Tekkit 2

Guides and tutorials for Tekkit 2!

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Introduction | Tekkit 2

Tekkit 2

tekkit.siriusmc.net

Version · 1.2.6

> Tekkit 2 is a casual kitchen sink modpack on Minecraft 1.12.2, available on the Technic Launcher. It draws inspiration from Tekkit Classic and Tekkit Legends, with IndustrialCraft Classic, ProjectE, BuildCraft, Logistics Pipes, and ProjectRed at the core of its progression. Unlike Tekkit Legends, several features have been adjusted, including nerfs to ProjectE to create a more complex and rewarding gameplay experience. Galacticraft is also included, adding space exploration as an entirely new avenue of progression.

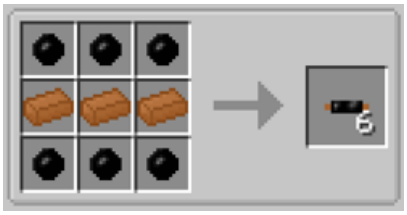
Getting Started

Tekkit 2 is a kitchen sink pack, covering technology, magic, farming, exploration and more. You have no quest book, so progression is largely up to you. One of the most effective early goals is to get into ProjectE and craft a Transmutation Table, then build an EMC farm to begin producing a wide variety of items automatically.

Due to ProjectE nerfs, far fewer items have EMC values than in Tekkit Legends, meaning more automated crafting is required. For autocrafting, ProjectRed Pipes and Logistics Pipes are both strong choices, and which to use comes down to personal preference. Connecting an autocrafting setup to your EMC farm allows you to produce items that don't have EMC values themselves by crafting them from items that do, giving you an effectively unlimited supply.

Your First Resources

Like most Minecraft mod packs the first thing you need to do is gather supplies. In Tekkit 2, this is similar to vanilla Minecraft, gathering resources such as wood, cobblestone, coal, copper and iron ore.



Once you have the vanilla basics down you can then start to gather materials for the mod IndustrialCraft2 (IC2). Whilst you're exploring and gathering resources, you may have noticed darker trees with small orange areas on them, these are rubber trees and are crucial for advancing. To get rubber you'll need a treetap, crafted with 5x wooden planks, which you can right-click on orange parts of rubber trees to yield sticky resin. This resin can be smelted in a furnace to obtain rubber. With this rubber you can make copper cables, using 6x rubber and 3x copper ingots.

Doubling Your Resources

Now that you have some fundamental resources, you can begin doubling your resources. There are two ways to do this, either without, or with power.

Doubling Without Power

The first type of macerator is the **Stone Macerator**, which is powered like a furnace, needing a fuel source to macerate the ore.

Doubling With Power

A regular **Macerator** needs power to operate. To obtain power you will need to craft a **Generator**, this can be done with 1x RE-Battery, 3x Refined Iron Ingots, and 1x Iron Furnace. Generators produce Energy Units (EU) when they are given a fuel source, such as coal or wooden logs.

With the copper cables previously created, you can attach the generator and macerator together, allowing the macerator to become powered and start working.

Transmutation

Transmutation is the art of transforming low value items into more high value items. In early game this is done via the **Philosopher's Stone**, crafted using 4x Glowstone, 4x Redstone, and 1x Diamond. Not only can the Philosopher's Stone be used in crafting recipes, but it can be used as a tool to transmute blocks in the world into their counterparts, for example dirt can be turned into sand, stone into cobblestone and vice versa, wooden logs into different types of wood, as well as leaves into different types of leaves, and a whole lot more. You can change the range of the Philosopher's Stone using the "V" key, to change the radius to either 3x3, 5x5, 7x7 or 9x9, or you can press "Shift + V" to reduce the size. Additionally, you can also press "G" to change the shape to either panel mode, cube mode, or line mode.

Later Game

Later in the game, Tekkit 2 opens up into a wide range of mods offering very different play styles. The three main areas of late-game content are ComputerCraft, Galacticraft, and Forestry.

