



Parallax Basic Stamp II Microcontroller: LED 3x3 Array

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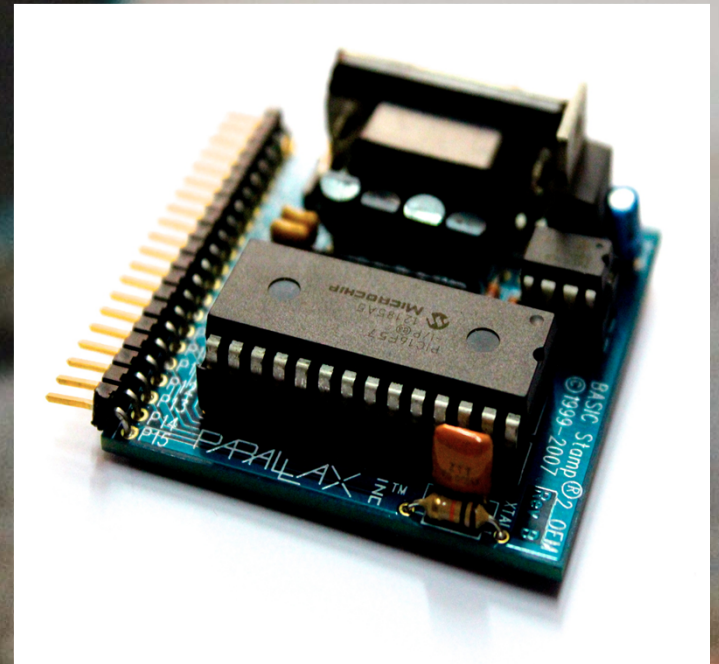


OVERVIEW

- **What is a Basic Stamp II Microcontroller?**
- **BSII Software & Hardware**
- **Benefits of BSII**
- **Project Explanation**
- **Demonstration**

What is a Basic Stamp II Microcontroller?

- **Made by Parallax, Inc.**
- **Single board computer**
- **Serves as the 'brains' inside of electronics projects and applications**
- **Controls monitor timers, keypads, motors, sensors, switches, relays, lights, etc.**
- **Runs on PBASIC language**





BSII Software & Hardware

Processor Speed

20 MHz

Program Execution Speed

**Approx. 4,000
instruction/sec**

Ram Size

32 Bytes (6 I/O, 26 VAR)

I/O Pins

16 (plus 2, serial port)

