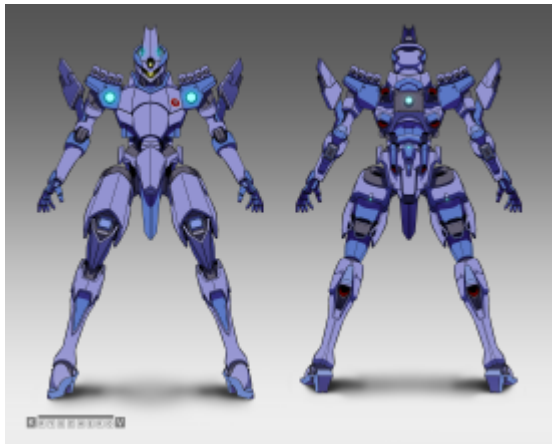


# M19 Ryoko Mecha

The M19 Ryoko (亮子, Yamataian for Helpful Child) is a mecha developed in a partnership with [Star Army Research Administration](#) (SARA), [Ketsurui Fleet Yards](#) (KFY), [Yugumo Corporation](#) (YC), and [Ryu Heavy Industries](#) (RHI). The Ryoko, with fire support missions in mind, is based heavily on a RHI Mecha design, Project 717. It began entering service in YE 43.

## About the M19



Built on the lessons of the early stages of the Kuvexian War, the M19 Ryoko is designed to give fire support/close air support for the Star Army Rikugun. It has a secondary mission profile of providing long-range support to the Star Army Uchuugun and can operate even from Plumeria Gunships.

After working with Ryu Heavy Industries and their Project 717 designers, Star Army Research Administration took the jointly owned finished design of the M19 Ryoko to KFY. Once in KFY hands, they removed the RHI's linear frame interface and replaced it with the [Type 32 Pilot Pod "Rakkasei" Block](#). The change in control systems not only allows more natural control of the Mecha, it also allows the M19 Ryoko to bend and twist its torso in a more natural manner compared to its sourced Project 717 Mecha. With an adapter, the [Type 33 Pilot Pod](#) can also be used as well.

## Appearance



2)

- M19 Prototype 06A on trial in the [Daichi System](#), YE 42

The M19 Ryoko is an [unguligrade-legged](#) and slender mecha. It is typically painted in the greys and blues of the Star Army of Yamatai. The head possesses a yellow lensed monoeye sensor and a high crested cowl that contains an additional fixed “eye” and directional sensors.

## Boarding the M19 Ryoko

Access to the Ryoko's cockpit block is located in the midsection of the torso. An overlapping armor plate flips up before a portion of the exterior armor protecting the block also opens to reveal the piloting pod. It is standard procedure for the pilot to use some kind of vacuum rated uniform such as the [Star Army Environmental Suit, Type 28 \(AMES\)](#) or [Star Army Aerospace Flight Suit, Type 32](#) in case of rupture of the pilot pod.

Typically the Ryoko is folded forward, allowing the pilot can simply climb up to the access. But if the unit is standing fully up, a cable ladder can be lowered and raised on command (non-Yamataians).

## Piloting the M19 Ryoko

Piloting the Ryoko is a different experience depending on one's skill level. Rookies will find themselves piloting it much like their own body, and comparable in some ways to using Mindy-series armors increased massively in scale. This is intentional, as the learning curve for the Ryoko (like earlier Thought Armor) is supposed to begin with something that most pilots are already familiar with. Pilots often start with the [immersion system's](#) Directed Vision setting to get used to detecting things outside their range of

vision without jumping straight to Sampled Vision – the Ryoko is not capable of pure Panoramic Vision, and must simulate it.

Things like handling Panoramic Audio and Sampled 360 Degree Video take practice and getting used to, but a Mindy veteran will be able to fight at least as effectively in a Ryoko as they could in their Mindy, with limiters available for in the various systems designed to prevent information overload in rookies.

## Price, Manufacturing, and Ownership Restrictions

All M19 Ryoko Mecha are the property of the Star Army of Yamatai and unauthorized possession or use of one is a serious crime that is punishable by law (and likely death). Ryoko units may also occasionally “phone home” to inform the Star Army of Yamatai of their whereabouts, which can expose its thieves to retaliation (leading to a Plumeria and/or SAINT operatives out of nowhere).

Those interested in a similar design must buy the Ryu Heavy Industries with none of the restricted technology of the Yamatai Star Empire.

