



*Z8 Encore<sup>®</sup> 4K Series Microcontrollers*

***Z8F04328100KIT  
Development Kit***

**User Manual**

UM018501-1004

PRELIMINARY

**Z8F04328100KIT Development Kit  
User Manual**



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# *Introduction*

The Z8 Encore!<sup>®</sup> 4K Series MCU is the part of the line of ZiLOG micro-controller products.

The Z8 Encore! 4K Series Development Kit (Z8F04328100KIT) enables users to become familiar with the hardware and software tools available with this product. This kit consists of the 4KB version of the Z8 Encore! Development board that supports and presents the features of the Z8 Encore! 4K Series MCU. This kit allows users to begin writing application software and contains all supporting documents.

This manual acquaints users with the Z8 Encore! 4K Series Development Kit, and gives instructions on setting up and using the tools to start building designs and applications.

## **Kit Contents**

The Z8 Encore! 4K Series Development Kit contains the following:

### **Hardware**

- Z8 Encore! 4K Series Development board
- Smart Cable for PC to Z8 Encore! 4K Series Development board (DB9 to six-pin male)
- 5VDC power supply

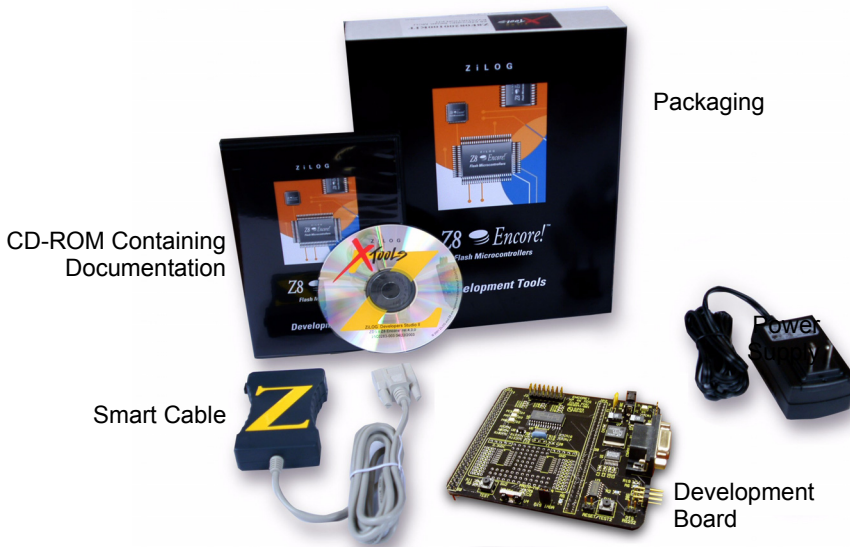


Figure 1. Z8 Encore! 4K Series Development Kit Contents

## Software (on CD-ROM)

- ZDS II- Z8 Encore!<sup>®</sup> IDE with ANSI C-Compiler
- Sample code
- Document browser
- Acrobat Reader install program

## Documentation

- Quick Start Guide
- Registration card
- Z8 Encore! 4K Series technical documentation (on CD-ROM)





- Development Kit User Manual
- ZDS II - IDE User Manual
- eZ8 CPU User Manual
- Application notes

The sample code is installed with ZDS II and resides in the <installation directory>\samples in the user's disk drive.

The documentation can be installed by the user with the DemoShield interface or can be viewed on the CD-ROM using the DemoShield menus and a PDF reader. A copy of the Acrobat installer is provided on the CD-ROM and can be installed from the DemoShield install screen. After installing the documentation on the user's system Windows Explorer can be used to select any document to be viewed with your favorite PDF file viewer.

## System/Software Requirements

IBM PC (or compatible computer) with the following minimum configurations:

### Supported Host System Configuration

- Win98 Second Edition, WinNT 4.0 Service Pack 6, Win2000 Service Pack 3, WinXP Professional Service Pack 1
- PentiumII/233MHz processor or higher up to Pentium IV, 2.8 GHz
- 96 MB RAM or more
- 25 MB hard disk space or more
- Super VGA video adapter
- CD-ROM
- One or more RS-232 communication ports

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# *Installation*

Follow the directions in the Quick Start Guide for software installation and setup of the Z8 Encore! 4K Series Development kit.

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# *Z8 Encore! 4K Series Development Board*

## Introduction

The Z8 Encore! 4K Series Development board is a development and prototyping board for the Z8 Encore! 4K Series MCU. The board provides customers with a tool to evaluate features of Z8 Encore! 4K Series MCU, and to start developing an application before building the hardware.

