- MxSwitch top-hat rail module with flip-top lid
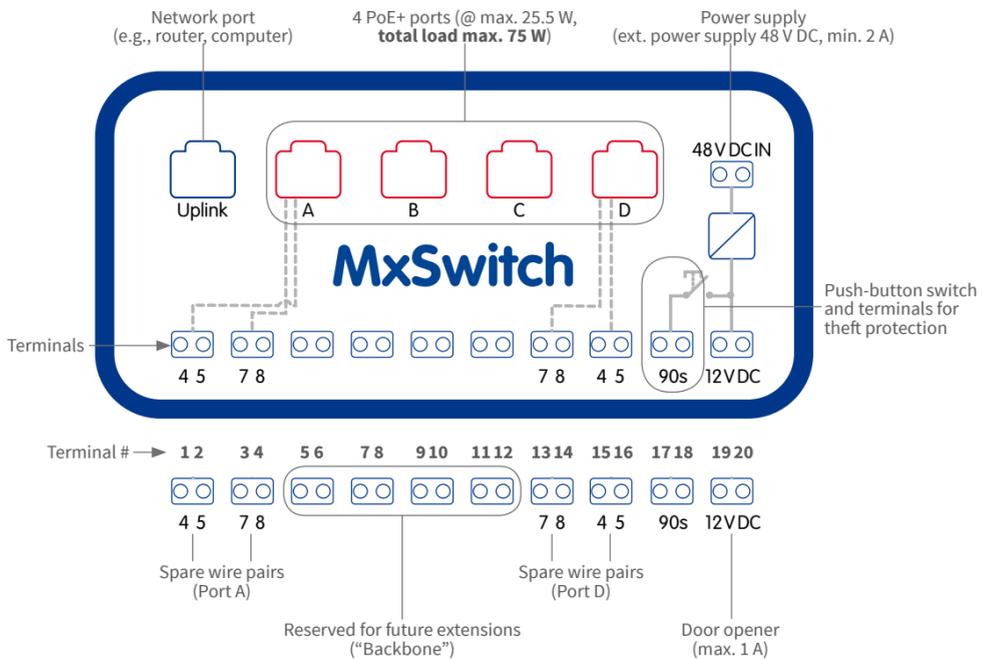
MxSwitch

5-port network switch for top-hat rail installation, for combined network connectivity and PoE+ power supply of up to four MOBOTIX door stations, cameras or other PoE+ devices

More information:
www.mobotix.com > Products > Home Automation > MxSwitch

MX-SWITCH
32.797-001_EN_12/2016

MOBOTIX

Connectors – Overview

Network port (e.g., router, computer)

4 PoE+ ports (@ max. 25.5 W, **total load max. 75 W**)

Power supply (ext. power supply 48 V DC, min. 2 A)

48 V DC IN

Uplink   A   B   C   D

MxSwitch

Push-button switch and terminals for theft protection

Terminals

4 5   7 8   7 8   4 5   90s   12 VDC

Terminal # → 1 2   3 4   5 6   7 8   9 10   11 12   13 14   15 16   17 18   19 20

4 5   7 8   4 5   90s   12 VDC

Spare wire pairs (Port A)

Reserved for future extensions ("Backbone")

Spare wire pairs (Port D)

Door opener (max. 1 A)

Special Product Features

- Simple installation – just click onto top-hat rail.
- 4 PoE+-powered network ports (max. 25.5 W per port, max. 75 W total load on all PoE+ ports combined)
- 1 network port for connecting LAN or computer ("Uplink").
- Integrated power supply for door opener with 12 V DC, 1 A (e.g., switched by BellRFID or KeypadRFID).

- Unused wire pairs 4/5 and 7/8 of network installation cables for PoE ports A and D passed through to terminals.
- Push-button switch activates 12 V DC for 90 sec. on terminals 17/18 (to temporarily disable theft protection of the frames of door stations and MxDisplay units).
- Integrated extensibility for additional top-hat rail modules ("Backbone").

