Atmel AVR1923: XMEGA-A3BU Xplained Hardware User Guide

8-bit Atmel Microcontrollers

Application Note

Features

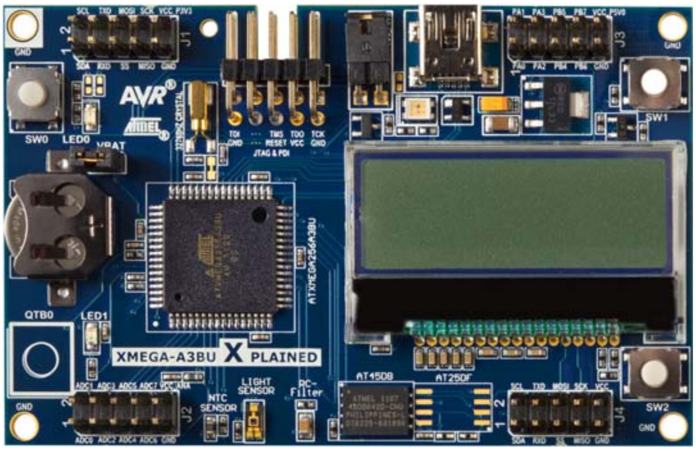
- Atmel® AVR® ATxmega256A3BU microcontroller
- FSTN LCD display with 128x32 pixels resolution
- Battery backup
- Analog sensors
  - Ambient light sensor
  - Temperature sensor
- Analog filter
- Digital I/O
  - Three mechanical buttons
  - Two user LEDs, one power LED and one status LED
  - Four expansion headers
- Touch
  - One Atmel AVR QTouch® button
- Memory
  - Atmel AVR AT45DB642D DataFlash® serial flash
- Footprints for external memory
  - Atmel AVR AT25DF series industry standard serial flash

1 Introduction

The Atmel AVR XMEGA-A3BU Xplained evaluation kit is a hardware platform to evaluate the Atmel ATxmega256A3BU microcontroller.

The kit offers a large range of features that enables the Atmel AVR XMEGA® user to get started using XMEGA peripherals right away and understand how to integrate the XMEGA device in their own design.

Figure 1-1. XMEGA-A3BU Xplained evaluation kit.



Rev. 8394B-AVR-02/12

2 Related items

The following list contains links to the most relevant documents, software and tools for the Atmel AVR XMEGA-A3BU Xplained:

Atmel AVR Xplained products
Xplained is a series of small-sized and easy-to-use evaluation kits for 8- and 32-bit AVR microcontrollers. It consists of a series of low cost MCU boards for evaluation and demonstration of feature and capabilities of different MCU families.

Atmel Xplained USB CDC driver
The Xplained USB CDC driver file supports both 32- and 64-bit versions of Windows® XP and Windows 7. Driver installs are not necessary on Linux® operating systems.

XMEGA-A3BU Xplained schematics
Package containing schematics, BOM, assembly drawings, 3D plots, layer plots…

AVR1923: XMEGA-A3BU Xplained Hardware Users Guide
This document.

AVR1935: XMEGA-A3BU Xplained Getting Started Guide
This application note is a getting started guide for the XMEGA-A3BU Xplained.

AVR1934: XMEGA-A3BU Xplained Software User Guide
This application note is a user guide for the XMEGA-A3BU Xplained demo software.

AVR1916: XMEGA USB DFU Boot Loaders
This application note is a user guide for the XMEGA USB DFU boot loaders.

Atmel AVR Studio® 5
AVR Studio 5 is a free Atmel IDE for development of C/C++ and assembler code for Atmel microcontrollers.

Atmel FLIP (Flexible In-system Programmer)
BatchISP (FLIP) is a command line tool for programming the flash and EEPROM memories of the AVR and is part of the FLIP installation. It can be used to communicate with the preprogrammed USB DFU boot loader.

Atmel JTAGICE 3
JTAGICE 3 is a mid-range development tool for Atmel 8- and 32-bit AVR microcontrollers with on-chip debugging for source level symbolic debugging, NanoTrace (if supported by the device) and device programming.

