

CREATOR'S BOOKLET



 CircuitMess

Meet Synthia

Synthia combines the functions of a sampler, drum machine, sequencer, & synthesizer, and teaches about digital sound production.



How does it work?



Follow the instructions and assemble your Synthia



Play with the pre-loaded samples and make your own beats



Learn about microchips that produce digital sound



Hook it to a computer and code your Synthia

What is CircuitMess?

CircuitMess started in 2016 when Albert (our CEO) was 17.

Albert loved tinkering with electronics, and one of his first projects was a DIY game console.

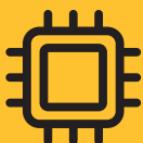
People liked the idea, so he launched it on **Kickstarter**, which raised \$100,745!

After that, CircuitMess was born. We are a small and fast-growing team of tech lovers who wish to share our love of creating new technology with the rest of the world!

Albert



The mission



Everybody knows how important technology is, but less than 1% of the population knows **HOW TO MAKE** new technology.



We're here to change that! With our kits, we want to inspire people to be **CREATORS** instead of just consumers.

You'll learn about hardware



Learn how to assemble
your very own
synthesizer



Learn about MEMS
microphones and
sound recording



Learn about music
sequencers and digital
sound sample editing

You'll learn about software



Learn about
Digital-to-Analog
signal conversion



Learn about programming and
how to code custom light shows
for the built-in LED grid

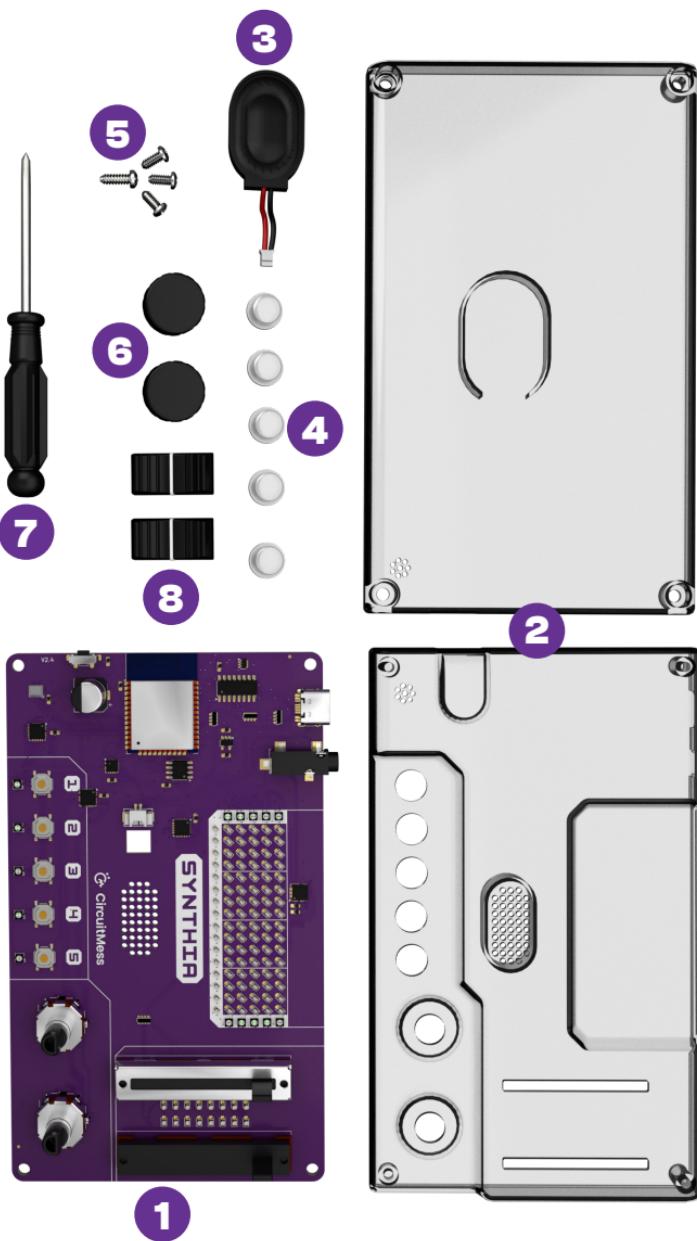


Learn how to edit
sound recordings



What's inside the box?