Safety Warnings

- The MOBOTIX MxSwitch is only to be used in switch boxes and must be installed on top-hat rails (also "cap rail" or "DIN rail").
- This product must not be used in locations exposed to the dangers of explosion.
- Only use an external power supply with 48 V DC and min. 2 A.
- Make sure to respect the operating temperature range of 0 to +40 °C for the MxSwitch.
- **Electrical installation:** Electrical systems and equipment may only be installed, modified and maintained by a qualified electrician or

under the direction and supervision of a qualified electrician in accordance with the applicable guidelines. Make sure to properly set up all electrical connections.
- **Network security:** MOBOTIX products include all of the necessary configuration options for operation in Ethernet networks in compliance with data protection laws. The operator is responsible for the data protection concept across the entire system. The basic settings required to prevent misuse can be configured in the software and are password-protected. This prevents unauthorized parties from accessing these settings.

Installing and Removing the MxSwitch

Caution – Danger of Life! Switch off all power to the switch box before working on the switch box and make sure that the power lines do not carry any current!

1. Installing the Module

Place the module onto the top-hat rail at the desired location, then gently press the module onto the rail at the indicated locations until it clicks into place.
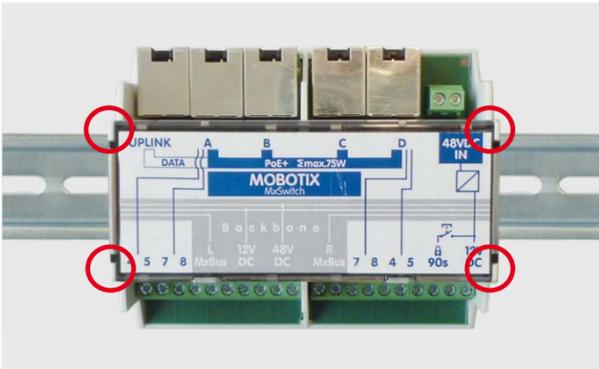

After the clips have clicked into place, you can easily slide the module on the rail until you have positioned it properly.

2. Removing the Module

Remove the network cable and any other cables or wires; isolate blank wire ends, if required.

Push a suitable screwdriver into the red clip on one side of the module (top or bottom), then gently pull the clip from the housing until it clicks into the open locked position. Repeat the procedure on the clip on the other side and remove the module.
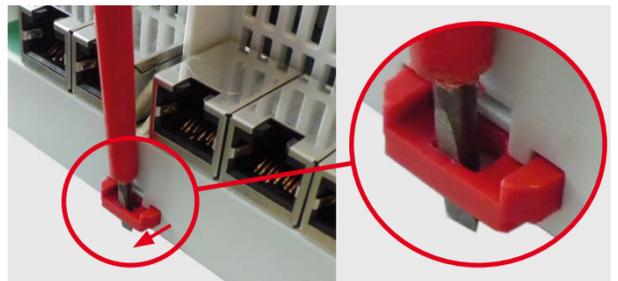
After removing the module, lightly press on the clips; they will jump back into their original position.

Connecting the MxSwitch and the Powered Devices

1. Notes on Connecting
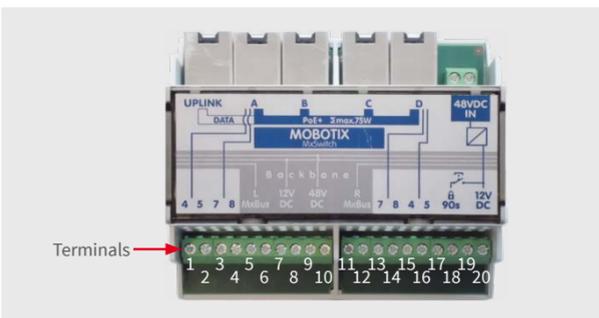
Terminals

- Terminals 1 to 4: Spare wire pairs 4/5 and 7/8 on network port A.
- Terminals 5 to 12: Reserved for future extensions ("Backbone").
- Terminals 13 to 16: Spare wire pairs 7/8 and 4/5 on network port D.
- Terminals 17/18: Power supply for disabling the theft protection (see «Deactivating the Theft Protection»).
- Terminals 19/20: Power supply for door opener (e.g., switched by BellRFID or KeypadRFID).