Atmel AVR JTAGICE mkII
AVR JTAGICE mkII is a mid-range development tool for Atmel 8- and 32-bit AVR devices with on-chip debugging for source level symbolic debugging, NanoTrace (if supported by the device), and device programming (superseded by JTAGICE 3).

Atmel AVR ONE!
AVR ONE! is a professional development tool for all Atmel 8- and 32-bit AVR devices with on-chip debug capability. It is used for source level symbolic debugging, program trace, and device programming. The AVR ONE! supports the complete development cycle and is the fastest debugging tool offered from Atmel.

Atmel AVR Dragon™
AVR Dragon sets a new standard for low cost development tools for 8- and 32-bit AVR devices with on-chip debug (OCD) capability.

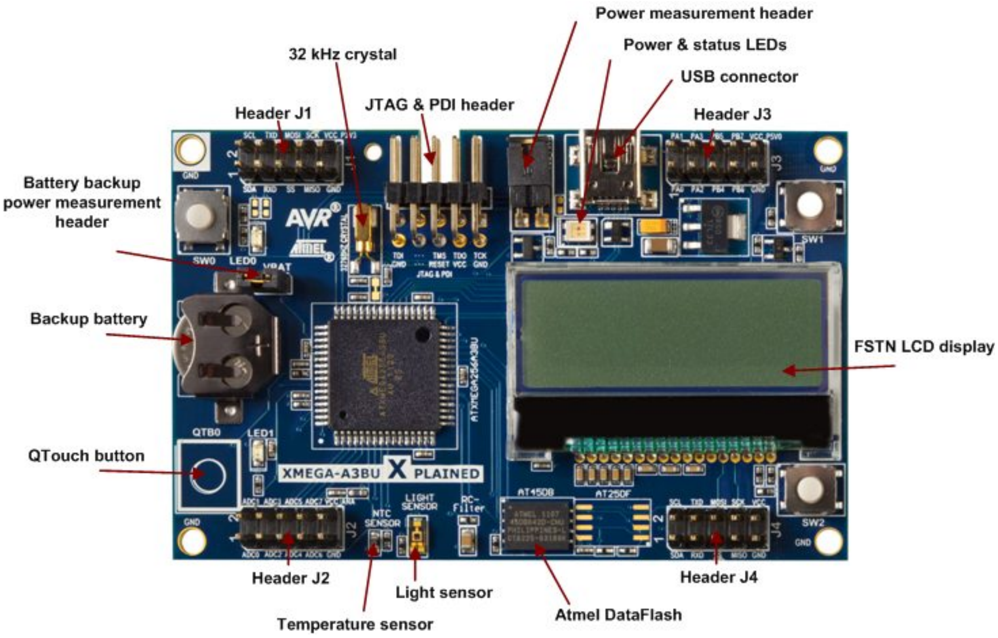
IAR Embedded Workbench® for Atmel AVR

IAR™ Embedded Workbench is a commercial C/C++ compiler that is available for 8-bit AVR. There is a 30 day evaluation version as well as a 4k (code size limited) kick-start version available from their website.

3 General information

The Atmel AVR XMEGA-A3BU Xplained kit is intended to demonstrate the Atmel AVR ATxmega256A3BU microcontroller. Figure 3-1 shows the available feature on the board.

Figure 3-1. Overview of the XMEGA A3BU Xplained kit.



3.1 Preprogrammed firmware

The ATxmega256A3BU on the XMEGA-A3BU Xplained is pre-programmed with a boot loader and a default firmware. The detailed description of the software is available in the XMEGA-A3BU Xplained Software User Guide (http://atmel.com/dyn/resources/prod_documents/doc8413.pdf).

3.2 Power supply

The kit needs an external power supply that can deliver 5V and up to 500mA. The actual current requirement for the board is much less than 500mA but in order to be able to power optional expansion boards this margin is recommended.

The power can be applied to the board either via the USB connector or on pin 10 on the header J3. The USB connector is the preferred input because it is then possible to connect expansion boards on top of the J3 header.

The 5V (USB supply voltage) is regulated down to 3.3V with an onboard LDO regulator, which provides power to the entire board. Expansion top boards that require 5V will get this from the header J3 pin 10.