- 1  Main circuit board
- 2  Plastic casings
- 3  Speaker
- 4  Button caps
- 5  3x M6 screws, 1x M8 screw
- 6  Plastic knobs
- 7  Screwdriver
- 8  Plastic caps for sliders



Sampler vs Synthesizer — what's the difference?

A sampler is an electronic musical instrument which uses sound recordings (or "samples") of real instrument sounds (e.g., a piano, drums or trumpet) to create music.



this is what samplers
usually look like

Who uses it?

Everyone! Samplers are usually used for creating electronic, pop, and hip-hop music.

Synthia comes pre-loaded with the following samples:



KICK



SNARE



CLAP



**CLOSED
HI-HAT**



**OPEN
HI-HAT**

A synthesizer is an electronic musical instrument that generates audio signals. Synthesizers typically create sound by generating waveforms.



this is what
synthesizers look like

What is a waveform?

A waveform is merely a graph displaying the shape and form of a sound signal.

Synthia synthesizes sound by applying different sound wave modifiers (we call them effects) to pre-loaded sound samples.

These are the four most popular sound waveform types



SINE



SQUARE



SAWTOOTH



TRIANGLE

Synthia comes preloaded with these sound effects:



HIGH-PASS

Cut out the low frequencies & make your samples sound tinny



REVERB

Use it to create echo and generate depth in your samples



LOW-PASS

Cut out the high frequencies & make your samples sound muffled



ROBOTIFY

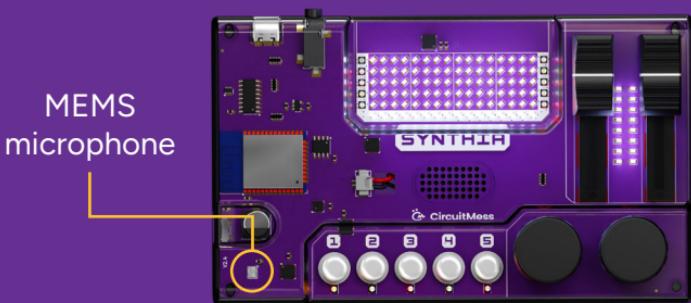
Makes your sound samples crunchy and "robotic"



Synthia can record sound samples

You can record your own samples into Synthia with the help of a built-in MEMS microphone.

Wanna make a beat using the sounds of your burps? Let's do it!



MEMS
stands for

Micro
Electronic
Mechanical
System

MEMS is a technology used to create small integrated devices that combine **mechanical** and **electrical** components.

This particular technology allows the microphone to be small in size, durable, and easily mounted on an electronic device.

How do ones and zeros turn into sound?

When you push the buttons on Synthia, it synthesizes the sound and sends it in binary format to a tiny microchip called DAC.

DAC (Digital-to-analog converter) converts the binary signal into an audio waveform which then travels to the Synthia's speaker.