2. Using the Spare Wire Pairs (Ports A and D)

Uplink   A   B   C   D   48 V DC IN

MxSwitch

4 5   7 8   90s   12 VDC
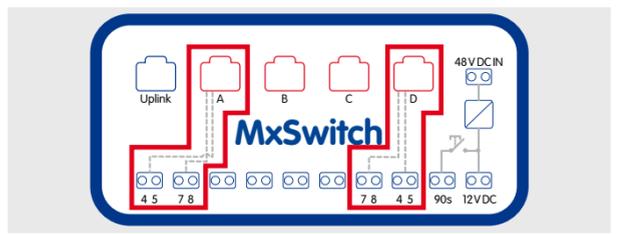
For these two ports, the wire pairs 4/5 and 7/8 have been looped through to the terminals so they can be used for other purposes (see also section «Example Scenarios» and the connection examples on page 2).

Make sure to use a standard network installation cable since you need to apply crimping plugs inside the switch box or use a patch field to connect the cable to the MxSwitch.

3. Using the Uplink Port

This port can be used to connect to another switch (and thus to the network) or to a router. If this port is not used, you can connect a computer to configure the network devices powered by the MxSwitch.

Notes on Using the MxSwitch

1. LED Signals

LEDs for network ports

LED for theft protection
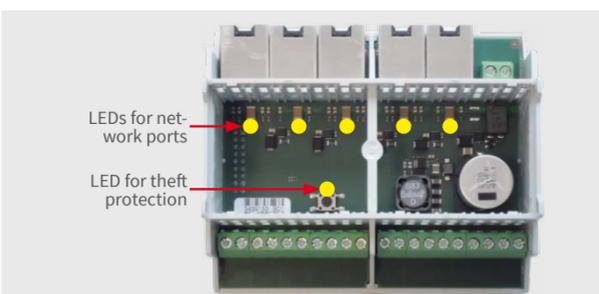
The MxSwitch has the following LEDs:

- 4 LEDs to indicate activity on the network port above each LED.
- 1 LED lights up after pressing the push-button switch. The LED stays on as long as the wires for deactivating the theft protection is powered (see the following Section «Deactivating the Theft Protection»).

2. Deactivating the Theft Protection

If the wires for deactivating the theft protection of a MOBOTIX frame for a door station or an MxDisplay have been connected to the terminals 17/18, you can press the push-button switch inside the module to deactivate the theft protection of the attached frames for at least 90 sec.
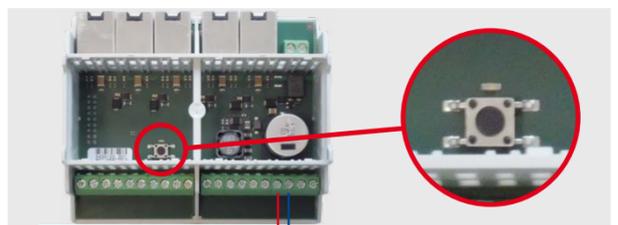
During this time, you can use the supplied key or ruler to open the frames and remove the door station modules or the MxDisplay, respectively.

Caution: After connecting these wires, *always run a functional test without modules in the frame* to make sure that disabling the theft protection actually works (please see the pertinent product documentation).

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1. Two Door Stations, One M15, One MxDisplay
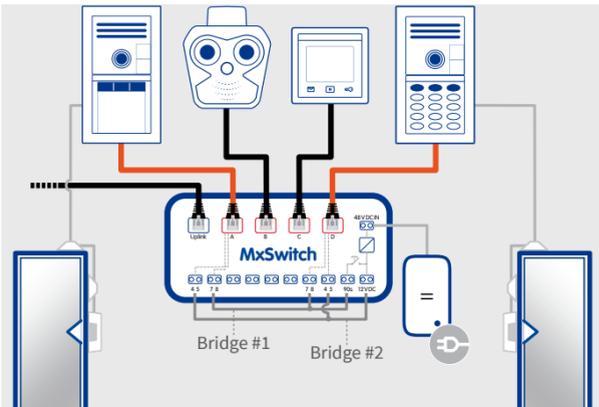
Bridge #1   Bridge #2

- PoE power supply of all devices on ports A to D.
- Door stations attached to ports A and D.
- M15 and MxDisplay attached to ports B and C (PoE only).
- Bridge #1 at MxSwitch connects push-button key for theft protection to wire pair 7/8 of the ports A and D.
- Bridge #2 at MxSwitch connects 12 V DC to wire pair 4/5 of the ports A and D.
- Connect wire pair 7/8 of the network installation cable to theft protection of door station frames.
- Connect wire pair 4/5 of the network installation cable to signal output of the BellRFID or KeypadRFID, respectively.
- Connect the signal outputs at the BellRFID and the KeypadRFID to the door opener of the corresponding door.

