RX2-Wave-Player

Manual 2.0

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PREAMBLE

Dear Explo Customer,

Please read through these sets of instructions carefully, before using your devices. It contains many Informations which are to help you getting to know your system.

We ask you to follow the safety and usage notes carefully.

Should you have any questions, or any confusions arise during the usage of the devices, which cannot be answered by this manual, please do not hesitate to contact us either by phone or mail.

A lot of fun with your new ignition system wishes you,

Your Explo Team

OVERVIEW

The following manual describes the bidirectional music player RX2-Wave Player and is laid out over these chapters.

About the RX2-Wave-Player
Function of the RX2-Wave-Player

Description of the RX2-Wave-Player
Build and components of the Hardware
Menu and settings

Using the RX2-Wave-Player
Preparation of music files and an SD-card for the show
Usage in a manual show
Usage in an automatic show
Testing the RX2-Wave-Player

Other
Tipps & Tricks
Technical Data

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1 ABOUT THE RX2-WAVE-PLAYER

1.1 FUNCTION OF THE RX2-WAVE-PLAYER

The RX2-Wave Player is a receiver, to be used to play music files (*.wav). It can be controlled via an X2 transmitter and be started manually or automatically in a show.

Single music tracks can be saved onto the provided SD-card and be started by their respective box- and channelnumber.

The musical output is done either via the 3.5mm stereo jack or XLR..

1.2 CONTROLLING THE RX2-WAVE-PLAYER

The RX2-Wave Player can be started via radio or manually.

When using radio control, use box and channelnumber, the same way as with other Explo receivers. The following settings must be checked before using the device in a show:

1.2.1 BOXNUMBER

The Boxnumber is a general adressing of the receiver. It can be set from 0-99 and can be changed either directly on the player, or via the transmitter.

It is recommended to use an own boxnumber for music receivers, to prevent faulty starting of the music, while controlling other receivers.

