impulses or other para-mechanical interrogations. Although para-impulses are clearly perceived, they are simply blocked. This process is done very rarely, and only to the highest members of government.

TARA robots (25th century AD)

The design of these powerful combat robots evolved over the centuries, and continued to be used to 2000 NGE and beyond. They can operate on land, underwater, in hostile environments, and in space. They can fly in air or in space, and some models have a faster-than-light drive built in. Their armor, shields, and offensive weapons make them powerful opponents.

Solar tapping (35th century AD and post-14th century NGE)

This is a means by which hyperenergy is directly drawn from a star. It is typically used to power long-range transmitters, the ATF (above), and screens that enclose an entire solar system. Note : the books confusingly refer to the device that does this as a “hypertron tapper”, not to be confused with the hypertap below.

Anti-gravity (36th century AD)

An antigrav is a device that can amplify, weaken, pick up or change the direction of gravity in a limited area.

Hypertap (5th century NGE)

This sends an energy tube into hyperspace and drains hyperenergy into the standard universe to power high-powered devices like ship engines or even the energy needs of an entire planet. It became unusable after the hyperimpedance increase in 1331 NGE.

Gravitaf (5th century NGE)

These devices store tremendous amounts of hyperenergy in the form of tensions of the space-time structure as standing waves. They became unusable after the hyperimpedance increase in 1331 NGE.

Mental impulse (5th century NGE)

The thought processes of living creatures give off a kind of radiation, which can be picked up by advanced machines, thus giving them commands by thinking at them. By the 5th century NGE, machines could differentiate between the thoughts of different people (allowing only one or a few people access to open doors or locks or access information).

SEMT hood (16th century NGE)

A device that allows two intelligent beings to exchange thoughts in a “technical telepathy”.

The following table shows what technologies were available when. Note that some new technologies, like drives and shields, replace the old technologies, while others add to what's available. [Technologies in blue became ineffective after the 14th century NGE \(but may not be the only ones\).](#)

20th century AD	Impact field, energy shield, deflector screen, disintegrator, Arkon bomb, transition drive, transmitter, positronic computers
21st century AD	Impulse weapons
22nd century AD	Anesthesia radiator, thermal emitter, transform cannon, gravity bomb, linear drive, bio/hyperinpotronic computers, matter converter, bioplast masks
24th century AD	Terkonite, biopositronic computers
25th century AD	HU screen, Paratron shield, interval gun, FpF, Hyperinmestron, dimetrans drive, mental stabilization, TARA robots
35th century AD	Ynkelonium-Terkonite, Antitemporal Tidal Field, Waringer drive, dimesexta drive , howlagonium , sextagonium , PEW metal, solar tapping, solar transmitters, situational transmitters
36th century AD	Shadow screen, paralyzer, KNK cannon, SERUNS, anti-gravity
4th century NGE	Syntronic computers
5th century NGE	MVH gun, hypertap , Metagrav drive, thought identifiers, contra-computers, gravitaf
12th century NGE	Paratron transformer
Hyperimpedance increase	
14th century NGE	Crystal screen, stealth coating, VITRA gun, Hawk II Linear drive, CV-Embinium, salkrit, khalumvatt, cocoon transmitter, solar tapping
15th century NGE	Shiva bomb; Hawk III
16th century NGE	Hypertrans progressive drive, Aagenfelt flash, SEMT hood; Hawk IV, Hawk V
21st century NGE	Linear space torpedo

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