We also offer a guide on Pipe Optimisation.

ComputerCraft

ComputerCraft Screenshot

ComputerCraft allows players to build automated systems using the Lua programming language. Computers and turtles can be programmed to interact with the world, move items, mine blocks, control redstone, and much more. A manual for Lua 5.4 covering basic syntax and modules can be found here. ComputerCraft also adds its own modules for interacting directly with in-game mechanics such as inventory management and peripheral devices.

Galacticraft

Galacticraft Screenshot

Galacticraft adds space exploration to the game, including several new dimensions: the Moon, Mars, Venus, the Asteroid Belt, and player-built Space Stations. To reach these destinations, you'll need to construct and launch a rocket. Rockets come in three tiers, with higher tiers required to reach more distant planets. Each dimension offers unique resources, challenges, and structures to explore.

Forestry

Forestry Screenshot

Forestry is centred around the breeding and genetic manipulation of three core organism types: bees, trees, and butterflies. Each naturally occurring species carries a set of genes, and breeding different species together produces new hybrids with unique traits and outputs. Mastering bee breeding in particular is a deep and rewarding progression path that can produce a wide range of materials.

Binnie's Mods, included as an addon for Forestry, adds flowers as a fourth organism type, introduces new species across all categories, provides tools for direct genetic modification, and adds a brewing system producing both alcoholic and non-alcoholic beverages.

Server Rules

Tekkit 2 has a number of server-specific rules in addition to the general server rules. These exist primarily due to the presence of ProjectE, which can make the economy difficult to balance without additional restrictions.

Rule	Details
No gifting of items	Giving items to other players for free is not permitted.

Minimum prices	Items must not be sold below the minimum price set by the server. Use **/price** in-game to check the minimum price of any held item.

To install Tekkit 2 and learn more about banned items, scheduled restarts, and dimension resets, visit the Tekkit 2 Server Card.

> It is recommended to allocate between 3GB and 5GB of RAM for Tekkit 2.

> SiriusMC bans certain items to protect server performance, the in-game economy, and claimed player bases. Use **/banneditems** in-game to see the full list of banned items on the server, or expand the Banned Items list below.

Banned Items ?

- IC2 explosives
- Item-based chunk loaders
- RainMaker
- Nuke
- Nova Cataclysm
- Nova Catalyst (placement only)
- Dynamite

Ready to Play?

Open Minecraft, select Multiplayer, and add a new server with the address below.

`tekkit.siriusmc.net`

Installation guide Server rules Join Discord

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Optimising Pipe Usage

Learn how to optimise your ProjectRed pipes.

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An introduction into IC2 power generation and power transfer.

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Optimising Pipe Usage | Tekkit 2

> Tekkit 2 offers many different pipes and solutions to route items. This page covers the most commonly used pipes and some information on how to use them effectively.

ProjectRed Transportation

Transportation is a module of ProjectRed that adds pipes and chips to the game, enabling automated item routing between inventories and machines.

> Item Transport pipes can only pass items along to another connected pipe. They will **NOT** connect to inventories. At any junction with more than one possible direction, items will travel in a randomly selected direction.

Pipe Connections

All ProjectRed pipes will connect to each other. This means it is important to be deliberate about how your pipes are laid out, as unintended connections can cause items to loop endlessly through your network rather than reaching their destination.

Connections between pipes can be blocked using multipart blocks such as covers, which sit on the face of a pipe and prevent it from connecting to adjacent pipes. This is the most effective way to prevent looping in a ProjectRed pipe network.

Without covers (negative):

Bad pipe setup example

With covers (positive):

Good pipe setup example

The images below show how all ProjectRed pipes connect to one another by default, and how covers placed on pipe faces break those connections to prevent unwanted routing paths.

ProjectRed pipes connecting

Pipe connection obscured by multipart blocks

Logistic Pipes

Logistic Pipes is a powerful item transport and routing system with significantly more control than ProjectRed pipes. It can handle both items and fluids, and supports autocrafting, machine automation, stock keeping, and remote item ordering from storage.