3.3 Measuring the Atmel AVR XMEGA power consumption

As part of an evaluation of the ATxmega256A3BU, it can be of interest to measure its power consumption. Because the XMEGA has a separate power plane (VCC_MCU_P3V3) on this board it is possible to measure the current consumption by measuring the current that is flowing into this plane. The VCC_MCU_P3V3 plane is connected via a jumper to the main power plane (VCC_P3V3) and by replacing the jumper with an amperemeter it is possible to determine the current consumption. To locate the power measurement header, please refer to Figure 3-1.

WARNING *Do not power the board without having the jumper or an amperemeter mounted since this can cause latch-up of the Atmel AVR ATxmega256A3BU due to current flow into the I/O pins.*

3.4 Programming the kit

The kit can be programmed either from an external programming tool or through an USB boot loader which is pre-programmed on the device.

The boot loader is evoked by pushing the push button (SW0) during power-on, that is push and hold the button and hence connect an USB cable to the kit. Programming can be performed through the DFU programmer FLIP.

How a programmer can be connected to the kit is described in Section 4.1.

4 Connectors

The Atmel AVR XMEGA-A3BU Xplained kit has five 10-pins, 100mil headers. One header is used for programming the Atmel AVR ATxmega256A3BU, and the others are used to access spare analog and digital pins on the Atmel AVR XMEGA (expansion headers).

4.1 Programming headers

The XMEGA can be programmed and debugged by connecting an external programming/debugging tool to the "JTAG & PDI" header shown in Figure 3-1. The header has a standard pin-out and therefore tools like the Atmel JTAGICE 3 or Atmel AVR ONE! can be connected to the header.

Due to physical differences of the Atmel AVR JTAGICE mkII and AVR ONE! probes, the PCB has an opening below the JTAG and PDI header. This is to make room for the orientation tap on the JTAGICE mkII probe.

The grey female 10-pin header on JTAGICE mkII has to be used when connecting to the kit. The opening in the board is made to fit the orientation tab on the header. When using PDI with the JTAGICE mkII it is necessary to use the squid cable.

A standoff adapter (no. 1) is needed when using AVR ONE!

Pin 1 on the JTAG header is at the top right corner and is marked with a square pad.

Table 4-1. XMEGA programming and debugging interface – JTAG and PDI.

Pin on programming header	JTAG [1]	PDI [2]
1	TCK	-
2	GND	GND [3]
3	TDO	DATA
4	VCC	VCC
5	TMS	-
6	nSRST	CLK
7	-	-
8	-	-
9	TDI	-
10	GND	GND [3]

Notes:
1. Standard pin-out for JTAGICE mkII and other Atmel programming tools.
2. Requires adapter (squid cable) to connect a JTAGICE mkII.
3. It is only required to connect to one GND pin.

Because JTAG TDO and PDI DATA are connected on the PCB for this kit, JTAG must be disabled on the device in order to use PDI. The reason for this is that when JTAG is enabled it will enable a pull-up internally on TDO which interferes with the PDI initialization sequence.

This will also be an issue when the application on the device uses the JTAG_TDO pin. Nevertheless it is possible to use the pin if the TDO signal is disconnected from the PDI DATA signal by cutting a strap (the cut-strap J203 is on the back side of the board and marked with a text that describes its function) on the back side of the PCB.

This however will disable the JTAG interface until the connection is reestablished by, for example soldering a bridge on the cut-strap.

4.2 I/O expansion headers

The Atmel AVR XMEGA-A3BU Xplained headers J1, J2, J3, and J4 offer access to the I/O of the microcontroller in order to expand the board, for example by mounting a top module onto the board.

The header J1 offers digital communication interfaces like UART, TWI and SPI. Table 4-2 shows how the Atmel AVR XMEGA is connected to the header.

NOTE When using TWI please note that no pull-ups are mounted on the board from the factory, so it is required to either enable the internal pull-ups of the device or to mount the external pull-ups on the available footprints (R200 and R201). Please refer to the assembly drawing in the design documentation for the location of these footprints.

Table 4-2. Expansion header J1.