## 2. Two Door Stations, One M15, One MxDisplay, Two MX-DoorMaster
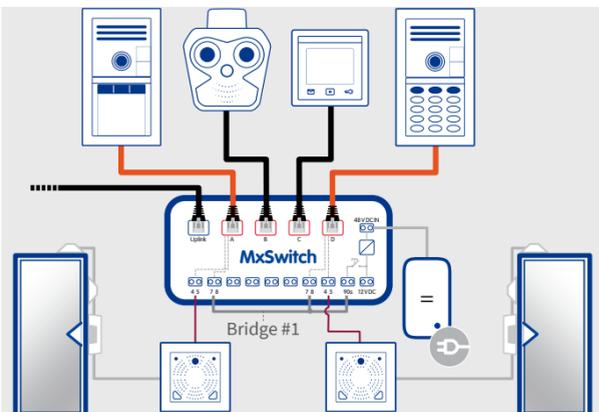
Bridge #1

Differences to Scenario _1_:
- Bridge #2 (see above) at the switch is omitted.

- Connect each wire pair 4/5 of the network installation cable to the MxBus connector of the corresponding door station.
- Connect each wire pair 4/5 of the ports A and D at the MxSwitch with the corresponding MX-DoorMaster.
- Connect the door openers of the respective doors to the corresponding MX-DoorMaster.

3. Four Cameras