While Logistic Pipes has a steeper learning curve than ProjectRed pipes, the advantages are considerable. They are better for server performance, offer faster and more responsive item routing, and give you precise control over how items move through your system. For a full breakdown of every pipe type, module, chassis, and block, visit the Logistics Pipes wiki.

Autocrafting and Requester Setup

Logistics autocraft-requester setup

One of the most powerful features of Logistic Pipes is the ability to automate crafting through a request-based system. A requester pipe can be configured to request specific items, which are then crafted on demand by connected autocrafting setups. This allows for highly efficient factories where items are only produced when needed, rather than constantly running.

Supplier and Provider Modules

EMC generator setup with logistics pipes

Supplier and provider modules allow items to be moved around in a request-based manner, meaning items are only sent when a request is received rather than being pushed constantly. This gives you precise control over item flow and prevents networks from becoming overwhelmed. The image above shows a simple EMC generator setup using supplier and provider modules to move items around efficiently.

Default Route and Void Chest

Default route to void chest

It is strongly recommended to always set a **default route** pointing to a **void chest** in any Logistic Pipes network. Without a default route, items that cannot reach their intended destination will spill out into the world, which can cause lag and clutter. A void chest set as the default route acts as a safety net, silently deleting any items that have nowhere else to go.

Logistic Pipes offer a huge amount of flexibility for automating and routing items throughout your factory. Take the time to learn their systems and you will find them one of the most valuable tools in Tekkit 2.

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Industrial Craft - Power Production | Tekkit 2

> IndustrialCraft 2 (IC2) uses its own energy system called EU (Energy Units). Understanding how EU tiers, generators, storage, and cables interact is essential for building a reliable power network. This guide does not go over generators that produce steam instead of EU.

Understanding EU and Voltage Tiers

IC2 power is measured in EU per tick (EU/t). Every machine and storage block belongs to a voltage tier, which defines the maximum size of EU packet it can safely receive.

The tiers are as follows:
Tier 1: Low Voltage (LV) | Max EU: 32
Tier 2: Medium Voltage (MV) | Max EU: 128
Tier 3: High Voltage (HV) | Max EU: 512

Generators

EU is produced by generators. The right generator for your current stage determines how fast your machines run and how quickly you can expand. Below is a summary of all main generator types available in Tekkit 2 on SiriusMC, organised by progression stage.

Early Game

Basic Generator

Output: 10 EU/t | **Tier:** LV

The starting point for any IC2 setup. Burns coal, charcoal, wood, and most other furnace fuels. Charcoal is the most practical early fuel, yielding 4,000 EU per piece. The Generator outputs 10 EU/t as a single packet, which is well within the LV limit, so it is safe to connect directly to Copper Cable and basic machines.

Slag Generator

Output: 12.5 EU/t | **Tier:** LV

The Slag Generator is an upgrade to the basic Generator that produces 25% more power. Additionally, the Slag Generator collects scrap randomly every 4-12 seconds, however if the generator is fuelled using the scrap it will not produce any scrap as a byproduct.

Wind Mill

Output: Variable (up to 32 EU/t in peak conditions) | **Tier:** LV

Wind mills produce EU based on altitude, weather, and surrounding open space. They require a clear 5-block radius in all horizontal directions and perform best at Y=126 or above. Output increases with weather, for an optimised wind mill that produces 32 EU/t you would need stormy weather at an altitude of 126. They are a niche early option for players who have built up high, but are generally superseded by Geothermals, due to the wind mill's sporadic nature.

Mid-Game

Geothermal Generator

Output: 20 EU/t | **Tier:** LV

Burns lava, producing 10,000 EU per bucket at a rate of 20 EU/t. This makes it twice as efficient per tick as a basic Generator and a reliable mid-game workhorse. Pair with a pump pulling from a Nether lava lake and pipe the lava in via BuildCraft fluid pipes for a fully automated, high-yield supply. A bank of Geothermal Generators feeding into a Multi-Functional Energy storage (MFE) covers most mid-game machine needs comfortably.