Pin on J1	Name on J1	XMEGA pin	Shared with onboard functionality
1	SDA	PC0	-
2	SCL	PC1	-
3	RXD	PC2	-
4	TXD	PC3	-
5	SS	PC4	-
6	MOSI	PC5	-
7	MISO	PC6	-
8	SCK	PC7	-
9	GND	-	-
10	VCC_P3V3	-	-

The header J2 is connected to analog ports of the XMEGA as shown in Table 4-3.

Table 4-3. Expansion header J2.

Pin on J2	Name on J2	XMEGA pin	Shared with onboard functionality
1	ADC0	PB0	-
2	ADC1	PB1	-
3	ADC2	PB2	-
4	ADC3	PB3	-
5	ADC4	PA4	-
6	ADC5	PA5	-
7	ADC6	PA6	-
8	ADC7	PA7	-
9	GND	-	-
10	VCC_P3V3	-	-

The I/O connected to the expansion header J3 is shared with on-board features as sensors and JTAG interface. Therefore care must be taken when J3 is used for expansions. Table 4-4 shows the mapping of the XMEGA I/O to J3.

Table 4-4. Expansion header J3.

Pin on J3	Name on J3	XMEGA pin	Shared with onboard functionality
1	PA0	PA0	Light sensor [(1)]
2	PA1	PA1	Temperature sensor [(1)]
3	PA2	PA2	Filter output [(1)]
4	PA3	PA3	Display reset
5	PB4	PB4	JTAG TMS
6	PB5	PB5	JTAG TDI
7	PB6	PB6	JTAG TCK
8	PB7	PB7	JTAG TDO
9	GND	-	-
10	VCC_P5V0	-	-

Note: 1. Can be disconnected from onboard functionality by cut-straps.

The header J4 offers digital communication interfaces such as UART and TWI but care must be taken because some pins are also connected to on-board peripherals.

Table 4-5. Expansion header J4.

Pin on J4	Name on J4	XMEGA pin	Shared with onboard functionality
1	SDA	PE0	-
2	SCL	PE1	-
3	RXD	PE2	-
4	TXD	PE3	-
5	SS	PD0	Display register select [(1)]
6	MOSI	PD3	Serial flash MOSI
7	MISO	PD2	Display and serial flash MISO input
8	SCK	PD1	Display and serial flash clock input
9	GND	-	-
10	VCC_P3V3	-	-

Note: 1. Can be disconnected from onboard functionality by cut-strap (J204).

5 Peripherals

5.1 Serial flash

The Atmel AVR XMEGA-A3BU Xplained has an external Atmel AVR AT45DB642D DataFlash device mounted. A footprint is also available for adding an industrial standard serial flash like the AT25 series from Atmel. Compatible serial flash devices for both footprints are listed in Table 5-2 and the connection to the MCU is shown in Table 5-1.

The footprints share the same SPI lines including the chip select, and therefore it is not possible to mount devices on both footprints at the same time.

Table 5-1. Serial flash connection.

Pin on XMEGA	Serial flash
PD1	SCK
PD3	MOSI
PD2	MISO
PF4	SS

Table 5-2. Compatible devices for the footprints.

Atmel AVR AT45DB	Atmel AVR AT25DF
AT45DB64D2-CNU (mounted)	AT25DF641A-SH
AT45DB321D-MWU	AT25DF321A-SH
AT45DB161D-SS	AT25DF161-SH
AT45DB081D-SS	AT25DF081-SSH
AT45DB041D-SS	AT25DF021-SSH
AT45DB021D-SS	
AT45DB011D-SS	

5.2 Atmel AVR QTouch button

The XMEGA-A3BU Xplained kit has one Atmel QTouch button and the connection to the Atmel AVR XMEGA is shown in Table 5-3. The QTouch sensor, a copper fill, is located on the second layer of the board (same as GND layer). The sensor is shielded by the third layer (VCC layer) and therefore the sensor is not affected by any touches from the back side of the board.

Table 5-3. QTouch button connection.

