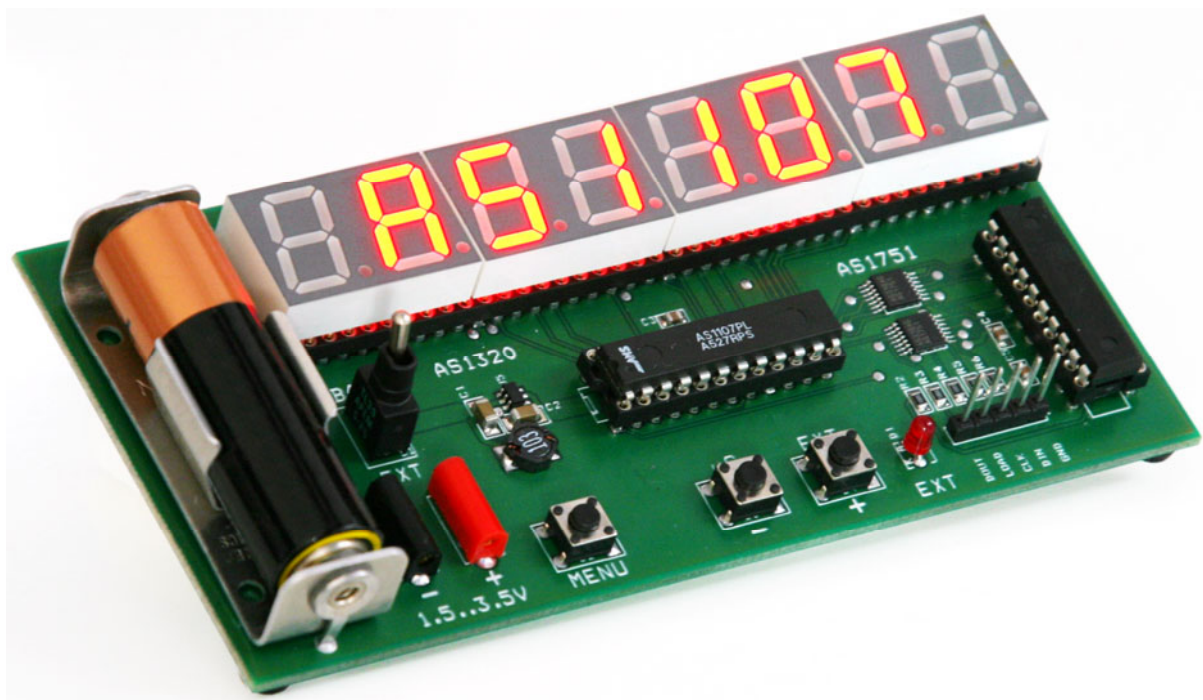# AS1100, AS1106, AS1107

Demoboard Application Note

General Description
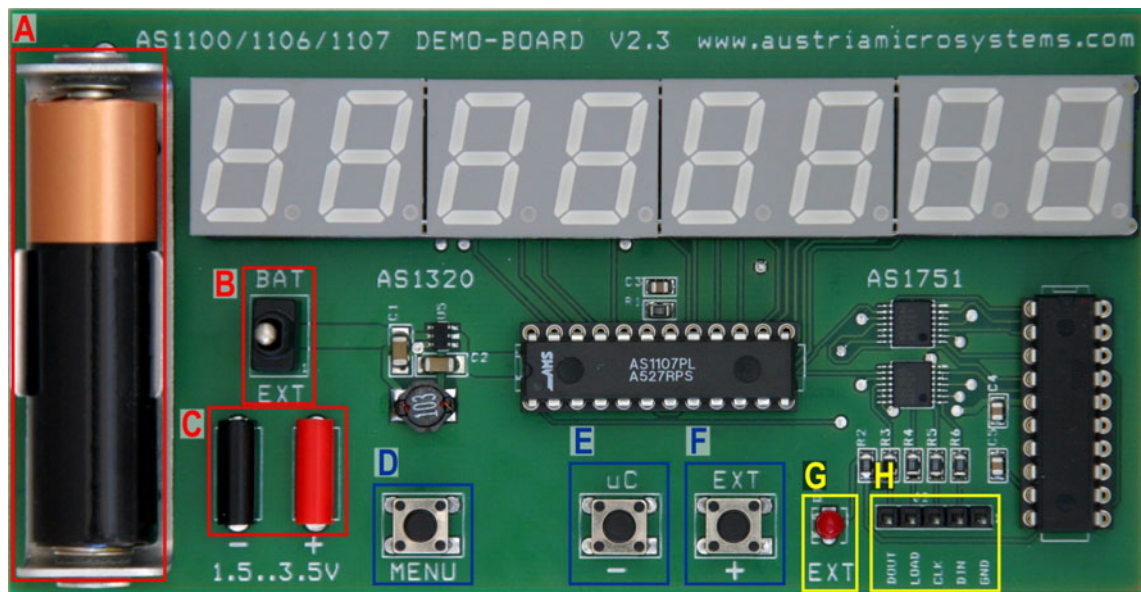

Figure 1: Board Description

Power Supply Description

Table 1: Power Supply Description

Mark	Info	Description					
A		Place a 1.5V AA cell here.					
B	BAT / EXT		The demoboard is powered via the AA cell.		The demoboard is switched off.		The demoboard is powered via the external connectors **"C"**
C	- / +	Power Supply Connectors for VCC and GND. 1.5 to 3.5V DC.					

Button Description

Table 2: Button Description

Mark	Info	Description
D	MENU	Hitting this button during microcontroller (µC) operation will show up the menu. If the menu is already shown this button will cycle through the menu options. If the demoboard is controlled externally this button has no function.