Thermal Generator

Output: 25 EU/t | **Tier:** LV

The Thermal Generator is the upgraded version of the Geothermal Generator. It produces 25 EU/t instead of 20 EU/t, and also gives off a small amount of passive energy from the environment throughout the day-night cycle. Using lava as a fuel source, the Thermal Generator can produce 31,250 EU per bucket at a rate of 25 EU/t.

Water Mill

Output: 4 EU/t | **Tier:** LV
Output: 32 EU/t | **Tier:** MV
Output: 250 EU/t | **Tier:** HV

When submerged in water and connected via cables to a machine or Batbox, it will produce EU continuously with no fuel cost. For maximum passive output, ensure all sides within the search area of the water mill are fully flooded. The search area differs depending on the tier of water mill: for LV water mills the search area is 3x3x3, for MV and HV water mills the search area is 5x5x5.

Alternatively, water buckets or water cells can be piped in directly for higher active output, at the cost of consuming the water as fuel. Higher tiers produce significantly more power and have a larger water search area, but are considerably more expensive to craft and run.

Solar Panel

Output: 8 EU/t | **Tier:** LV
Output: 64 EU/t | **Tier:** MV
Output: 512 EU/t | **Tier:** HV

Produces power during daylight with no fuel cost. Individual Solar Panels are only useful for charging tools or supplementing small setups. They are most valuable when combined into Solar Arrays. Note that Solar Panels require a clear, unobstructed view of the sky and produce nothing at night or during rain.

Solar Turbine

Output: 10 EU/t | **Tier:** LV

The Solar Turbine is a cheaper upgrade from the Solar Panel. It combines heat from the sun and water into steam, which is converted into energy. The Solar Turbine slowly heats up and cools down throughout the day-night cycle, increasing by 1% every 6 seconds during the day, and decreasing by 0.5% every 6 seconds at night.

Late Game

Nuclear Reactor

Output: 0 - 2048 EU/t (configuration dependent) | **Tier:** LV - HV

The most powerful EU source in IC2, and the most dangerous. A nuclear reactor's output depends entirely on how it is configured with Uranium Cells, Coolant Cells, and Heat Exchangers. An improperly configured reactor will overheat and explode. Before building a large scale nuclear reactor, you can check the design using a Reactor Planner. This will show statistics from a live simulation, such as EU/t produced, core heat, melting heat, heat effect chance, and much more. You can change what statistics you are looking at using the different tabs along the left side of the planner.

For most players, a well-tuned smaller scale reactor combined with an MFSU provides enough EU to run any late-game setup.

Situational and Environmental

Wave Generator

Output: 0 - 144 EU/t | **Tier:** LV - HV

The Wave Generator is a long-range single direction water generator that checks up to 50 blocks in one direction for water. The more water it detects, the more EU/t it produces, up to a maximum of 144 EU/t. Power production only begins once there are at least 4 solid water blocks in front of the generator. Output is sporadic and will vary between 0 and 144 EU/t.

Ocean Generator

Output: 0 - 100 EU/t | **Tier:** LV - HV

The Ocean Generator scans a much larger area of water than the Wave Generator (31x31x31) and produces more EU/t the more water it detects, up to a maximum of 100 EU/t. Power production requires at least a 31x31x31 body of water to the sides and above the generator. Output will vary depending on how obstructed the water within the search area is.

EU Storage

Energy storage blocks act as batteries and buffers between generators and machines. They accept power from multiple sources simultaneously and re-emit it at a fixed output voltage. The output voltage of an energy storage block is fixed at its tier regardless of how it was charged, so connecting LV Tier machines directly to an MFE or MFSU output will destroy them.

Block	Capacity	Max Input / Output
BatBox	40,000 EU	32 EU/packet
MFE	600,000 EU	128 EU/packet
MFSU	10,000,000 EU	512 EU/packet

Energy storage blocks output from the face marked with a dot, which faces the player when placed. All other faces are inputs. Use a Wrench to reorient the output face.