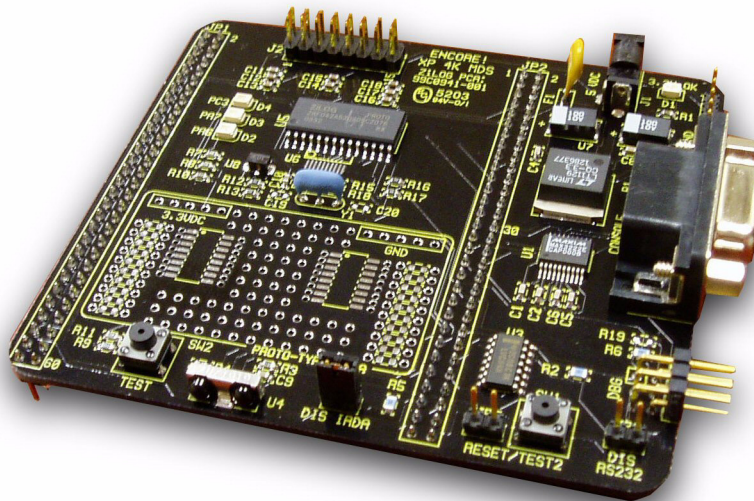


Figure 14. Z8 Encore! 4K Series Development Board



## Features

- Z8 Encore!<sup>®</sup> MCU (28-pin SOIC)
- 3 LEDs
- RS-232 interface
- IrDA transceiver
- Two pushbuttons, RESET and TEST
- 5 VDC power connector
- On-Chip Debugger interface
- Header for ADC input
- Prototyping area
- External interface connectors JP1 and JP2
- 2.7–3.6 V operating voltage with 5V-tolerant inputs

## MCU

The Z8 Encore! 4K Series MCU is member of a family of ZiLOG micro-controller products based upon the 8-bit eZ8 core CPU. The Flash in-circuit programming capability allows for faster development time and program changes in the field. The eZ8 core CPU is upward compatible with existing Z8<sup>®</sup> instructions. The rich peripheral set of the Z8 Encore! 4K Series makes it suitable for a variety of applications including motor control, security systems, home appliances, personal electronic devices, and sensors.

The Development board contains circuitry to support and present all the features of the Z8 Encore! 4K Series. The main features of the Z8 Encore! 4K Series are:



- eZ8 core CPU
- 4KB Flash memory with in-circuit programming capability
- 1KB register RAM
- 5-channel, 10-bit analog-to-digital converter (ADC)
- Full-duplex UART
- I<sup>2</sup>C interface (Master Mode only)
- Serial Peripheral Interface (SPI)
- Infrared Data Association (IrDA)-compliant infrared encoder/decoder
- Two 16-bit timers with capture, compare, and PWM capability
- Watch-Dog Timer (WDT) with internal RC oscillator
- Eleven (20-pin package) or nineteen (28-pin package) I/O pins
- Programmable priority interrupts
- On-Chip Debugger
- Voltage Brown-out Protection (VBO)
- Power-On Reset (POR)
- 2.7–3.6 V operating voltage with 5V-tolerant inputs
- Operating temperatures: 20° ±10° C

For further information on the Z8 Encore!<sup>®</sup> family of devices, consult the product specification, P/N PS0197, available for download from [www.zilog.com](http://www.zilog.com).

## UART with IrDA Endec

The Z8 Encore! 4K Series (component U5) contains a fully-functional, high-performance UART with Infrared Encoder/Decoder (ENDEC). The Infrared Endec is integrated with an on-chip UART allowing easy com-



munication between the Z8 Encore!<sup>®</sup> 4K Series and IrDA transceivers. Infrared communication provides secure, reliable, low-cost, point-to-point communication between PCs, PDAs, cell phones, printers and other infrared enabled devices.

## Power and Communication Interfaces

Table 1 provides jumper information concerning the shunt status, functions, devices and defaults affected of jumpers JP3 and JP4.