Network installation cable   Patch cable

MxBus wires

GPS   Output   Input
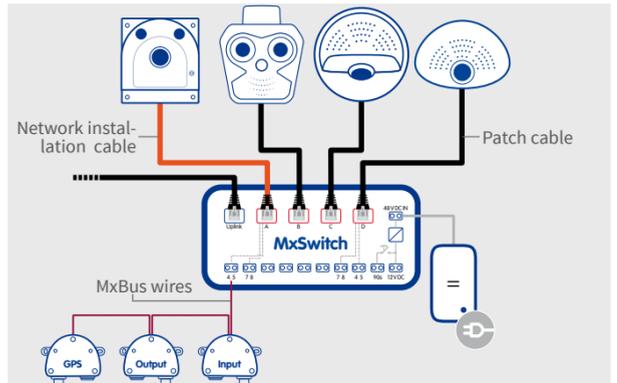
- PoE power supply of all devices on ports A to D.
- Connect wire pair 4/5 of the network installation cable to the MxBus connector of the camera at port A.
- Connect wire pair 4/5 of port A at the MxSwitch to an MxBus module to which additional MxBus modules can be connected (such as the MX-Output-Box and the MX-GPS-Box to the MX-Input-Box in the example).
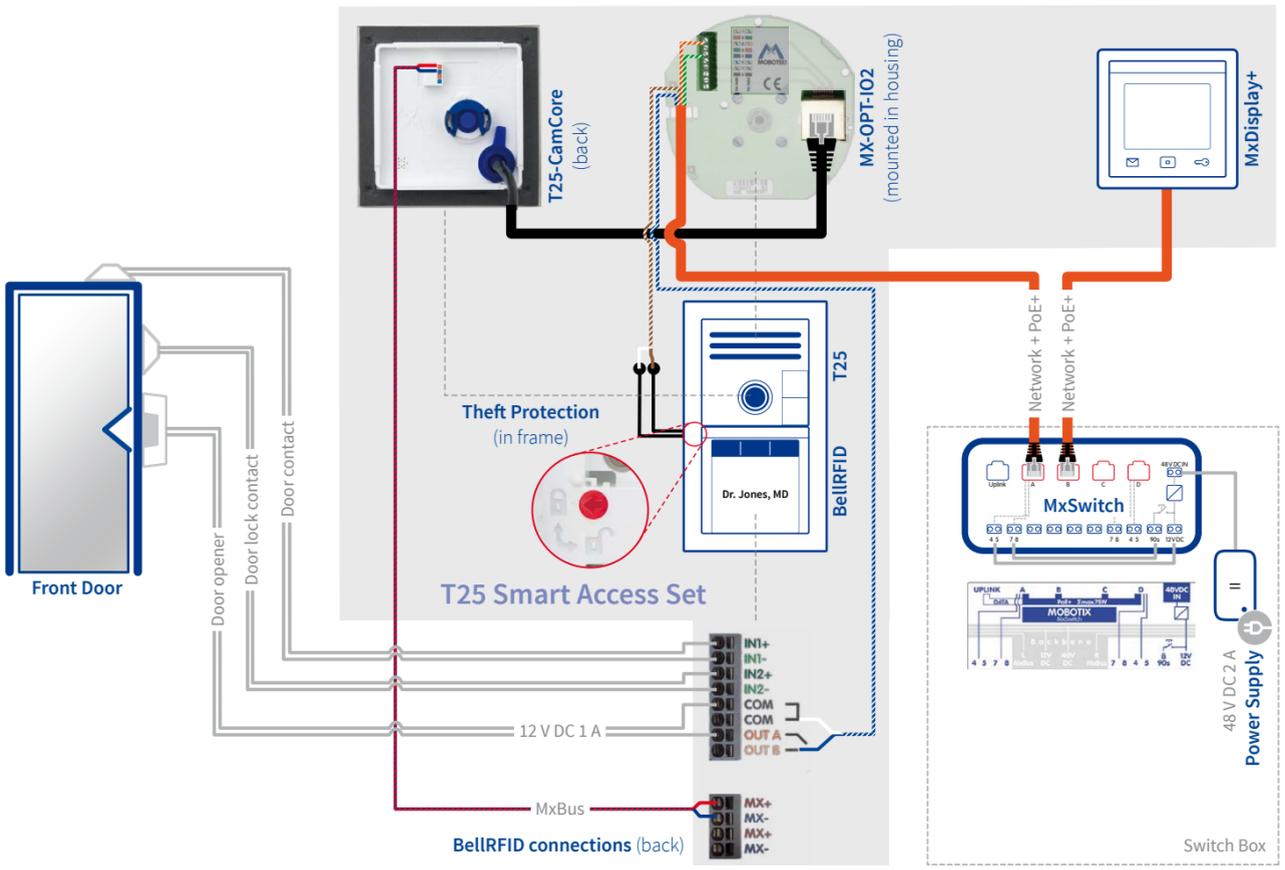
4. Three Cameras, One IR LED Light