Digital signal

0100111010



synthesizer

Conversion



digital-to-analog converter

DAC



Analog signal

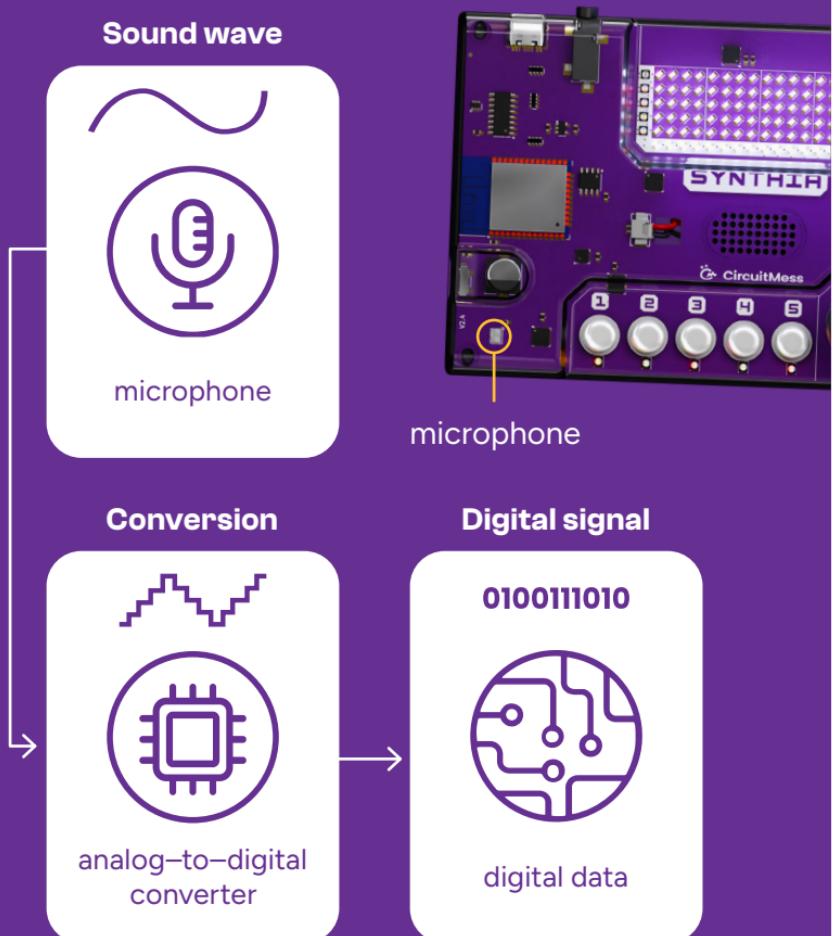


speaker

How do sounds get recorded?

When you speak into the microphone on Synthia, the sound waves travel inside as vibrations of air. The microphone converts those vibrations into an **analog electrical signal**.

A tiny microchip called **ADC (analog-to-digital converter)** then takes this analog signal and transforms it into a stream of ones and zeros. This digital information can then be stored, processed, or played back later.



Safety first

Before you start with the assembly, pay attention to the following safety measures:



1 Handling a screwdriver is not recommended for children under the age of 7!



2 Keep Synthia away from young children! This product contains small components that are dangerous to children under the age of 3.



3 If you are a minor, assemble Synthia strictly with the help of an adult.

Synthia is not a toy for toddlers.

Closely follow all the instructions you received in this kit and those found on our online pages so that no one gets hurt.

If you have never used a screwdriver, carefully follow the assembly instructions on our website and, if necessary, ask someone more experienced or older than you to help you.

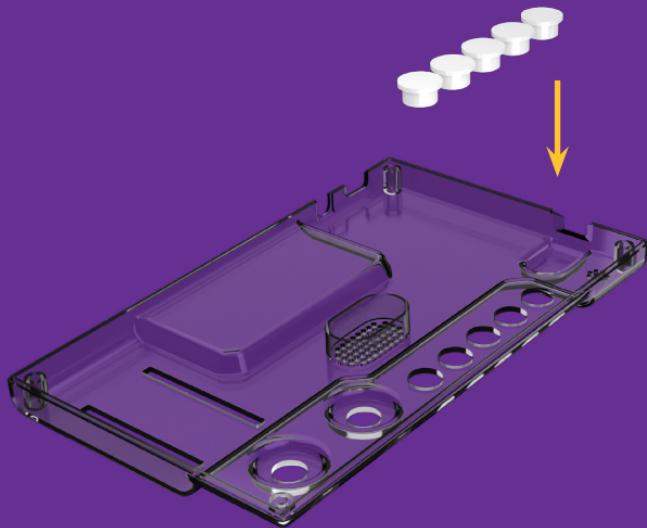
If you are having problems with our kit, contact our customer support via email at contact@circuitmess.com.