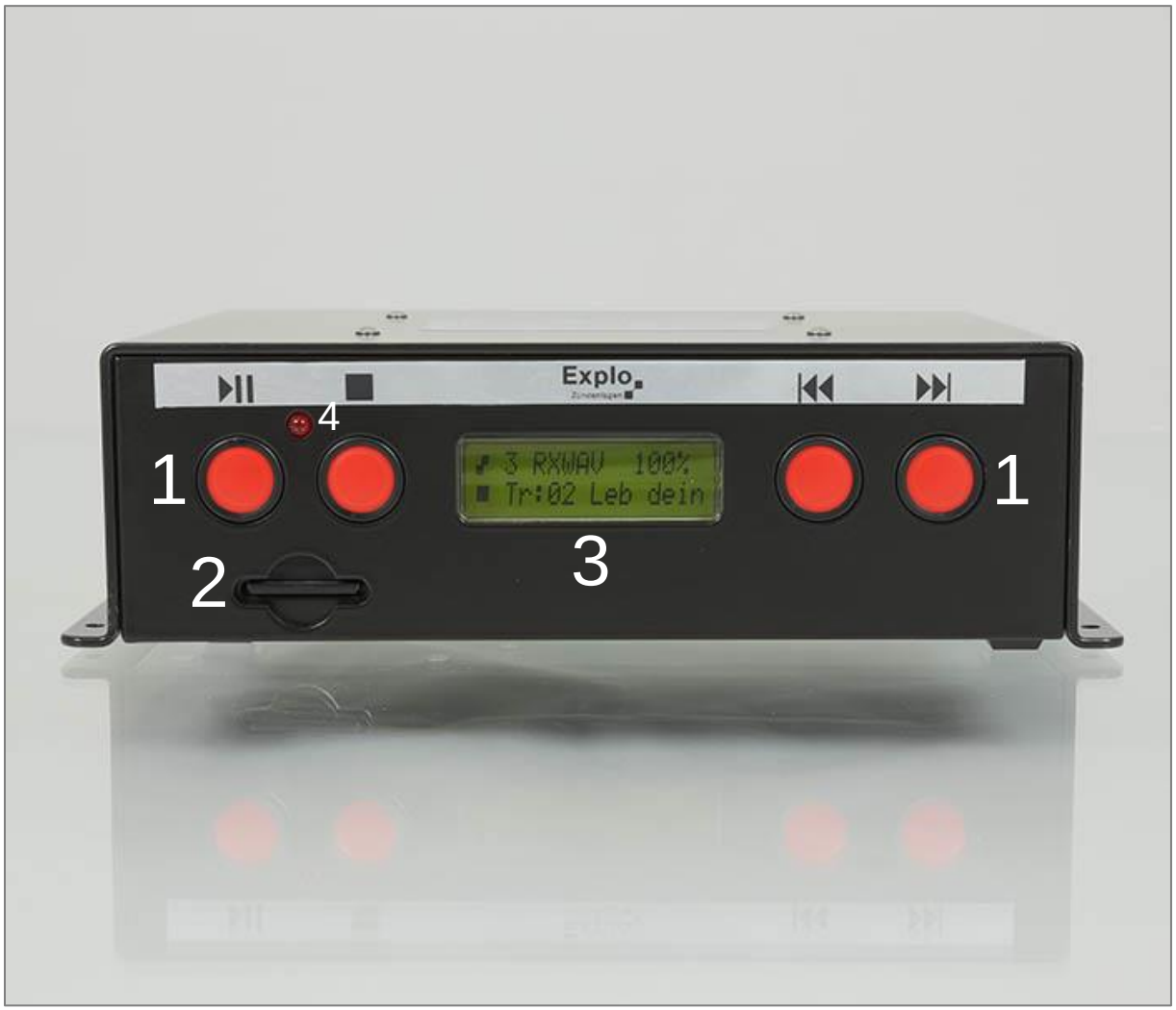
1.2.2 CHANNELNUMBER / TRACKNAME

The channelnumber indicates which track is to be played. For the device to sort different tracks correctly, these need to be labeled before saving them onto the SD-card with the preferred channelnumber, like "01Trackname", "02Trackname", etc..

2 RECEIVER RX2-WAVE-PLAYER

2.1 COMPONENTS OF THE RECEIVER

2.1.1 FRONT OVERVIEW



Components of the RX2-Wave-Player Front	
1	Buttons
2	SD-slot
3	Display
4	Radio Status LED

2.1.2 BACK OVERVIEW

Components of the RX2-Wave-Player backside	
1	On- / Off switch
2	Activate button
3	Charging- / Programmingsocket
4	Audio-outputs XLR
5	BNC-Antennasocket
6	Audio-output 3.5mm stereo jack

2.1.3 DESCRIPTION OF COMPONENTS

2.1.3.1 BUTTONS

These buttons allow direct control of the player.They are used to navigate the menu, change settings and manually starting the device without radio signals.

Buttons	
⏯	Play / Pause
⏹	Stop
⏮	Back
⏭	Forward

2.1.3.2 SD-SLOT

Houses the reader for SD-cards.

2.1.3.3 DISPLAY

Shows the receivers status as well as its menu structure.

2.1.3.4 RADIO STATUS LED

The red LED on the devices front gives you a feedback about radio signals. Should a signal be received, the LED will flash once for ignitions or a testsignal in testmode, and three times for a test signal during armed mode. When a track plays, it will be permanently lit.

2.1.3.5 ON-/ OFF SWITCH

This switch disconnects the power from the RX2-Wave Player. It must be activated (Position "I"), for the player to be turned on via the activation button. To switch the player off, the switch must also be turned to off (Position "O").

2.1.3.6 ACTIVATE BUTTON

After using the ON switch, this button can be pressed to start the device.

2.1.3.7 PROGRAMMING- AND CHARGING SOCKET

This socket allows you to charge the internal battery of the Player, or programm it with the newest firmware update.

Pins on the RX2-Wave-Player	
Pin 1	GND
Pin 2	RX
Pin 3	TX
Pin 4	Battery 1
Pin 5	Battery 2
Pin 6	Not connected
Pin 7	Not connected

2.1.3.8 BNC-ANTENNA SOCKET

Used to connect the provided antenna with the device. The RX2-Wave Player also features a protective cap for this socket, to prevent dirt or moisture from entering.

2.1.3.9 AUDIO-OUTPUT XLR

These are two parallel XLR Audio outputs.