Pin on XMEGA	QButton
PF6	SNS
PF7	SNSK

5.3 Battery backup system

The battery backup system backs up the RTC of the XMEGA. It consists of a coin cell battery, a battery holder and a jumper that can be used to disconnect the battery from the XMEGA. A manganese dioxide lithium battery (CR1220) from Panasonic with a nominal voltage of 3V and nominal capacity of 35mAh is used in this design. In order to measure the backup system power consumption a header with a mounted jumper is available. The header is shown in Figure 3-1 and is also marked with "VBAT" on the silkscreen. The jumper can also be used to simulate battery insertion and removal without actually removing the battery from the holder.

5.4 Mechanical buttons

Three mechanical buttons are connected to Atmel AVR XMEGA. All buttons have external pull-ups so there is no need to activate internal pull-ups in order to use them. When a button is pressed it will drive the I/O line to GND.

Table 5-4. Mechanical button connection.

Pin on XMEGA	Silkscreen text on PCB and designator in the schematics
PE5	SW0
PF1	SW1
PF2	SW2

5.5 LEDs

There are four LEDs available on the board that can be turned on and off. Two yellow LEDs, one green LED (power indicator LED), and one red LED (status LED). The green and red LEDs are inside the same package and therefore the colors can be mixed to orange when both are activated. The yellow LEDs and the red LED can be activated by driving the connected I/O line to GND. The green LED is controlled via a FET and is by default on when the board is powered. However, this power indicator LED can also be turned off by driving the gate of the FET to GND.

Table 5-5. LED connections.

Pin on XMEGA	LED
PR0	Yellow LED0
PR1	Yellow LED1
PD4	Red status LED
PD5	Green power indicator LED

5.6 FSTN LCD display

The NHD-C12832A1Z-FSW-FBW-3V3 is a FSTN LCD display and has a resolution of 128 x 32 pixels. In the design the display is connected via a SPI based interface. Detailed information about the display can be obtained from the display datasheet (NHD-C12832A1Z-FSW-FBW-3V3 from New Haven Displays) and from the display controller datasheet (ST7565R from Sitronix).

The external circuitry of the display is configured to boost the 3.3V supply voltage by a factor of 3 to ~10V. However, the typical supply voltage of the display (contrast control) is 6V and therefore the boosted supply must be adjusted, and this must be done by software when the display is configured. The following formula is used when the voltage is adjusted by software:

$$V_0 = \left(1 + \frac{Rb}{Ra}\right) \cdot \left(1 - \frac{\alpha}{162}\right) \cdot V_{REG}$$

V_0: Display voltage (contrast control).

$\left(1+\frac{Rb}{Ra}\right)$: Voltage regulator internal resistance ratio.

V_{REG}: Internal fixed voltage supply typically 2.1V.

α: Electronic volume level, 1 to 64 are possible values:

The recommended configuration for the display is to use $\left(1+\frac{Rb}{Ra}\right)=3.5$ because it will center the adjustable voltage range at 6V which is the typical setting for this display. Recommended values for α are listed in Table 5-6.

Table 5-6. Recommended electronic volume configuration.

Electronic volume register value (α)	Display supply voltage V_0 [V]	Contrast
20	6.44	Too strong contrast
21	6.40	
22	6.35	
23	6.31	
24	6.26	
25	6.22	
26	6.17	
27	6.13	
28	6.08	
29	6.03	
30	5.99	Optimal setting
31	5.94	
32	5.90	
33	5.85	
34	5.81	
35	5.76	
36	5.72	
37	5.67	
38	5.63	
39	5.58	
40	5.54	Very weak contrast

The display backlight is controlled by a FET which is by default in an off state but it is possible to turn the backlight on with the Atmel AVR XMEGA by driving the gate of the FET high. On the XMEGA pin PE4 is connected to the gate of the FET. The pin PE4 is also an output of an on-chip timer module and because of that it is easy to do dimming of the backlight by using PWM.

5.7 Analog I/O

5.7.1 Temperature sensor

The temperature sensor circuitry consists of a serial connection of a normal and a NTC resistor. The NTC sensor is from Murata and some part details are shown in Table 5-7, more information can be obtained from the manufacturer's website.

Table 5-7. NTC characteristics.

Global part number	NCP18WF104J03RB
Resistance (25℃)	100kΩ ±5%
B-Constant (25/50℃) (reference value)	4250K ±2%
B-Constant (25/80℃) (reference value)	4303K
B-Constant (25/85℃) (reference value)	4311K
B-Constant (25/100℃) (reference value)	4334K

Table 5-8 shows the temperature vs. resistance characteristic. The values are available from Murata in the datasheet of the NTC.