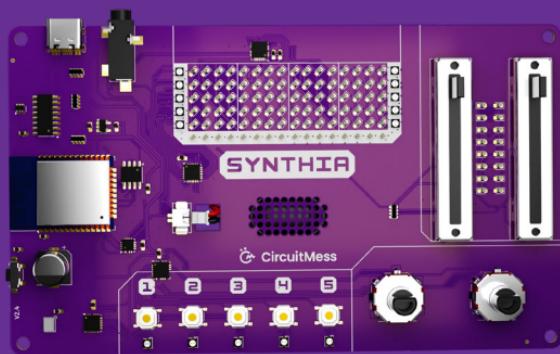


Build guide

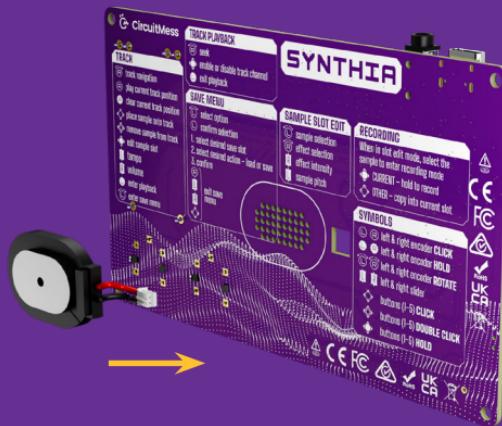
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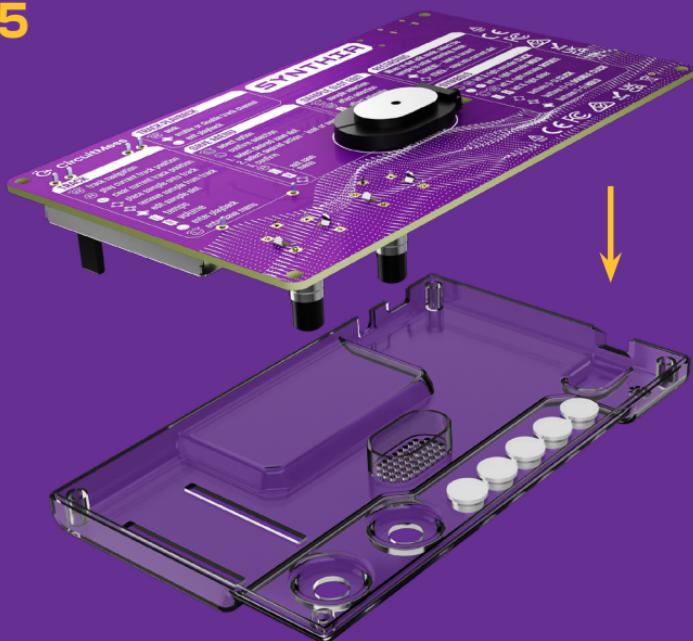
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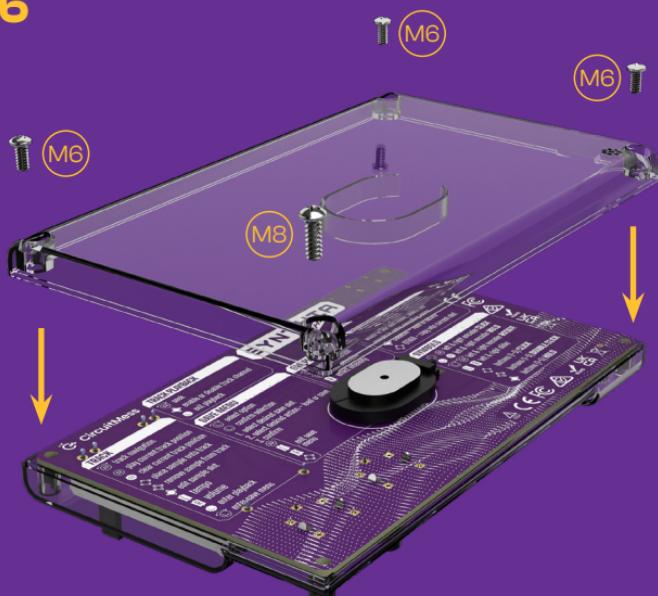
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5



6



7



8



9



Questions and answers

1. What kind of music can I create with Synthia?

Synthia is versatile, allowing you to produce various music genres. Whether you're into electronic, hip-hop, ambient, or experimental sounds, Synthia provides the tools to explore and create diverse musical styles.