Energy storage blocks also reset cable loss calculations, making them useful as mid-line repeaters when running power over long distances.

Cables and Energy Loss

All IC2 cables lose EU over distance. Loss is calculated per EU packet, not per EU/t total. This means higher voltage is always more efficient over long distances: one 128 EU packet on Gold Cable loses less than four 32 EU packets covering the same run on Copper Cable.

In the table below the Mean Packet Loss is calculated through the loss of one EV packet (2048 EU) that travelled through the cable split into as many packets as needed.

For example: if a cable has a max packet of 32 EU, it will need to move 64 packets to meet the 2048 EU threshold, and each one of those 64 packets will result in small amounts of EU loss, which adds up significantly over time, unlike cables that have a max packet of 512 EU, where only 4 packets are moved to get to the 2048 EU threshold, resulting in less loss.

Cable	Max Packet (EU)	Mean Packet Loss (EU)
Ultra-Low-Current Cable	5	10.24
Copper Cable / Uninsulated Copper Cable	32 / 32	12.80 / 19.20
Gold Cable / Insulated Gold Cable / 2xIns. Gold Cable	128 / 128 / 128	8.00 / 7.20 / 6.40

Bronze Cable / Insulated Bronze Cable / 2xIns. Bronze Cable	128 / 128 / 128	11.20 / 10.40 / 9.60
Glass Fibre Cable	512	0.1

Glass Fibre Cable is the most efficient cable available and loses only 1 EU per 40 blocks per packet, making it the best choice for any run longer than a few blocks. It is expensive, requiring diamonds, but it is the correct long-term solution for a serious power network. Use Copper Cable for the final short hops from a transformer or storage block to nearby machines for efficiency!

Transformers

Transformers step voltage up or down between tiers. They are essential any time you want to distribute power from a high-tier storage block to low-tier machines without destroying them. There are three types: LV Transformer (steps between LV and MV), MV Transformer (steps between MV and HV), and HV Transformer (steps between HV and EV).

By default, a transformer steps voltage down from its higher-tier input face to a lower-tier output. Applying a Redstone signal reverses this, stepping voltage up. The faces are marked: the single dot face is the high-voltage side, and the three-dot face is the low-voltage side.

A practical example: an MFSU outputs 512 EU/t (HV). Running this into an MV Transformer steps it down to 128 EU/t. Running that into an LV Transformer steps it further down to 32 EU/t, which is safe for Copper Cable and LV tier machines.

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ProjectE - EMC Guide

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ProjectE - EMC Guide | Tekkit 2

> ProjectE is a mod that allows players to convert several items into energy, and use that energy to create different items. This guide covers how EMC works, how to generate it, and how to scale your setup from early game to late game.

What is EMC?

EMC stands for Energy-Matter Covalence and is the core system of ProjectE, representing the value of several items in game. Almost every item has an EMC value, and items can be freely converted into EMC and then back into other items of less than or equivalent value.

Common items like cobblestone have a low EMC value of 1, while rare items like diamonds have a high EMC value of 8,192. This means you could theoretically convert 8,192 pieces of cobblestone into a single diamond, or break a diamond back down into 8,192 cobblestone worth of EMC.

Items that are crafted have an EMC value equal to the sum of their ingredients, meaning nothing is ever wasted. Any item with an EMC value can be broken down, and its value redirected into something more useful.

Core Items

Transmutation Table

The Transmutation Table is your primary interface with EMC. It acts as a battery for stored EMC, a library of item recipes you have learned, and a fabricator that lets you spend EMC to produce any item you have previously learned. Before the table can create an item, it must first learn it. This is done by placing an item with an EMC value into the flames slot in the GUI, which destroys the item, records its recipe, and adds its EMC value to the table's storage.

Learned items and EMC balance are tied to your player character, not the physical table. When you learn an item at one table, it is learned across all Transmutation Tables you use.