Table 5-8. Resistance vs. temperature (from Murata).

Temp. [°C]	NTC resistance [kΩ]	Temp. [°C]	NTC resistance [kΩ]	Temp. [°C]	NTC resistance [kΩ]	Temp. [°C]	NTC resistance [kΩ]
-30	2197.225	0	357.012	30	79.222	60	22.224
-29	2055.558	1	338.006	31	75.675	61	21.374
-28	1923.932	2	320.122	32	72.306	62	20.561
-27	1801.573	3	303.287	33	69.104	63	19.782
-26	1687.773	4	287.434	34	66.061	64	19.036
-25	1581.881	5	272.500	35	63.167	65	18.323
-24	1483.100	6	258.426	36	60.415	66	17.640
-23	1391.113	7	245.160	37	57.797	67	16.986
-22	1305.413	8	232.649	38	55.306	68	16.360
-21	1225.531	9	220.847	39	52.934	69	15.760
-20	1151.037	10	209.710	40	50.677	70	15.184
-19	1081.535	11	199.196	41	48.528	71	14.631
-18	1016.661	12	189.268	42	46.482	72	14.101
-17	956.080	13	179.890	43	44.533	73	13.592
-16	899.481	14	171.028	44	42.675	74	13.104
-15	846.579	15	162.651	45	40.904	75	12.635
-14	797.111	16	154.726	46	39.213	76	12.187
-13	750.834	17	147.232	47	37.601	77	11.757
-12	707.524	18	140.142	48	36.063	78	11.344
-11	666.972	19	133.432	49	34.595	79	10.947
-10	628.988	20	127.080	50	33.195	80	10.566
-9	593.342	21	121.066	51	31.859	81	10.200
-8	559.931	22	115.368	52	30.584	82	9.848

Temp. [°C]	NTC resistance [kΩ]	Temp. [°C]	NTC resistance [kΩ]	Temp. [°C]	NTC resistance [kΩ]	Temp. [°C]	NTC resistance [kΩ]
-7	528.602	23	109.970	53	29.366	83	9.510
-6	499.212	24	104.852	54	28.203	84	9.185
-5	471.632	25	100.000	55	27.091	85	8.873
-4	445.772	26	95.398	56	26.028	86	8.572
-3	421.480	27	91.032	57	25.013	87	8.283
-2	398.652	28	86.889	58	24.042	88	8.006
-1	377.193	29	82.956	59	23.113	89	7.738

Two common approximations can be used to model the temperature vs. resistance characteristic; these are the B parameter and the Steinhart-Hart equations. Coefficients for both formulas can be calculated from Table 5-8.

When the internal reference VCC/1.6 is used and the ADC is measuring in signed single ended mode the codes in Table 5-9 can be read from the ADC at the various temperatures. The calculation is based on Table 5-8.

Table 5-9. ADC codes vs. temperature (signed single ended mode with internal VCC/1.6 reference).

ADC input [V]	Temp. [°C]	ADC codes	ADC input [V]	Temp. [°C]	ADC codes
2.076	-14	2047	0.347	38	345
2.030	-13	2014	0.334	39	332
1.983	-12	1968	0.321	40	319
1.936	-11	1921	0.309	41	307
1.889	-10	1875	0.297	42	295
1.841	-9	1828	0.286	43	283
1.794	-8	1781	0.275	44	273
1.747	-7	1734	0.264	45	262
1.700	-6	1687	0.254	46	252
1.653	-5	1640	0.244	47	243
1.606	-4	1594	0.235	48	233
1.560	-3	1548	0.226	49	225
1.514	-2	1503	0.218	50	216
1.469	-1	1458	0.209	51	208
1.425	0	1414	0.202	52	200
1.380	1	1370	0.194	53	193
1.337	2	1327	0.187	54	185
1.294	3	1285	0.180	55	178
1.252	4	1243	0.173	56	172
1.211	5	1202	0.167	57	165
1.171	6	1162	0.161	58	159
1.131	7	1123	0.155	59	154
1.093	8	1084	0.149	60	148