## Statistics

- Government: [Yamatai Star Empire](#)
- Organization: [Star Army of Yamatai](#)
- Type: Fire Support Frame
- Class: Ke-M19-1A Ryoko
- Designer: [Ryu Heavy Industries/Star Army Research Administration](#)
- Manufacturer: [Yugumo Corporation/Ketsurui Fleet Yards](#)
  
- Crew: 1+1 infomorph
- Maximum Capacity: 1 (will be cramped with 2)
- Height without shoulder howitzer: 9 meters
- Height with shoulder howitzer at max elevation (tilt upward): 13 meters
- Height folded: 3.7 meters
- Width: 4 meters
- Mass: 17 metric tons

## Damage Capacity Stats

- Body: Tier 8
- Shields: Tier 8

## Mobility

- FTL: 10c
- STL Speed (Fusion): .325c

- Max Lower Atmospheric Speed: Mach 1.8
- Cruising Lower Atmospheric Speed: Mach 1.2
- Ground Speed (Hover): 200 km/h
- Ground Speed (Running): 70 km/h
- Underwater: 50 km/h (max of 150 meters)

## Systems

- Ke-M19-E4300 KIES
- Ke-M19-E4302 Psionic Signal and Anti-Magic Control Device
- Ke-M19-E4310 Electronic Warfare Suite
- Ke-M19-F4300 Durandium Alloy Chassis Layer
- Ke-M19-F4301 Armor Plating Assembly
- Ke-M19-G4300 Aether Generator, shielded
- Ke-M19-G4308 Shield System, Gravity Manipulating, Conformal
- Ke-M19-P4300 Combined Field System
- Ke-M19-P4356F Light Fusion Plasma Drives
- Ke-M19-P4303 Anti-Gravitic System

## Ryoko 1F Variant

There is a fleet variant (1F) that replaces the fusion components with the following systems:

- Ke-M19-P4301 Dual Stage Aether Drive
- Ke-M19-P4301 Combined Field System

[Xiulurium](#) is layered over the twin aether reactors of the drives to minimize detection chances. The 1F is specially designed for Uchuugun based Ryoko that do not primarily function on the ground (like their Rikugun counterparts).

1F models do not require the [Ke-M19-G4315 Aether Beam Cannon Generator](#) to fully use the [Ke-M19-W4300 Aether Beam Cannon](#)

## Cockpit Block

The cockpit block consists of a [Type 32 Pilot Pod "Rakkasei" Block](#) nestled inside an armored cavity of the Ryoko. While it does not quite function as the torso joint as similar pilot pods do in Compact Mecha, the pilot pod does allow the torso to twist more naturally compared to many other Mecha. The pilot pod also allows full telepathic control, houses the Ryoko's computer system, handles life support needs, and acts as an escape pod.


## Immersion System

The [Immersion System](#) is limited to the following vision modes:

- [Sampled Vision](#)
- [Direct Vision](#)
- [Legacy Vision](#)

## Frame, Armor, and Defensive Systems

With mass production being a key point for the M19 Ryoko, the skeletal chassis for the unit is made of [Durandium Alloy](#) to keep the cost down. Different variants are possible that make use of [Yama-Dura](#) composite to give the chassis minor regenerative properties. The joints are designed for easy removal and a Ryoko can shed (but not rig it to explode) damaged limbs if slowing it down.

Yama-Dura composite is used for the molded sections of armor that protect the chassis and internal components. The cockpit block has its own armor layer that is reinforced with a layer of [Yarvex](#) and then a gapped space with the exterior armor. This is done to give the pilot pod additional protection from  [spall](#).

For shielding, the M19 Ryoko makes use of conformal [electromagnetic](#) and [graviton](#) based shielding. The conformal barrier is similar to the same system used in the [Ke-M2-2D "Mindy II" Power Armor](#), the M2-G3600. The system also has the added benefit of not being remotely deadly to unprotected lifeforms as the CFS.

The Ke-M19-P4303 Anti-Gravitic System provides the Ryoko protection against scalar weaponry. Also while the Ryoko does have a CFS, it is primarily configured for FTL travel.

## Armaments and Tools

The M19 follows the same philosophy of Yamataian power armor. M19 uses hardpoints across its body to outfit the mecha to mission requirements. The Ryoko's power systems can only balance a total worth of 8 "Tier" weapons. More powerful weapons make use of more power, while weapons meant for power armor take up less power.