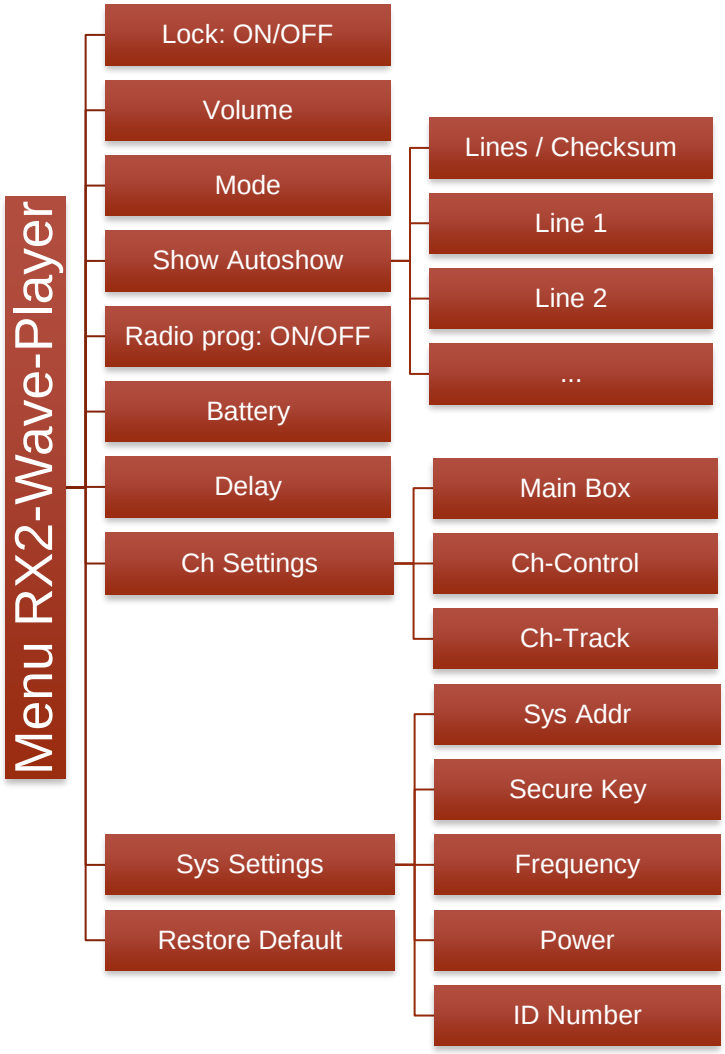
2.1.3.10 AUDIO OUTPUT 3.5MM STEREO JACK

A standard 3.5mm stereo jack audio output.

2.2 MENU OF THE RX2-WAVE-PLAYER

By pressing the Stop and Play/Pause button at the same time, you can access the menu of the receiver. Within the menu, you can use the Play/Pause button to confirm selections and the Stop button to cancel or leave the menu. Using the Forward and Back buttons you can change settings.

2.2.1 MAIN MENU ITEMS



2.2.1.1 LOCK

This menu item locks the play function of the Player. If this is set to "ON", no tracks can be started. By entering the menu again, this setting will be set back.

2.2.1.2 VOLUME

Allows you to lower the output volume of the RX2-Wave Player up to -127dB.

2.2.1.3 MODE

Allows you to manually put the receiver into Test / Armed / Sleep Mode.

2.2.1.4 SHOW AUTOSHOW

Shows the number on ignition lines of the Autoshow saved onto the receiver. You can also view and check every single line.

2.2.1.5 RADIO PROG

Allows you to set whether the receiver should receiver transmitter signals for an automatic entry into its devicelist. Is it set to OFF, it can't be automaticall added.

Further, the ability to send show files via radio to the receiver is locked as well.

2.2.1.6 BATTERY

Allows you to set whether the device uses a NiMH-battery (NiMH) or an internal lead-acid-battery (Pb)..

2.2.1.7 DELAY

Here you can set the distance of the sounds origin from the audience. The RX2-Wave Player will then calculate the neccessary delay by the speed of sound, that is needed for the audience to hear the music synchronous to the fireworks.

2.2.1.8 CH SETTINGS

MAIN BOX

Allows you to set the boxnumber (Main Box, from 1-99) that will control the RX2-Wave Player.

CH-CONTROL

Allows you to set which channelnumbers access special functions of the Player.