ADC input [V]	Temp. [°C]	ADC codes	ADC input [V]	Temp. [°C]	ADC codes
1.055	9	1047	0.144	61	142
1.018	10	1010	0.138	62	137
0.982	11	975	0.133	63	132
0.947	12	940	0.128	64	127
0.913	13	907	0.124	65	123
0.880	14	874	0.119	66	118
0.848	15	842	0.115	67	114
0.817	16	811	0.111	68	110
0.787	17	781	0.107	69	106
0.758	18	752	0.103	70	102
0.730	19	724	0.100	71	99
0.702	20	697	0.096	72	95
0.676	21	671	0.093	73	92
0.650	22	645	0.090	74	89
0.626	23	621	0.086	75	86
0.602	24	597	0.083	76	83
0.579	25	575	0.081	77	80
0.557	26	553	0.078	78	77
0.535	27	531	0.075	79	75
0.515	28	511	0.073	80	72
0.495	29	491	0.070	81	70
0.476	30	472	0.068	82	67
0.458	31	454	0.065	83	65
0.440	32	437	0.063	84	63
0.423	33	420	0.061	85	61
0.407	34	404	0.059	86	59
0.391	35	388	0.057	87	57
0.376	36	373	0.055	88	55
0.361	37	359	0.053	89	53

5.7.2 Ambient light sensor

The ambient light sensor TEMT6000X01 from Vishay Semiconductors is sensitive to visible light much like the human eye. The measurement circuitry is configured to measure the illuminance from ~10 to ~900lx when the internal VCC/1.6 reference is used.

The data in Table 5-10 which shows the relationship between illuminance and output voltage of the sensor circuitry is generated based on the symbols and formulas in Table 5-9.

Table 5-10. Symbol description for illuminance calculation.

Symbols	Description
ICA	Calibrated sensor responsivity at 100lx. This is 50µA according to the sensor datasheet
E_V	Illuminance
I	Current through the sensor
U	Output voltage of the sensor circuitry that is provided to the ADC
R	Series resistor of the sensor circuitry. 4.7kΩ has been chosen in this design
$E_V = 100 \times I / ICA$	Illuminance is calculated based on the relation of the actual current through the sensor to the calibrated value at 100lx
$I = U / R$	Since the ADC measures the voltage across the series resistor of the sensor circuitry it is necessary to calculate the voltage based on the current
$U = (E_V \times R \times ICA) / 100$	Based on the current and the illuminance the output voltage of the sensor circuitry can be calculated

Table 5-11. Illuminance vs. ADC input voltage.

Illuminance [lux]	ADC input [V]	Illuminance
1	0.0024	Dusk
10	0.0235	Dusk
20	0.0470	Dusk
30	0.0705	Dusk
40	0.0940	Dusk
50	0.1175	Living room
60	0.1410	Living room
70	0.1645	Living room
80	0.1880	Living room
90	0.2115	Living room
100	0.2350	Living room
200	0.4700	Office lighting
300	0.7050	Office lighting
400	0.9400	Office lighting
500	1.1750	Office lighting
600	1.4100	Office lighting
700	1.6450	Office lighting
800	1.8800	Office lighting
900	2.1150	Office lighting
1000	2.3500	Overcast day

6 Code examples

The example application is based on the Atmel AVR Software Framework that is included in Atmel AVR Studio 5. The AVR Software Framework can also be found as a separate package online at:

http://www.atmel.com/dyn/products/tools_card.asp?tool_id=4192.

For more information about the code example, see the application note Atmel AVR XMEGA-A3BU Xplained Software Users Guide:

http://atmel.com/dyn/resources/prod_documents/doc8413.pdf.

7 Revision history

To identify the revision of the Atmel AVR XMEGA-A3BU Xplained kit, locate the bar-code sticker on the back side of the board. The first line on the sticker shows the product ID and the revision. For example “A09-1248/2” can be resolved to ID=A09-1248 and revision=2.

7.1 Revision 2

Revision 2 of the XMEGA-A3BU Xplained kit is the initially released version. This revision of the kit has the following product ID: A09-1248/2.

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