



Evaluation Board for AK8142

AKD8142

Description

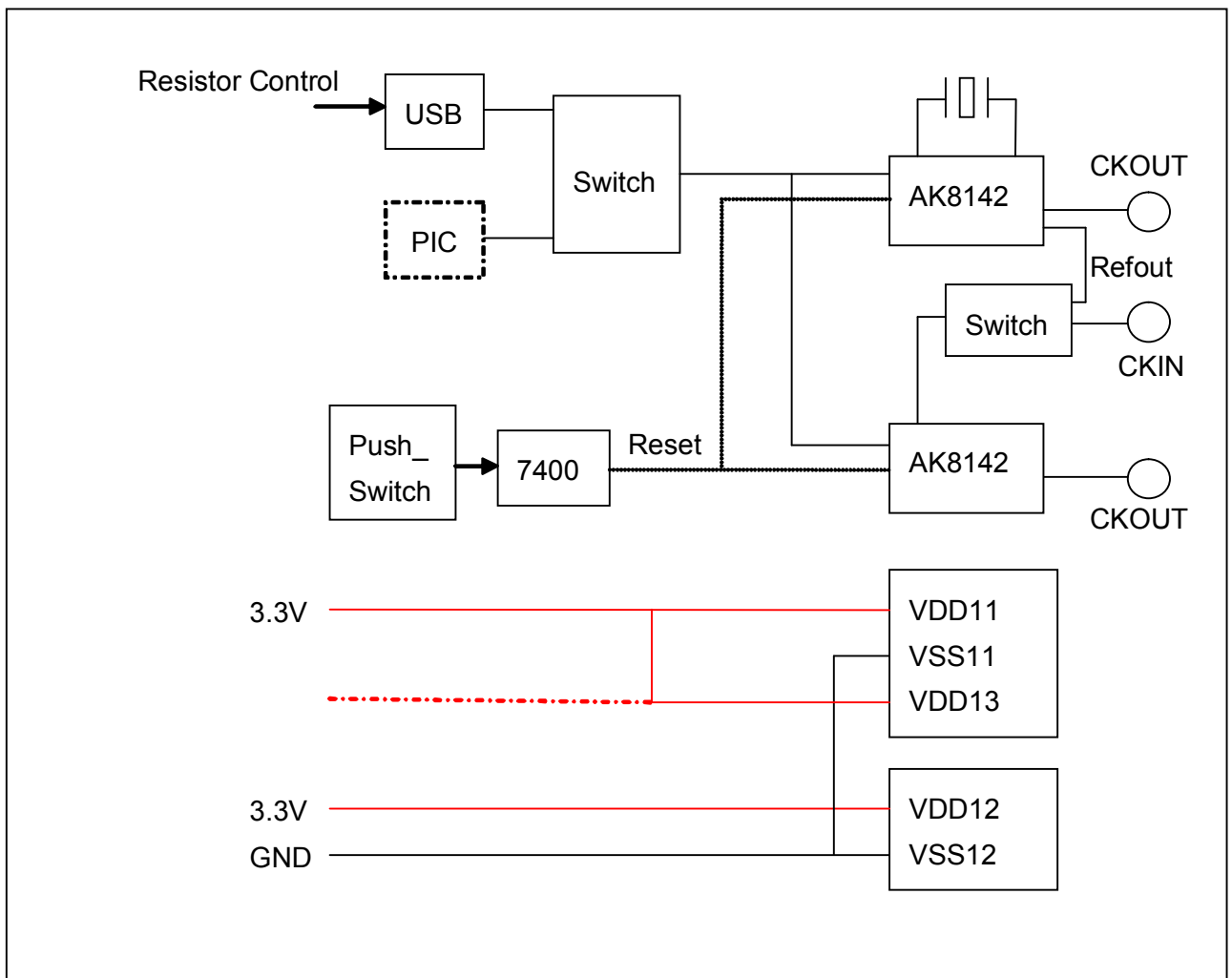
AKD8142 is an Evaluation board for the programmable clock device AK8142. It is easy to evaluate the jitter performance.

Ordering guide

- AKD8142
- operates with PC via USB.
- Socket for crystal
- The control is switched to PIC.

Block Diagram

AK8142 Evaluation Board
Circuit Diagram is attached in last page.