The following special functions can be started with the following channels:

Special channels RX2-Wave-Player	
61	Play / Pause Track
62	Stop (Track time will be set to 0)
63	Previous track will be started
64	Next track will be started
65	Reset (Track time will be set to 0, and the Player is set to track 01)
66	A timer is started and shown on the display

CH-TRACK

Allows you to set the channelnumbers that will start single tracks. Standard: Channel 1 = Track 01, Channel 2 = Track 02, etc...

2.2.1.9 SYS SETTINGS

Here you can change different settings for the radio control, as well as see the Players ID number.

SYS ADDR

Allows you to change the systemadress that will control the Player. It can only be controlled by transmitters featuring the same systemadress.

SECURE KEY

Allows you to change the security key that will control the Player. It can only be controlled by transmitters featuring the same security key (Standard is 139).

FREQUENCY

Allows you to slightly alter the radio modules frequency. Can be used if a third party device uses the same frequency for example (Standard is 6).

POWER

Allows you to alter the radio modules output power (Standard is 10).

ID NUMBER

Shows the indiviual ID number of the device. Can be used to identify a receiver without a doubt via the transmitter.

2.2.1.10 RESTORE DEFAULT

Using this command, all settings of the RX2-Wave Player will be reset to their factory settings. This includes the Volume, Delay, Frequency and Power, as well as deleting the AutoShow.

2.3 USING THE DEVICE IN A SHOW

2.3.1 PREPARING THE SD-CARD AND TRACKS

Before uploading the tracks, the SD-card should be formatted. This can be done by right-clicking it, and selecting "Format". The following settings should be taken:

IMPORTANT: For the track to be correctly read by the SD module, it should be set to adhere to the following:

Only WAV-files can be used(PCM 16Bit, 44.1kHz; 32Bit and 32Bit floating does not work!).
Up to 60 tracks can be read by the Player. The name of the first track must start with "01", the following naming is not important (eg.: "01 Eye ofthetiger").

Do not use special characters (%,&,$,§,á,ô) and umlauts (ä,ö,ü).

The correct settings of the track can be made and checked via an audio editing programm (Audacity for example).

2.3.2 MANUALLY IGNITED SHOWS

The tracks of the RX2-Wave Player can be started via manual ignition signals (box- and channelnumber). The following steps should be adhered to correctly control the receiver:

Preparing the RX2-Wave-Player	
1	Set the RX2-Wave-Player to the preferred boxnumber (Recommendation is 50).
2	Correctly label the music tracks and save them to the SD-card.
3	Test playing the tracks with the transmitter.
4	Turn all receivers armed before the show starts.
5	Start the right track. Note: After a track has finished, the next one will start automatically.
6	Switch of the RX2-Wave-Players after the show.

The spare buttons of a TX2-70K can be a helpful support for shows, to start tracks simply and fast.

If needed, tracks can also be started using the receivers buttons.

2.3.3 AUTOMATICALLY IGNITED SHOWS (AUTOSHOW)

The following steps should be taken for a successful creation of a show with music from the RX2-Wave Player:

2.3.3.1 SHOWCONCEPT AND PROGRAMMING THE RECEIVERS

As a first step, create the basic show concept. Check the following items:

1.) Which music and how many points or sound do I wish to use?
2.) How far away from the audience is the sound?

ADDING IGNITIONS

The track starts can be added via box- and channelnumber into the show. After a track has finished, the next one will start automatically.

LOADING THE SHOW ONTO THE RECEIVERS

To transmit the show onto the receivers, please consult the manuel of the X2-series.

3 OTHER

3.1 TIPPS & TRICKS

3.1.1 RADIO CONNECTIVITY:

A good radio connectivity is an essential part of a trouble free usage of a radio controlled system. Taking note of these few hints can improve the connection between transmitter and receiver drastically.

3.1.2 POSITIONING YOUR DEVICES:

Ideally, you should place the transmitter and receiver in a way that no objects are placed between them, and you have free line of sight. You should especially take heed not to have any metallic objects, as well as mountains between them.

Theoretically it is possible to receive signals even behind these objects, since radio waves can reach their destination indirectly by breaking or reflecting off of objects. The maximum range can however only be achieved by a free line of sight.

Transmitter and receiver must not be covered by metalls, since these can shield against radio waves. Ideally, the devices should be placed in an elevated position, like a table. Should the devices be placed on water, with a raft for example, we recommend using magnetic antennas, and placing these about a meter above the water level.