Voltage Requirements

5-15 VDC

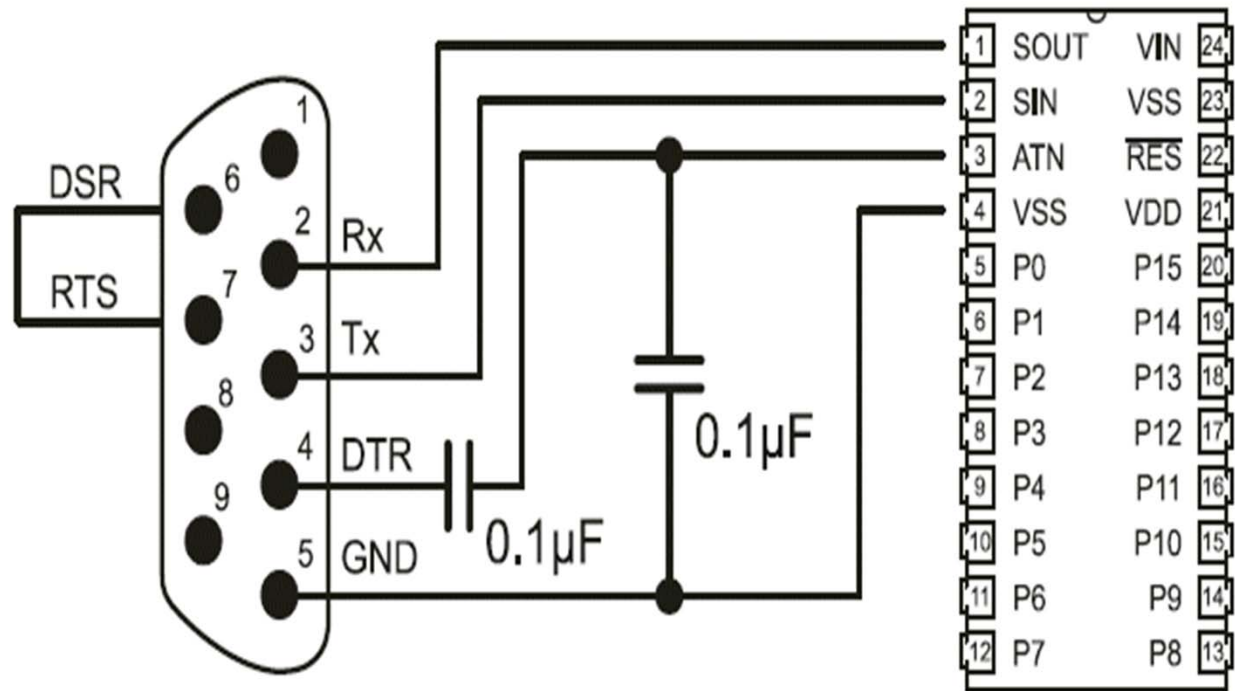
PBASIC Commands

42

Size

1.2" x 0.6" x 0.4"