2. Can I collaborate with others using Synthia?

Absolutely! You can share your samples and sequences with friends or collaborate on tracks by connecting multiple Synthias. It's a great way to engage in collective music-making and share creative ideas.

3. How can I restore Synthia's firmware?

Navigate to code.circuitmess.com, click "Restore firmware," and plug in your Synthia while it's turned ON. Make sure to select the appropriate COM port for a smooth update.

**Scan the QR code to learn
how to use your device**





**Thank you for purchasing
CircuitMess Synthia
Educational kit**

For more information and detailed instructions on assembling and using your device, visit our official website: circuitmess.com/resources/guides.

**Important safety information
for CircuitMess Synthia**

Read all safety information before using the device.

WARNING: Failure to follow these safety instructions could result in fire, electric shock, injury, and damage to your device or other objects. Read all safety information before assembling and using this device.

This product is a do-it-yourself device, and for it to work properly, you must assemble it according to the instructions you'll find on our website.

If you are a minor, assemble it only under an adult's supervision to avoid potential risks.

Improper handling can result in burns, injuries, and property damage, so handle the screwdriver or any other supplied tools and electronic components that are an integral part of this do-it-yourself kit very carefully.

Handling a screwdriver is not recommended for children under the age of 7. For children under the age of 18, it is recommended only under the supervision of a more experienced adult.

CircuitMess Synthia kit contains sensitive electronic components. CircuitMess Synthia or its components may be damaged if dropped, burned, punctured, crushed, or in contact with liquid.

Use only authorized accessories compatible with your device and/or the supplied tools.

The device's operating temperature ranges from 0 °C ~ 40 °C. Using this device in conditions outside this temperature range may damage the device.

Please turn off CircuitMess Synthia after using it and store it in a safe and dry location.

The included battery must be recycled appropriately and/or disposed of separately from household waste. Improper handling of batteries can cause a fire or explosion. Dispose of or recycle your device, battery, and accessories according to local regulations.

**• The included battery
is rechargeable.**

- Do not short-circuit the battery
- Improper use of the battery can cause overheating, burns, or other injuries.
- Do not leave the battery directly exposed to intense sunlight.
- Do not use the device or the battery in high-temperature conditions. Overheating may cause an explosion.

- Do not disassemble or damage the battery to avoid battery leakage, overheating, or explosion.
- In the case of deformation, stop using the battery immediately and dispose of it properly.

If you are not sure whether your device or the included battery is safe to use, turn off the device, put it in a safe place, and contact our customer support via email at contact@circuitmess.com.

Keep the device dry.

Do not attempt to repair the device by yourself.

If any part of the device does not work correctly, contact our customer support (contact@circuitmess.com) or take your device to a certified repair shop.

Connect other devices according to their operating instructions. Do not connect incompatible devices to this device.

Precautions

During prolonged use, Synthia may rarely overheat.

Keep CircuitMess Synthia in a ventilated room during the use and the assembly. Pay special attention to this if you suffer from a physical condition that affects your ability to detect heat on your body.

Assembling or using CircuitMess Synthia in an area with a potentially explosive atmosphere, such as areas where the air contains high levels of flammable chemicals, vapors, or particles (such as dust or metal powder), can be dangerous.

Exposure of CircuitMess Synthia to environments with high concentrations of industrial chemicals, including liquefied gases that evaporate, such as helium, can damage the functionality of CircuitMess Synthia.

Do not use CircuitMess Synthia in hospital operating rooms or intensive care units.