**Table 1. Jumpers JP3 and JP4**

Jumper	Status	Device Affected	Status	Default
JP3*	OUT	RS-232 interface	Enabled	X
JP3	IN	RS-232 interface	Disabled	
JP4*	OUT	IrDA interface	Enabled	
JP4	IN	IrDA interface	Disabled	X
JP5	OUT	U5 $\overline{\text{RESET}}$ / PD0	PD0 (GPIO)	X
JP5	IN	U5 $\overline{\text{RESET}}$ / PD0	$\overline{\text{RESET}}$ when SW1 pressed	
Note: * These jumpers must not be OUT at the same time				

## External Interface Headers JP1 and JP2

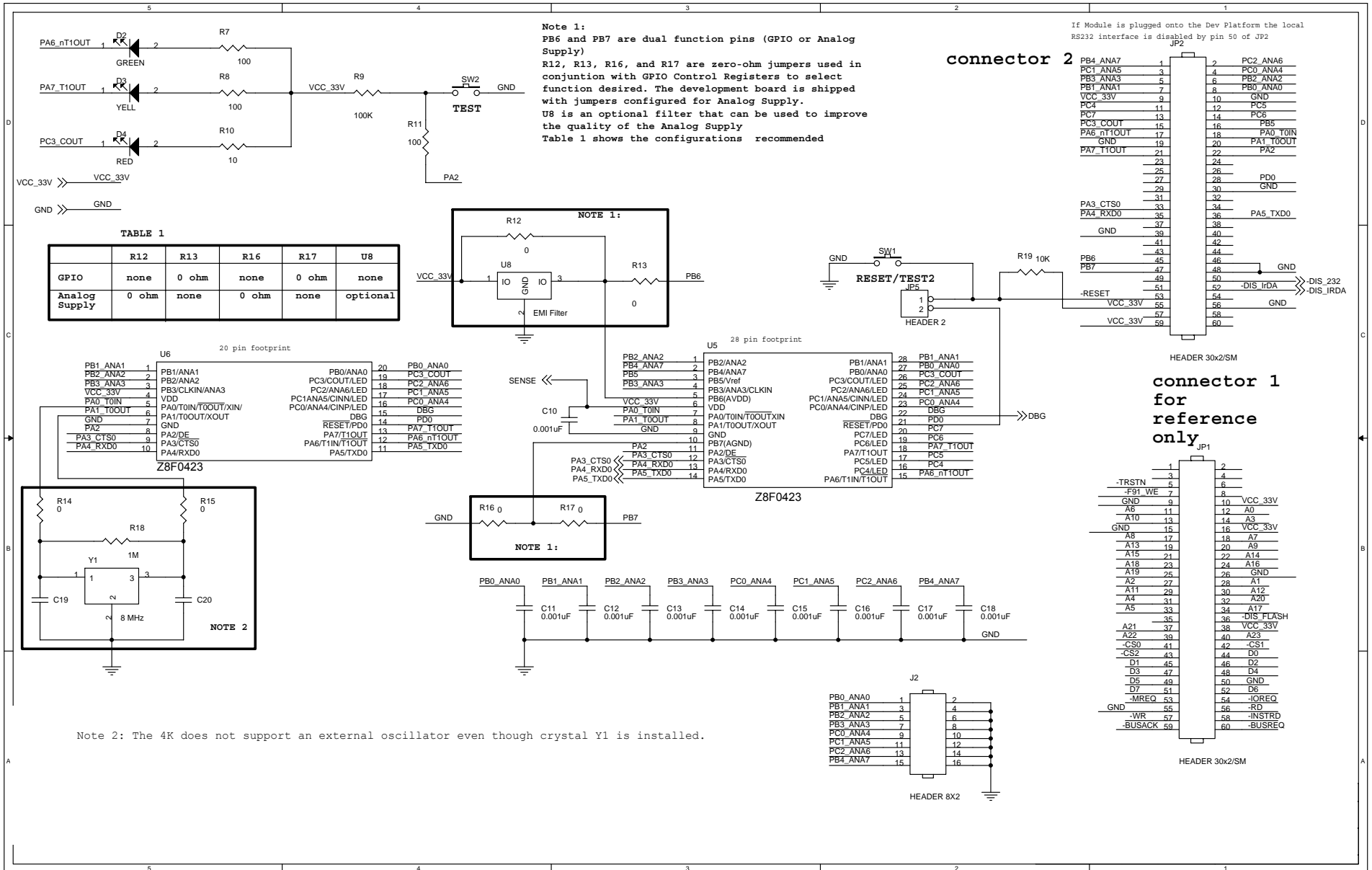
External interface headers JP1 and JP2 are shown in the schematic on page 11.