BSII PIN LAYOUT

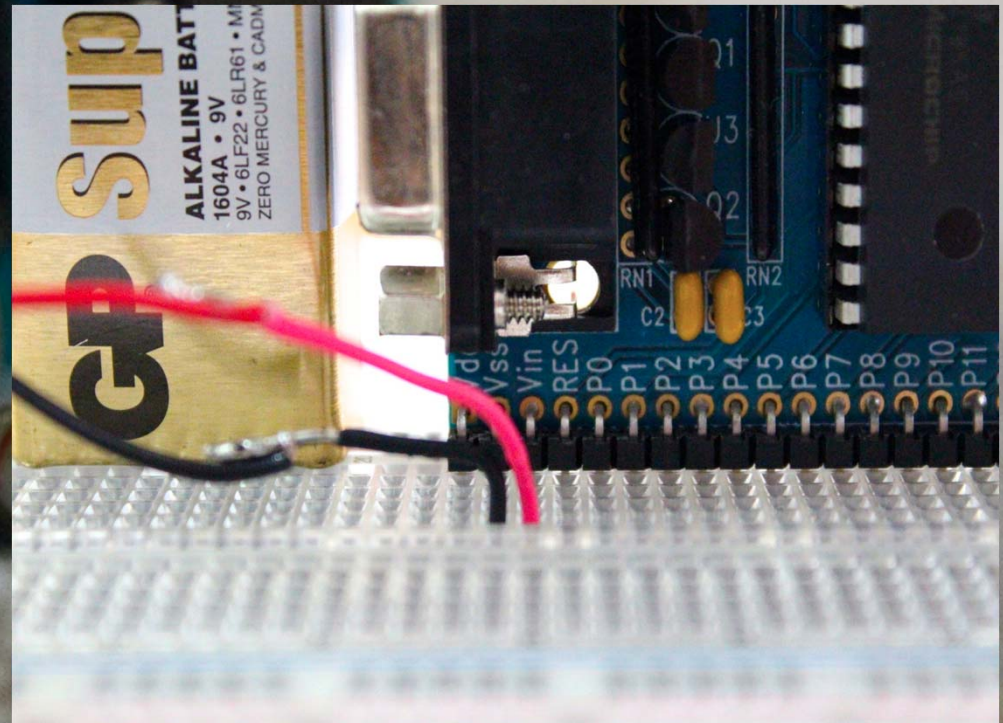


PC Serial Port

BS2 Family
Module

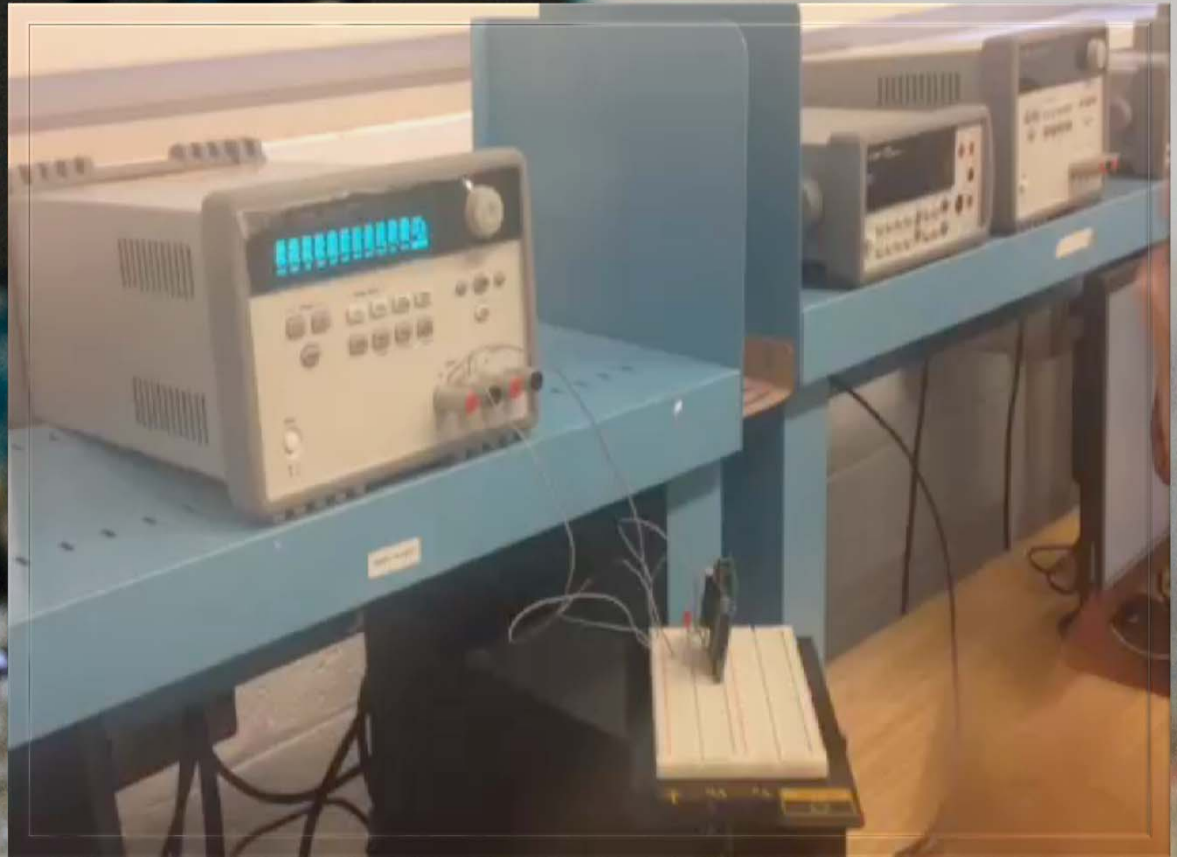
Benefits of BSII

- **Six variations**
 - **BS2e, BS2sx, BS2p24, BS2p40, BS2pe, BS2px**
- **More memory**
- **Easy to comprehend**
- **Higher execution speed**
- **Extra I/O Pins**
- **Relatively inexpensive**
- **More advanced commands**
- **Wide support base of free application resources**



PROJECT EXPLANATION

- **Week 1: Research**
- **Week 2: 1 flashing LED**
- **Week 3: 4 LEDs flashing**
- **Week 4: 3x3 LED Array w/ Ripple Effect forward & backward**
- **Use of first three I/O pins only**



PROJECT EXPLANATION

```
' {$STAMP BS2}
```

```
DIRA=%1111 ' make lowest four bits outputs
```

```
DIRC=%0000 ' makes bits 8, 9, 10 and 11 inputs
```

```
DIRD=%0000 ' make highest four bits inputs
```

```
TOP:
```

```
OUTA=%0000 ' turn off all LEDs
```

```
PAUSE 1500
```

```
OUT0=1 ' turn on LED0
```

```
PAUSE 800
```

```
OUT1=1 ' turn on LED1
```

```
PAUSE 800
```

```
OUT2=1 ' LED2
```

```
PAUSE 1500 ' pause a bit longer
```

```
OUTA=%0000
```

```
PAUSE 1500
```

```
OUT2=1
```

```
PAUSE 800
```