E	µC / -	Menu mode: This button will cycle reverse through the possible values of a menu option. Normal mode: A button press will activate the onboard uC.
F	EXT / +	Menu mode: This button will cycle forward through the possible values of a menu option. Normal mode: A button press will activate the interface "H" to control the demoboard externally.

External Interface Description

Table 3: External Interface Description

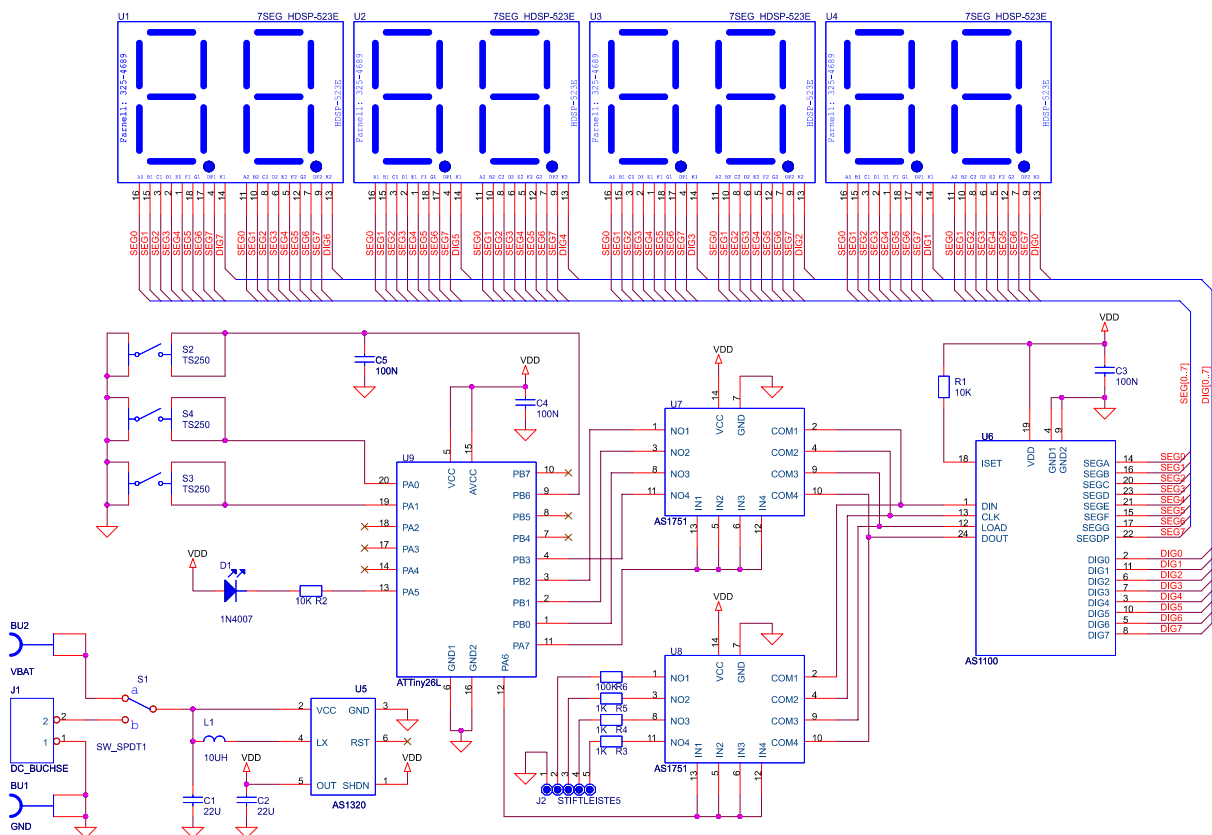| Mark	Pin	Description
G	EXT	This LED is on if the demoboard is controlled externally.
H	**External interface pins**	
	DOUT	This pin will clock out data from the LED driver on the demoboard.
	LOAD	On this pin the load pulse can be applied.
	CLK	Clock from external source.
	DIN	Data input from external source.
	GND	Ground pin for the data cable.

