stamp.peripheral.io.ADC

Class ADC0831

```
java.lang.Object
  |
  +--stamp.peripheral.io.ADC.AtoD
        |
        +--stamp.peripheral.io.ADC.ADC0831
```

public class **ADC0831**
extends AtoD

This class encapsulates the capabilities of the 8 bit ADC0831 3-wire A to D.

```
There are 4 types of setup's this class will handle:
Setup A: The simplest, tie vRef to +5 V and -Vin to ground.
         Use default bit values 19 & -30720
Setup B: Set vRef to the max voltage of the device being measured and -Vin to
         ground.  You will need to calculate new bit values, since the range
         of measurement will be smaller. This will make the bit value smaller
         and more accurate.
Setup C: Set vRef to max voltage of the device being measured and -Vin to the
         negative terminal of the device being measured. The ADC0831 will
         measure the voltage between -Vin and +Vin.
         You will need to calulate a new bit value.
Setup D: Tie vRef to +5 and -Vin to the negative terminal of the device being
         measured the ADC0831 will measure the voltage between -Vin and +Vin.
         You will need to calulate a new bit value as well as a new offset.


Revision History:
Ver 1.0 - 12/12/02: Initial release of class submitted to Parallax Inc.
                    by customer Tim Constable of Boston, MA
                    Evaluated and modified by Steve Dill of Parallax Inc.
```

Field Summary

Fields inherited from class stamp.peripheral.io.ADC.AtoD
lastRaw, readSize, resolution

Constructor Summary

	ADC0831(int dataPin, int clockPin, int enablePin) Initialize the bus and A to D Chip.

Method Summary

int	**read**(int channel) Read value from A to D chip.
void	**setBitValue**(int bitHigh, int bitLow, int offset) Set/change bit and offset value.

Methods inherited from class stamp.peripheral.io.ADC.AtoD
calcMV, calcTemp, lastMV, lastRaw, lastVf, readSmooth

Methods inherited from class java.lang.Object
equals

Constructor Detail

ADC0831

```
public ADC0831(int dataPin,
               int clockPin,
               int enablePin)
```

Initialize the bus and A to D Chip.

Parameters:

`enablePin` - ADC0831 pin#1
`dataPin` - ADC0831 pin#6
`clockPin` - ADC0831 pin#7

Method Detail

setBitValue

```
public void setBitValue(int bitHigh,
                        int bitLow,
                        int offset)
```

Set/change bit and offset value.

Use this method when Vref is not tied to +5.

Offset is needed when -Vin is not tied to ground.

For specific information on how to calculate the bit value see the AtoD abstract class's method setBitValue, or read Parallax Inc's application note #006.

Overrides:

`setBitValue` in class `AtoD`

Parameters:

`bitHigh` - High portion of the bit value
`bitLow` - Low portion of the bit value
`offset` - Offset for bit value, when -Vin is not tied to ground

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read

```
public int read(int channel)
```

Read value from A to D chip.

Only one channel is available on the ADC0831

Specified by:

`read` in class `AtoD`

Parameters:

`channel` - dummy value for ADC0831 to conform to base class

Returns:

raw value from chip