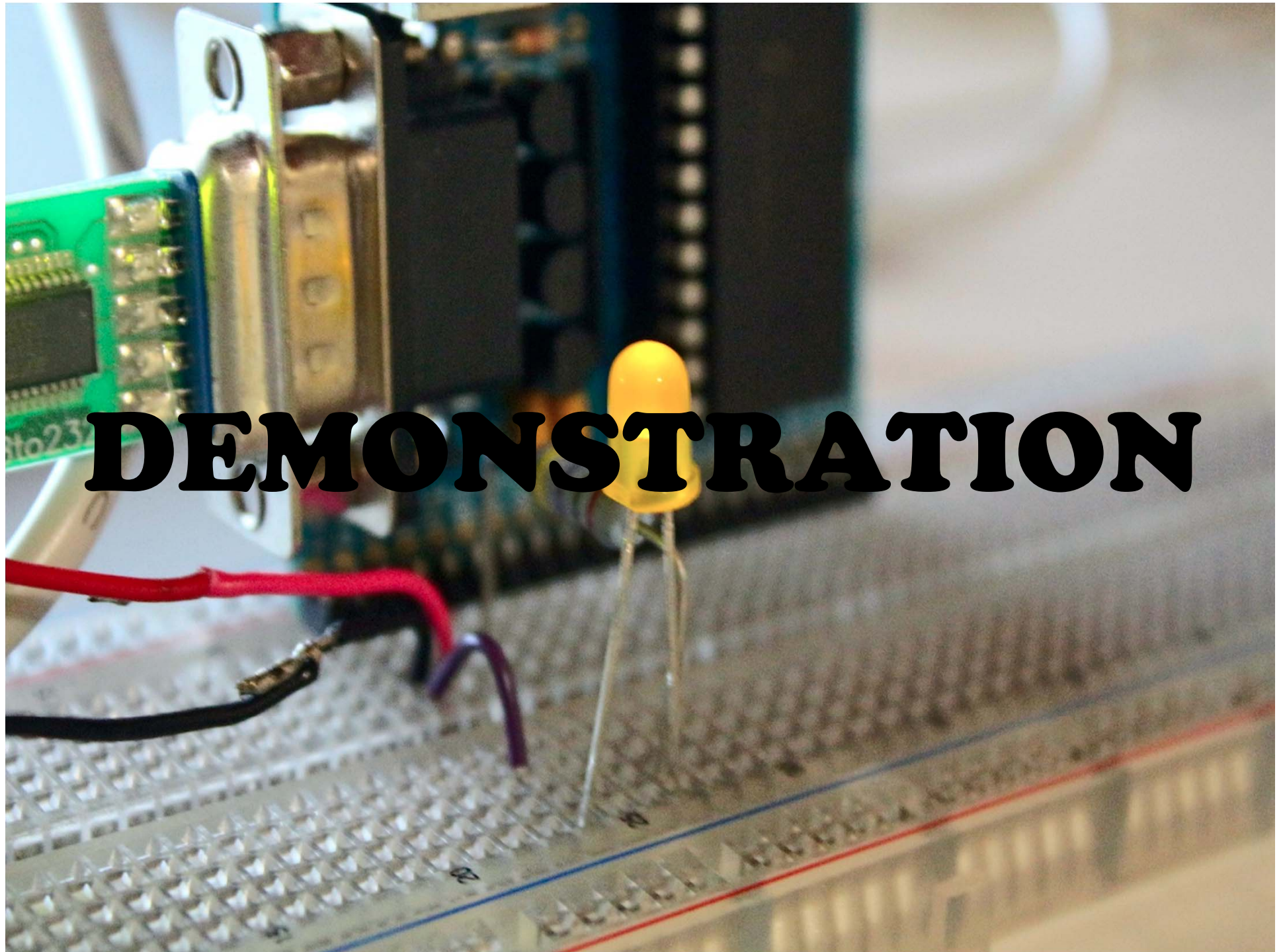
```
OUT1=1
```

```
PAUSE 800
```

```
OUT0=1
```

```
PAUSE 1500
```

```
GOTO TOP
```

DEMONSTRATION