Circuit

Figure 2: Circuit

Starting Up

Mounted Chip

The demo board is designed to work with the AS1100, the AS1106 and the AS1107. Per default an AS1107 is mounted on the demo board. If another IC must be tested, please remove the AA cell "A" from the board and disconnect the external power supply if connected.

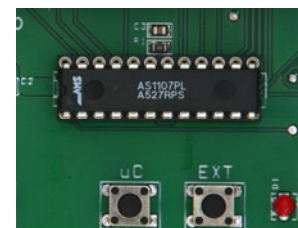The AS1107 can now be removed and exchanged with the AS1106 or AS1100.

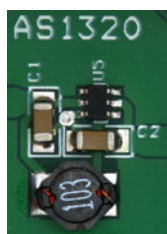Figure 3: Mounted Chip

Power Supply

Figure 4: AS1320

The demo board is powered via a single AA cell "A" or through the external power connectors "C". An AS1320 will boost the input voltage to the required voltage. The maximum input voltage must not exceed 3.5V DC.

If the demoboard is battery powered please make sure a fully charged rechargeable battery or a new disposable battery is in use. The AS1320 will convert even low voltages of nearly run out batteries very efficient, but if a worn-out battery is used the intensity of the LEDs might be reduced.

For a maximum of intensity the external power connection should be used.

External Interface

The demoboard can be controlled via the onboard microcontroller or through an external device. This can be done with a standard 3-wire interface. Additionally there is a pin for the readback of data as well as a ground pin, if such is required for the data line. Multiple demoboards can be cascaded if the DOUT is connected to the DIN of the next board.
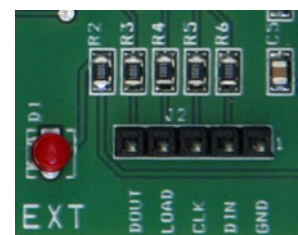

Figure 5: External interface

The two soldered AS1751 are used to switch data either from the external interface or the onboard microcontroller to the mounted AS1100, AS1106 or AS1107.

Menu

If the demoboard is used with the onboard microcontroller a menu can be called up pressing the MENU button "D". There are three menu points available:

Option	Description
In.rE6.=I5	This menu option regulates the intensity in 16 steps.
SPEEd=5	This menu option allows setting the speed in 5 steps.
Pro6.=3	There are 3 different programs to choose from: *Program 1:* Shows: " AS1100 AS1106 AS1107 " *Program 2:* Shows BCD characters: "0123456789-EHLP" *Program 3:* A test pattern cycling through all possible variants of characters.

Operational sequence

1. If not present get the datasheet for the AS1100, the AS1106 or the AS1107 from www.austriamicrosystems.com. Drive the IC on the demoboard only with the recommended settings and values as described in the datasheet.

2. Place an AA cell in the battery holder or connect an external 1.5 to 3.5V power supply. The input voltage will be boosted via the soldered AS1320.

3. Activate the board using switch "B".

4. The board will power up and can be used now. For information how to interface with the chip through the external interface please see the datasheet of AS1106, AS1107 or the datasheet of the AS1100.

Have fun using the demoboard. If there are questions do not hesitate to contact us. See contact information below.

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