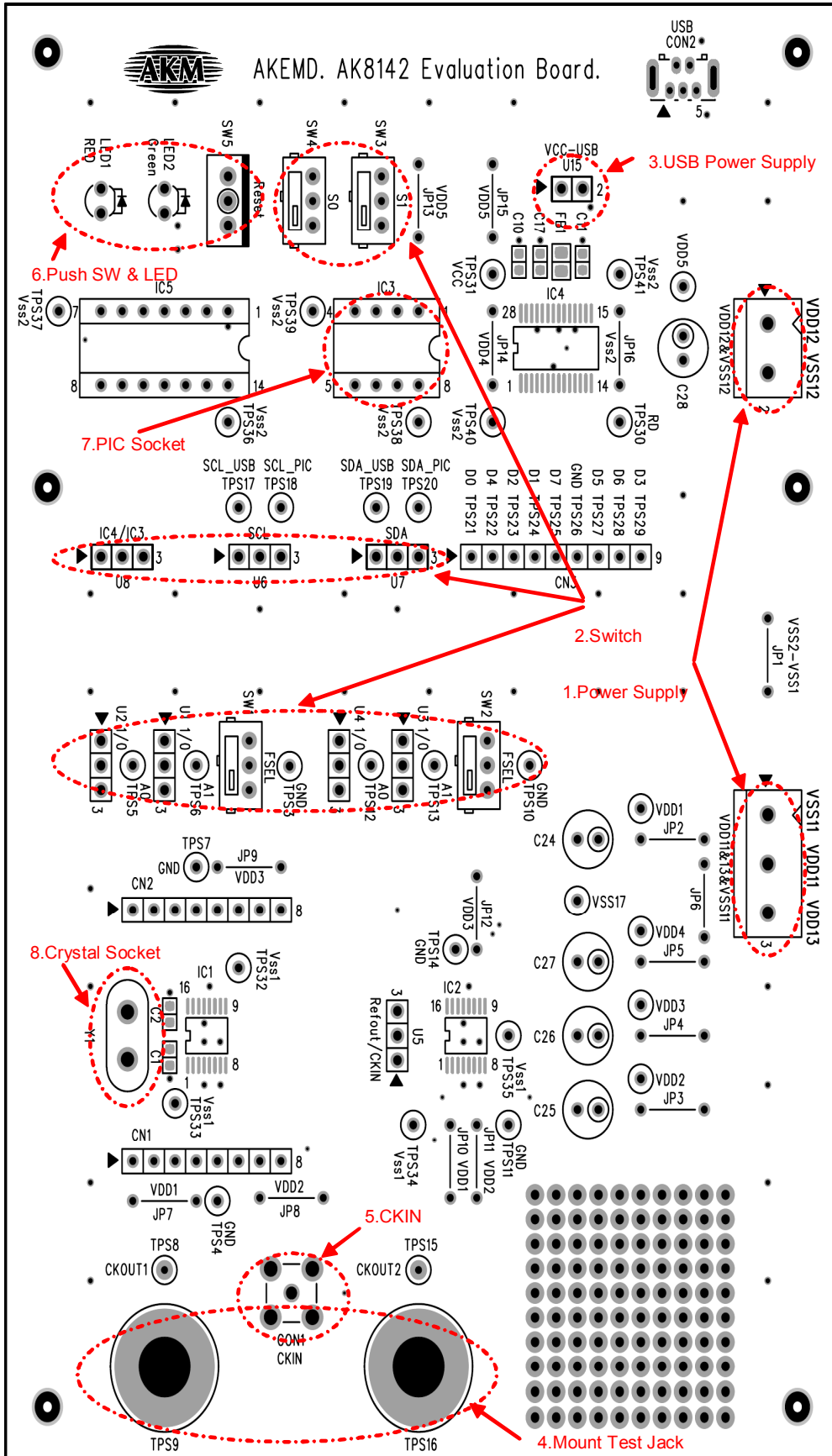


Figure 1. AKD8142 top view

1. Power Supply

Please connect the lead line to VDD11/12/13 (3.3V; Red) and VSS11/12 (GND; Black).

VDD1: VDD1 of IC1(4pin) and IC2(4pin).

VDD2:VDD2 of IC1(7pin) and IC2(7pin).

VDD3:VDD3 of IC1(12pin) and IC2(12pin).

VDD4: Power supply for I/O

VDD5: VCC of IC3 , VCC of IC4 , VCC of IC5

■ Default configuration

VDD11: VDD1,VDD2,VDD3,VDD4(3.3v)

VDD12: VDD5(3.3v)

VDD13: OPEN

VSS11:GND

VSS12:GND

■ Example) Separation of AK8142 core power supply

VDD11: VDD1

VDD12: VDD5

VDD13: VDD2,VDD3,VDD4

JP1-5:SHORT

JP6:OPEN

2. Switch

Switch No.	Connection Destination	Functions
U1	AK8142(IC1) 14pin	A0 of IC1 is switched.
U2	AK8142(IC1) 15pin	A1 of IC1 is switched.
U3	AK8142(IC2) 14pin	A0 of IC2 is switched.
U4	AK8142(IC2) 15pin	A1 of IC2 is switched.
U5	AK8142(IC2) 1pin	Input selection of IC2
U6	AK8142(IC1,IC2) 10pin	SCL
U7	AK8142(IC1,IC2) 11pin	SDA
U8	7400 9pin	Reset
SW1	AK8142(IC1) 3pin	FSEL
SW2	AK8142(IC2) 3pin	FSEL
SW3	PIC(IC3) 2pin	PIC_Switch1
SW4	PIC(IC3) 3pin	PIC_Switch2