Contact your doctor or our customer support (contact@circuitemp.com) to determine if the device's operation may compromise the work of medical devices.

To avoid possible interference with a pacemaker, maintain a minimum distance of 15 cm between the CircuitMess Synthia and the pacemaker.

To achieve this, do not carry the included device in your pockets.

Do not use CircuitMess Synthia near hearing aids or similar medical aids and equipment to avoid interference with medical equipment.

Check aircraft safety regulations and turn off CircuitMess Synthia on the aircraft if necessary.

Do not use CircuitMess Synthia while driving.

To avoid lightning strikes, do not use CircuitMess Synthia outdoor during storms.

Do not use CircuitMess Synthia in high humidity environments such as bathrooms. Failure to do so may result in electric shock, injury, fire, and damage to the product, electronic components, power adapter, or other parts of this electronic educational kit.

Follow all the rules that limit the use of portable electronic devices in some situations and conditions.

The individual parts and components in the CircuitMess Synthia can pose a choking risk to children under 36 months. Keep all components, tools, and parts of this product away from small children before and after assembling the device.

Additional Recommendations and Precautions for Parents, Guardians, and Teachers Buying CircuitMess Synthia for Children

1. Carefully follow the instructions for adequately assembling CircuitMess Synthia. Keep these and all other instructions that came with the products in a safe place.

2. Supervise your child while assembling and using the CircuitMess Synthia. Your responsibility is to ensure that the child uses the CircuitMess Synthia correctly and that the CircuitMess Synthia is suitable for the child's age and abilities.

3. Check from time to time if CircuitMess Synthia is damaged or worn out in any way to prevent possible injuries and risks for the child's health and safety. If CircuitMess Synthia is damaged, remove it immediately.

4. Remove any unnecessary packaging, but keep the instructions. Take care that children do not play with any plastic packaging as there are suffocation risks.

5. Teach children to always store CircuitMess Synthia and other parts of the CircuitMess Synthia educational kit appropriately to prevent accidents. Do not leave CircuitMess Synthia on stairs or on the floor in your home or classroom

where someone can step on them.

6. Always report a product security issue to our customer support (contact@circuitmess.com)

Declaration of Conformity

CircuitMess d.o.o. declares that this DIY educational kit CircuitMess Synthia model complies with the essential requirements and all other relevant provisions of Directive 2014/53 / EU. The full text of the EU declaration of conformity is available at the following Internet address: circuitmess.com/certification.

Legal Information

This device can be used in all EU Member States. Check all the national and local regulations about using the device. This device may be restricted for use, depending on local laws.

Manufacturer:

CircuitMess, Inc.

651 N Broad St, Suite

206, Middletown, 19709

New Castle,

Delaware

Proper disposal of this product

WEEE markings on the product indicate that this product may not be disposed of with the rest of your household waste in the EU. To prevent possible damage to the environment or human health from uncontrolled waste disposal, recycle the product responsibly. Recycling promotes the sustainable reuse of resources. For more information on the disposal of electrical and electronic equipment, don't hesitate to contact your local household waste disposal service, the store where you purchased the kit, or our customer support (contact@circuitmess.com).

IMPORTANT! Warranty conditions:

The warranty is valid only if the original invoice is attached to

the product as proof of purchase during the complaint. If the customer sends the product for repair for any reason not covered by the warranty, the customer may be charged for inspection and testing, and delivery costs.

WARRANTY STATEMENT

CircuitMess d.o.o., with its registered office in New Castle, Delaware, 651 N Broad St, Suite, 206, Middletown, 19709, guarantees the quality and proper functionality of the components that come in the CircuitMess Synthia DIY educational kit for a duration of 24 months from the date of purchase.

If the assembled device does not work correctly due to defects in supplied parts or electronic components supplied in the CircuitMess Synthia DIY educational kit, CircuitMess d.o.o. will repair the product or send an equivalent replacement product at their own expense.

In case you are experiencing assembly or functionality difficulties with your device, please contact us via email (contact@circuitmess.com).