3.1.2.1 DIRECTIONAL ANTENNAS

Thanks to their emmission, the antennas (should the devices be placed at the same height) should be upright, since the emit signals from their sides the strongest. If the transmitter and receivers are placed at a different height, the antennas should be placed in a way that they are parallel to eachother.

If possible, the usage of a Grounplane-Antenna (transmitter) and Magnetic antennas (receiver) is recommended, since they can drastically improve the radio range. the magnetic antennas of the receivers should be placed on top of a 15x 15cm metallic plate. During rain or thaw, especially with wet or salty sea air, it is best to connect the antenna before placing the receiver in the field, since otherwise there is a possibility of water entering the BNC socket. After usage in wet conditions, we recommend allowing your devices to dry, especially the antenna and BNC socket. Ideally using compressed air.

The antennas can be damaged by physical means, like bending or pulling on them too strongly. Should this happen, a short circuit within the antenna can occur. In this case, the antenna needs to be replaced immediately, since it won't function properly anymore. You can check for such an error, by measuring for a connection between the inner pin of the antenna, and the outer rim.

3.1.3 CHARGING YOUR DEVICES

All devices should be charged before and after every show, as well as every four months during storage at room temperature. Only use NiMH chargers for NiMH batteries, and Optimate chargers for lead-acid-batteries. Both chargers are available from us. Devices using a NiMH battery have a small sticker next to the charging socket to show this.

NiMH chargers should be disconnected from the grid for a short time after a device has finished charging.

3.2 TECHNICAL DATA

Here you can find the technical data for the receiver:

Receiver RX2-Wave-Player	
Measurements	222 x 155 x 65 mm
Weight	1.800 g
Case	Aluminium case
Radio range	800 m
Power supply	2x NiMH-battery 12V
Standby	7 hours

Konformitätserklärung gemäß der Richtlinie 2014/53/EU (RED)

Declaration of Conformity appropriate to the Directive 2014/53/EU (RED)

Die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung trägt der Hersteller.

Hersteller / Verantwortliche Person: *Manufacturer / responsible person:*	explo GmbH, Völkermarkterstraße 240, 9020 Klagenfurt am Wörthersee, Österreich (AUT)
Erklärt, dass das Produkt: *Declares that the product:*	Funkgesteuertes Musikabspielgerät *Radio controlled music player*
Type: *Type:*	RX2-Wave-Player
Verwendungszweck: *Intended purpose:*	Musikabspielgerät für das Explo Zündsystem *Music player for the Explo ignition system*
Verwendete Antennen: *Used antennas:*	Passive Antennen 50Ohm, ¼ Lambda (433MHz), namentlich: *Passive antennas 50Ohm, ¼ Lambda (433MHz), namely:* Albrecht MiniMag 440 BNC
Seriennummer: *Serial number:*	20-xxxxx / 20xxxxx

bei bestimmungsgemäßer Verwendung den grundlegenden Anforderungen der Richtlinie 2014/53/EU entspricht.

are complying with the essential requirements of the Directive 2014/53/EU, when used for its intended purpose.

Einhaltung der grundlegenden Anforderungen durch (verwendete Standards/Spezifikationen):

Means of proving conformity with the essential requirements (standards/specifications used):

Gesundheit und Sicherheit

Health and safety requirements

Angewandte Normen:
Standards applied:

2014/35/EU (Low Voltage Directive)
EN 60950-1:2006 / A1:2010+A2:2013+A11:2009+A12:2011
EN 62479:2010

Schutzanforderungen in Bezug auf elektromagnetische Verträglichkeit

Protection requirements concerning electromagnetic compatibility

Angewandte Normen:
Standards applied:

EN 301489-1 v2.1.1 (2017-02)
EN 301489-3 v2.1.1 (2017-03)

Maßnahmen zur effizienten Nutzung des Funkfrequenzspektrums

Measures for the efficient use of the radio frequency spectrum

Angewandte Normen:
Standards applied:

EN 300220-2 v3.1.1 (2016-11)

Klagenfurt a.W., am 21.02.2020 — Harald Kulterer, Geschäftsführer explo GmbH

Ort, Datum
Place, date

Name und Unterschrift
Name and signature