### Hardpoints

- Shoulders
- Forearm
- Hip
- Outer Calf
- Handheld (though not technically a hard point)

### [M19 Weapons and Accessories](#)

In addition to the hardpoints, the M19 Ryoko has a number of defensive systems. Two Ke-M19-E4398 countermeasure pods attached to the back of the thighs of the unit. Each makes use of 70 [Star Army](#)

[Mini-Missiles, Type 41](#) set only to the following warheads:

- [Anti Radar Missile Avoidance Warhead](#) x 30
- [Multi Function Missile Avoidance Warhead](#) x30
- [Subspace Detonator Warhead](#) x10

## Graviton Beam Projectors

Taking a cue from the [Kirie Thought Armor](#), the M19 Ryoko has a single [Ke-R3200 Scalable Graviton Beam Projector](#) located in the palm of each hand. They are designed to tightly secure items within their hands. But they also have a defensive function with experienced users being able to mess with the aim of an opponent within range (if not shielded against gravity) and preventing FTL travel.

A larger unit is located at the lower back of the unit that can be used to tow objects up to Tier 10 in size. But they can only pull Tier 8 in size (another Ryoko) and below in FTL.

## Nodal Bit Drones

Integrated into the “shoulder blades” of the Ryoko, dual expanded [Ke-M12-W3302 Nodal Support Drone Hangar](#) exist. Each carries 8 nodal bit drones (16 in total) the pilot can use for anti-personnel and anti-missile defense. They are largely only useful in space where the CFS can be fully utilized.

## Power Systems and Propulsion

In the standard “Space” armored backpack of the Ryoko, a Ke-M19-G4300 shielded ([Xiulurium](#)) aether generator resides that provides a large portion of the power requirements for the mecha. But this generator is turned off when absolute planetary stealth is required.

In the torso and in the legs of the Ryoko, 4 RHI-P4256F Light Fusion Plasma Drives (2 in the torso and 1 in each leg) provide power for non-CFS related systems in stealth mode. The 4 drives also provide the unit's forward thrust. Fuel tanks are located in the lower torso of the Ryoko, giving the Ryoko a week of performance so long as thrusters only at cruise mode most of the time. The “Planetary” backpack removes the upper thrusters in order to provide additional bracing and room for ammunition for the two railgun artillery systems.

The Ke-M19-P4303 Anti-Gravitic System also provides planetary propulsion for the Ryoko. It is responsible for providing the Ryoko hovering capability (without using the plasma drives) and helping to adjust orientation while in atmospheric flight.

While not considered a power system for the Ryoko, the Ke-M2-G2901 of the [Type 32 Pilot Pod](#) can be used as an emergency power source. FTL propulsion is provided by the Ke-M19-P4300 CFS.

## Self Destruct

Like the [M6-2A "Daisy II" Planetary Power Armor](#), the M19 Ryoko has two modes of self-destruction: micro-fusion and thermonuclear.

### Micro-Fusion

In order to protect the sensitive technologies within the Mecha, the capacitors within the Ryoko are used to fry the internals and then blow away to scatter the ashen remains of the Ryoko. Those within 4 meters of the unit will be subject to the maximum amount of damage (Tier 8).

### Thermo-nuclear

For those situations where everything must die and the pilot pod (hopefully) has been ejected, the Ryoko's secondary computer processes dump all remaining fuel into the Ryoko's Fusion Reactors until they are unable to contain the reactions occurring within them. It takes 3 minutes to achieve maximum yield, which gives the pilot pod (hopefully) time to escape. Everything within 500 meters is subject to a Tier 10 thermal and kinetic explosion, with damage rapidly deteriorating after that in atmospheres. A lesser and more immediate Tier 9 explosion can be done with the aether reactor.

## Sensors

Making use of the [Ke-M12-E4217 Kirie/Keiko Integrated Electronic System](#) (KIES), the M19 has a wide suite of advanced sensors optimized to fulfill its roles as Orbital Artillery/Close Air Support/Terrestrial Fire Support.

### Uni-directional

The fixed forward-facing uni-directional sensors are located either located in the head crest of the Ryoko or within a transmitting apparatus mounted on the torso of the Mecha. Most sensors are based on the speed of light, so are limited to the star system they are within.

System Name	Notes
Gravimetric	Detects gravitational fields and identify the location of objects creating them.
Magnetic Resonance and Distortion	Can analyze atomic and nuclear properties of matter from its interaction with radiation/magnetic fields.

### Omni-directional

The Omni-directional sensors are within the large winglets attached to the upper arms. The Aetheric,

Scalar, and Unified Field Mass sensors have a range of 2 light-years. The rest are limited to the star system they are within.

System Name	Notes
Aetheric/Quintessential Field/Differential/Particle/Wave	Cannot be used when pilot pod aether generator is offline
Scalar Field	
Unified Field Mass/Energy	
Time-Modulated Ultra-Wide Band Radar	Signals transmitted by UWB radars are pulses generated pseudo-randomly in time. They are only 0.5 nanoseconds in duration. The energy content in any conventional frequency band is below the noise, making TM-UWB transmission highly covert.