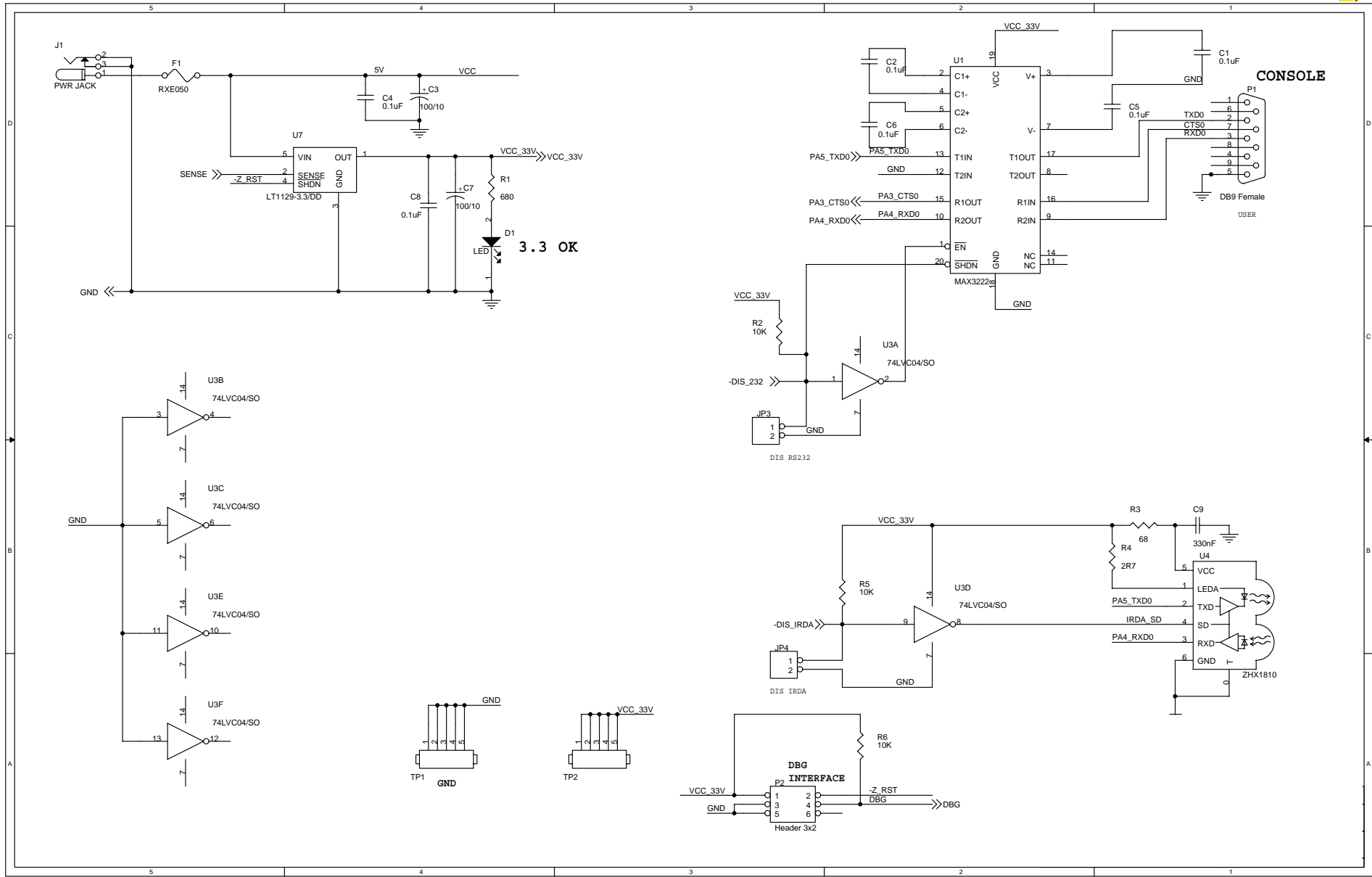
# Schematics



The following diagrams provide schematics for the Z8 Encore! 4K Series Development Board.



Schematic, Z8 Encore! 4K Series Development Board, Page 1 of 2



Schematic, Z8 Encore! 4K Series Development Board, Page 2 of 2



# Customer Feedback

If you note any inaccuracies while reading this User Manual, please copy and complete this form, then mail or fax it to ZiLOG (see *Return Information*, below). We also welcome your suggestions!

## Product Information

Z8F04328100KIT Development Kit
Serial # or Board Fab #/Rev. #
Software Version
Document Number
Host Computer Description/Type

## Customer Information

Name	Country
Company	Phone
Address	Fax
City/State/Zip	E-Mail

## Return Information

ZiLOG  
System Test/Customer Support  
532 Race Street  
San Jose, CA 95126  
Fax: (408) 558-8536  
[ZiLOG Customer Support](#)

## Problem Description or Suggestion

Provide a complete description of the problem or your suggestion. If you are reporting a specific problem, include all steps leading up to the occurrence of the problem. Attach additional pages as necessary.

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