■ Default configuration

- U1,U2 : Low (GND)
- U3,U4 : High (VDD)
- U5 : Refout of IC1
- U6 : SCL_USB
- U7 : SDA_USB
- SW1,SW2 : Low (GND)
- SW3,SW4 : Low (GND)

■ U1-4



High (VDD)



OPEN



Low(GND)

■ U5.

U5 of Short Plug is for the input switch of IC2.
It is set to REFOUT of IC1 or CKIN. (SMA)



REFOUT of IC1
(Default)



CKIN(SMA)

■ U6-8

It is switched to USB or PIC.
U6-8 is should be same setting



- | | | |
|------|---------|---------|
| U6 : | SCL_USB | SCL_PIC |
| U7 : | SDA_USB | SDA_PIC |
| U8 : | IC4 | IC3 |

■ SW1-4



H : VDD
M : OPEN
L : GND

SW1-2 of DISPSW is connected with the AK8142 FSEL Pin, and SW3-4 is connected with PIC.

3. USB power supply

Remote JP15 and short U15 when IC4 with USB bus power supply mode.

•Default configuration.

U15 : OPEN.

J15 : Short

4. Pattern for measuring instrument tool connection

The pattern for chassis mount test Jack (tektronix 131-0258-00) for the miniature probe is available.

5. CKIN

Input clock for IC2(AK8142) is selectable from REFOUT or CKIN.

CKIN is selected, the frequency source should be connected with the SMA connector.

6. PushSW&LED

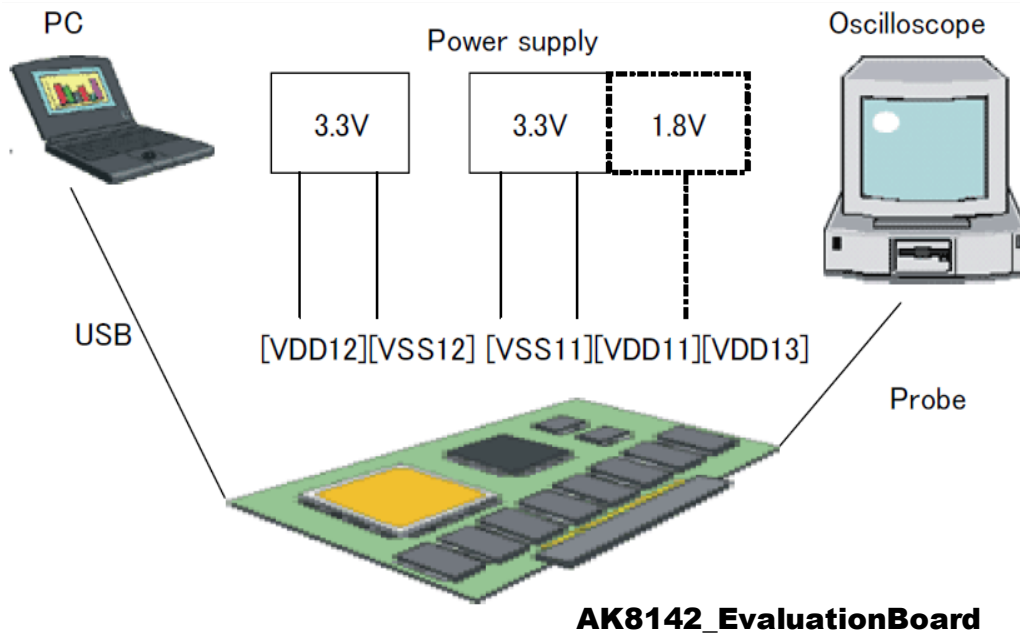
When LED (red) lights, IC1 and IC2 are resetting is shown. IC1 and IC2 are made in the state of reset in pressing the push-button.

7. PIC Socket

Stand alone configuration is available. By using PIC microcontroller.
A 8pin DIP Socket is for PIC(12F683).

8. Crystal Socket

Quartz oscillator foot pattern
49 lead type quartz oscillator is mountable.



Jitter measurement

The output of [60MHz] from Crystal Unit [20MHz]
 Device:AK8142
 Crystal Unit : 20[MHz]
 Dummy capacitor=0pF