Primary Optics

RHI-M19-E4376 Monoeye serves as the primary means of gathering passive and active visual data for the pilot. While it is not as powerful as the "Monoeye" [Directional Sensor Suite](#), it is able to perceive radiation emissions with the help of other sensors onboard. The monoeye moves on a track that allows it to move 160 degrees across and has a depression (but not elevation) range of about 20 degrees in the center of the head.

The following sensors are located with the Monoeye:

System Name	Notes
Variable Wide-Band Imaging	High-resolution variable optical system capable of monitoring a very wide spectrum. Includes Night-Vision, Infrared, and Ultra-violet modes.
<a href="#">Visual Synthetic Aperture Radar (ViSAR)</a>	Extreme High Frequency (EHF) Radar that provides high-resolution video (not colored) in all weather conditions and cloud cover.

Crest Eye

Located in the crest above the main optics, the smaller RHI-M19-E4378 Visual Sensors is a supplemental unit to the RHI-M19-E4376 Monoeye. With its fixed position, it is primarily used to give additional depth perception and as a target tracking system.

Sensors located in the crest eye:

System Name	Notes
Spectrometer	Can identify types of objects, useful for discovering chemical composition.
Variable Wide-Band Imaging	High-resolution variable optical system capable of monitoring a very wide spectrum. Includes Night-Vision, Infrared, and Ultra-violet modes.

Seconday Optics

To facilitate 360 degrees of visual data, the Ryoko has the RHI-M19-E4377 Camera . The RHI-M19-E4377

consists of a subcomputer and a number of cameras placed within the armor of the Ryoko. The subcomputer then relays the streams of data to the main AI.

## Audio System

For the audio system, each side of the Ryoko's head has a single **Polyphonic** for 3D triangulation of sources of weapons fire.

In addition to these sensors, the KIES installed in the Ryoko has an additional Ke-M19-E4329 Cartography module. Using a combination of IFF transponders from friendly and enemy units, the Ryoko is capable of using data generated from its Attack Radar and LIDAR to generate a personal GPS. When networked with fellow Ryoko Mecha, a world-wide GPS can be generated to make fire support more accurate. This module also has a secondary role in generating geological survey data for the Star Army of Yamatai and the SSS if declassified.

Lastly, electronic warfare is facilitated by a Ke-M19-E4310 Electronic Warfare Suite located in the cylinder of each sensor wing.

==== Comm unications Systems ====

System Name	Notes
Radio	Full spectrum, Dual-Modulation, range theoretically unlimited except by interference. The practical range is short since the waves only travel at light-speed.
Laser	For close-range transmissions, it is more difficult for the enemy to intercept, because they have to be in the area of the beam. Also limited to light-speed.
Psionic Filter Device	The PFD is a form of psionic and telepathic protection, capable of nullifying all such activity. Field conforms Thought Armor.
External Audio	External microphone and a speaker to allow the pilot to communicate more easily with nearby persons.
Homing Device	Normally inactive, this beacon has an independent backup power supply that can keep it transmitting for up to ten years, even if the main power system is nonfunctional. If main power is available, the beacon will transmit constantly. If not, the beacon will put out a short distress message twice every two hours (five minutes between).
Subspace/Hyperspace	Allows faster-than-light transmission. A standard means of communication.
Tachyon (select units only)	Quantum tunneling used for faster-than-light transmissions. A tachyon is a photon without any mass. Tachyon transmissions, because they travel faster than light in normal space, appear to travel towards the transmitter from an observer's view.
Transuniversal Quantum Relay (Select units only)	Delivers a message anywhere, instantly, but precise coordinates of the receiver must be available. Mainly used by PANTHEON computers for relaying information through starships. Shields may interfere with TQR transmissions.

## Life Support

The [Type 32 Pilot Pod "Rakkasei" Block](#) handles all life support needs for the Ryoko's pilot.

## OOC Notes

[Demibear](#) created this article on 2020/12/26 04:41.

- This was approved by [Andrew](#) on 1/21/20 in this [thread](#).

Star Army Logistics	
Supply Classification	Class C - VEHICLES AND POWER ARMOR
Products & Items Database	
Product Categories	mecha
Product Name	M19 Ryoko Mecha
Nomenclature	Ke-M19-1A
Manufacturer	<a href="#">Ryu Heavy Industries</a> , <a href="#">Ketsurui Fleet Yards</a>
Year Released	<a href="#">YE 43</a>
Price (KS)	50,000.00 KS
Mass (kg)	17,000 kg

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