Klein Stars

Klein Stars are portable EMC storage items used to carry EMC with you outside the Transmutation Table. They come in multiple tiers, with each tier holding four times as much EMC as the previous one. They can be charged inside the Transmutation Table and then carried in your inventory, allowing you to spend EMC anywhere.

Philosopher's Stone

The Philosopher's Stone is one of the first crafting goals in ProjectE and is required to craft most other ProjectE items. It also has in-hand functionality, allowing you to transmute blocks in the world directly, such as turning cobblestone into stone, and dirt into sand.

Generating EMC

Early Game | Burning Items and Energy Collectors

The simplest way to generate EMC is to burn items directly in the Transmutation Table by placing them in the flames slot. Everything you mine, loot, or farm has an EMC value. Coal, cobblestone, mob drops, excess tools, and any other items you no longer need can all be fed into the table to build up your balance. This method is slow but costs nothing to set up and is how most players get started.

It is worth learning high-value items before burning them. Once you burn an item and learn it, you can reproduce it from EMC later, so burn duplicates rather than your only copy of something.

Energy Collectors are passive EMC generators that produce EMC from light. They are the foundation of any serious EMC farm and come in three tiers, each producing significantly more EMC per second than the last.

Tier	EMC per Second (max light)	Internal Buffer
Energy Collector MK1	4 EMC/s	10,000 EMC
Energy Collector MK2	16 EMC/s	50,000 EMC
Energy Collector MK3	40 EMC/s	100,000 EMC

Output scales directly with light level, from 1/16 efficiency in near-darkness up to full efficiency at light level 15. To ensure full output at all times including underground or at night, place a Glowstone block directly above the collector, this provides a constant light level of 15 and requires no power.

Mid-Game | Energy Condensers and Anti-matter Relays

The Energy Condenser looks like a chest but converts any items placed or piped into it into EMC, then uses that stored EMC to produce a single target item of your choice. Set the target by placing the desired item in the top-left slot of the condenser's GUI. This makes it extremely useful for converting low-value bulk output, such as dirt and gravel from a quarry, into something more valuable automatically.

Anti-matter Relays connect Energy Collectors to an Energy Condenser across a distance. If a Collector is placed adjacent to a Relay, and that Relay is connected to a Condenser, EMC will flow

from the Collector through the Relay to the Condenser without the Collector and Condenser needing to touch. Relays also come in three tiers, with higher tiers able to transfer and bonus more EMC.

Late Game | The Power Flower

A Power Flower is the standard large-scale passive EMC farm. It consists of multiple Energy Collectors arranged around Anti-matter Relays, all feeding into a central Energy Condenser. The structure gets its name from the flower-like shape it forms when viewed from above.

A full-sized, maximally efficient Power Flower uses 17 Energy Collector MK3s, 5 Anti-matter Relay MK3s, and 1 Energy Condenser. You do not need to build the full structure immediately. Start with a single Collector adjacent to a Condenser, set a target item such as Alchemical Coal, and let it run. Expand by adding more Collectors and Relays as you accumulate enough EMC to afford the upgrades. Three full Power Flowers running simultaneously provides enough passive EMC generation to support most late-game crafting needs.

> Energy Condensers will only show that they are taking in EMC once an item has been placed in the top left of their GUI.

Late Game Progression

Dark Matter

Dark Matter in ProjectE consists of Aeternalis Fuel, which is created through the use of the Philosopher's Stone in the following chain:

Coal → Alchemical Coal → Mobius Fuel → Aeternalis Fuel

Creating Dark Matter is required for MK2 upgrades to Collectors and Relays. It has an EMC value of 139,264, which is equivalent to 17 diamonds worth of EMC.

Red Matter

Red Matter in ProjectE consists of Aeternalis Fuel and Dark Matter. Creating Red Matter is required for MK3 upgrades to Collectors and Relays. It has an EMC value of 466,944, equivalent to roughly 57 diamonds worth of EMC.

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