Patch cable
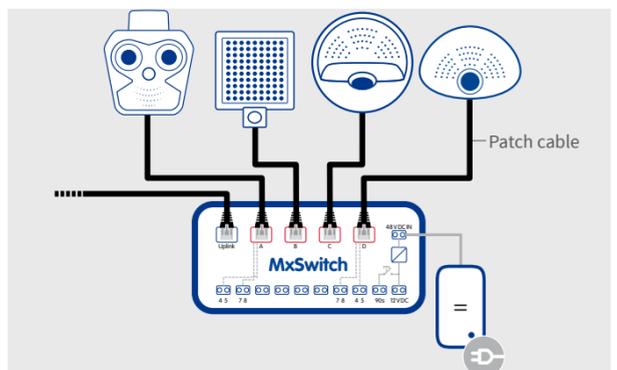
Differences to Scenario _3_:
- The spare wire pairs of ports A and D are not used.
- Instead of a camera, the module supplies an IR LED light (25 W, with photoelectric switch) with PoE power.

Connection Example in SmartAccessSet Without MX-DoorMaster

- Wire pair 4/5 connected to BellRFID signal output.
- Wire pair 7/8 connected to theft protection.

Connection Example in SmartAccessSet With MX-DoorMaster
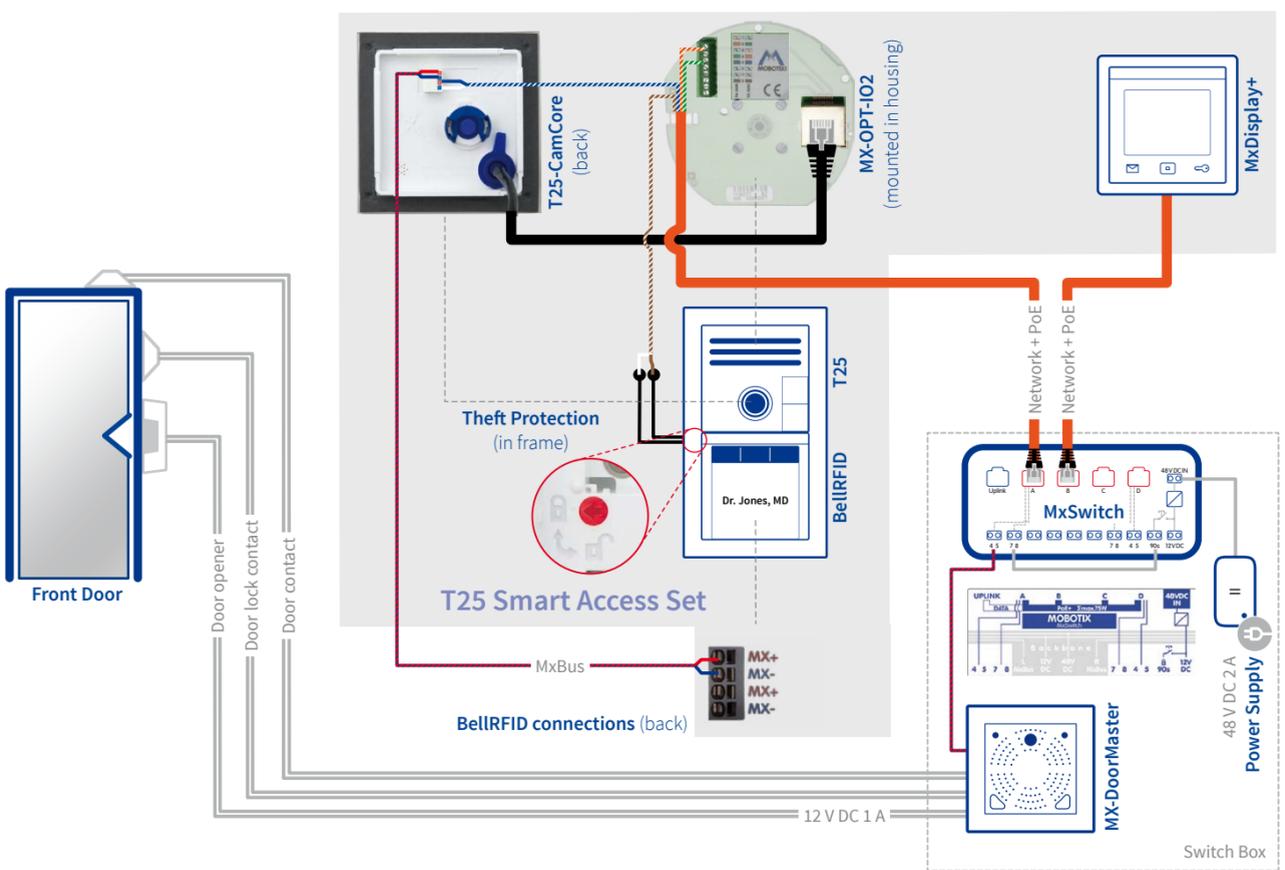
- Wire pair 4/5 connected to MxBus plug of the T25.
- Wire pair 7/8 connected to theft protection.

Technical Specifications

MxSwitch	
Controls	Push-button switch inside puts 12 V DC for 90 sec. on terminals 17/18
Power Supply	Ext. power supply 48 V DC, min. 2 A
Operating Conditions	Indoor, operating temperature 0 to +40 °C
Dimensions	108 x 61 x 90 mm/ 4.25 x 2.40 x 3.54 in (W x H x D)

MxSwitch	
Cross-sectional area of wires at the terminals	0.2 to 2.5 mm²/24 to 14 AWG
Connections	• 2 terminals for ext. power supply 48 V DC • 5 Ethernet connectors, 4 PoE+ (max. combined total load 75 W), 1 uplink (without PoE) • Terminals 1 to 4 (Port A) and 13 to 16 (Port D) loop through wire pairs 4/5 and 7/8 of network cables • 8 terminals for backbone pins (extension connector, reverse) • 2 terminals for power supply 12 V DC, 1 A • 2 terminals with 12 V DC, controlled by push-button switch (see «_Controls_»)

Declaration of Conformity: www.mobotix.com > Support > MxMedia Library > Certificates

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