Please include a detailed description of the problem.

If you are sending the product to a repair shop, it is recommended to deliver the product in the original packaging to protect it from potential damage during transportation.

WARRANTY CONDITIONS

- The warranty period begins on the day of sale indicated on the invoice.
- The warranty is valid upon presentation of the original invoice.
- If the defect is not remedied within a reasonable period after receiving the product for repair, CircuitMess d.o.o. will replace it with a new product.

The repair shop does not take responsibility for storing and/or losing personal data while repairing the device.

WARRANTY DOES NOT COVER

- Upgrades, alterations, modifications to hardware and/or software without the written consent of CircuitMess d.o.o.
- Malfunctions due to improper handling, faults due to wear of the device and/or its parts (if you need help with assembly or if you have difficulty using the device after assembling it, please contact us at contact@circuitmess.com).
- Defects caused by external particles (including, but not limited to: staples, waste, dust, and food) and external factors (including, but not limited to: moisture, water, and thermal damage).
- Mechanical damage and/or failures caused by mechanical damage
- Use of the product for a purpose for which it is not intended
- Requirements for the appearance, technical functionalities, and/or capabilities of the product outside the manufacturer's specifications and/or standards.
- Damages to personal data, other tangible and/or intangible assets of the buyer and/or third parties, indirect damages, lost profits caused by the use of the product, and/or its failure.
- Repairs in an unauthorized repair shop and/or installation of non-original spare parts.
- Damage caused during transportation caused by improper packaging.

The rights under this warranty are the exclusive and final rights of the customer unless otherwise provided by national law.

CircuitMess d.o.o. as the warranty provider and/or its authorized partners will not be liable for any defect, damage, loss, direct or indirect cost, or connection with the delivered products outside the warranty conditions written here.

This warranty does not affect other

rights of the customer belonging to him on other legal grounds.

FCC STATEMENT:

This device complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for Class B digital devices pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference to radio communications. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication.

However, there is no guarantee that interference will not occur in a particular installation. If this toy does cause interference to radio or television reception, you can check this by turning the toy off and on while listening for the interference), one or more of the following measures may be useful. • Reorient or relocate the receiving antenna • Increase the separation between the toy and the radio or the TV • Consult the dealer or an experienced TV-radio technician for help.

NOTE: Changes, adjustments or modifications to this unit, including but not limited to the replacement of any transmitter component (crystal, semiconductor, etc), could result in a violation of FCC rules under part 15 and/or 95 and must be expressly approved by CircuitMess d.o.o. or they could void the user's authority to operate the equipment.

Photosensitivity / epilepsy warning:

A very small percentage of individuals may experience

epileptic seizures when exposed to certain light patterns or flashing lights. Exposure to certain patterns may induce an epileptic seizure in these individuals. Certain conditions may induce previously undetected epileptic symptoms even in persons who have no history of prior seizures or epilepsy. If you, or anyone in your family, have an epileptic condition, consult your physician before playing.

If you experience any of the following symptoms while using the product - dizziness, altered vision, eye or muscle twitches, loss of awareness, disorientation, any involuntary movement, or convulsions - immediately discontinue use and consult your physician before resuming play.

WARNING:

This toy produces flashes that may trigger epilepsy in sensitised individuals.

 **WARNING:**

CHOKING HAZARD -
Small parts. Not for children under 3 years.

WARRANTY SHEET

Product name:	CircuitMess Synthia do-it-yourself educational kit
Warranty on components and parts contained in this set is:	24 months
Date of purchase:	
Seller and point of sale stamp:	
Invoice number:	

Information on interventions during warranty period is entered by a repair shop technician at an authorized repair shop.

Received on	Issued on	Fault description	Warranty extension

 **CircuitMess**



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206, Middletown, 19709
New Castle,
Delaware
Country of origin: China
www.circuitmess.com

Authorized repair shop:

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651 N Broad St, Suite
206, Middletown, 19709
New Castle,
Delaware
Country of origin: China
www.circuitmess.com

