

AKM
AKD5370

Evaluation Board Rev. C for AK5370

General Description

AKD5370 is an evaluation board for USB I/F A/D converter, AK5370. As the AK5370 is highly integrated, only a few external components, which are a regulator, a filter, resistors and capacitors, are required for building USB I/F microphone. As the operation of the AK5370 is compatible with USB standard audio class, the device can be tested easily only with Windows USB audio drivers and the AKD5370.

Components

- Microphone Jack
- 3.3 volt Regulator(TI: TPS77533)
- Common mode noise filter(Murata: BLM11B221SB (Power Line), PLP3216S551SL2 (D+,D-))
- USB B-type Connector

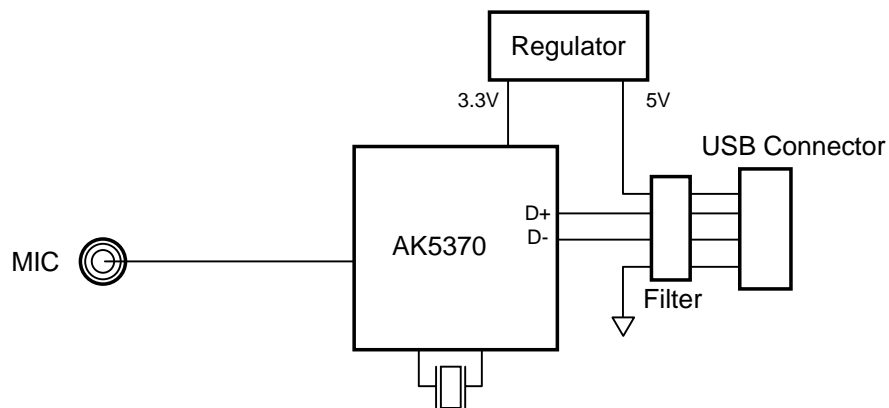
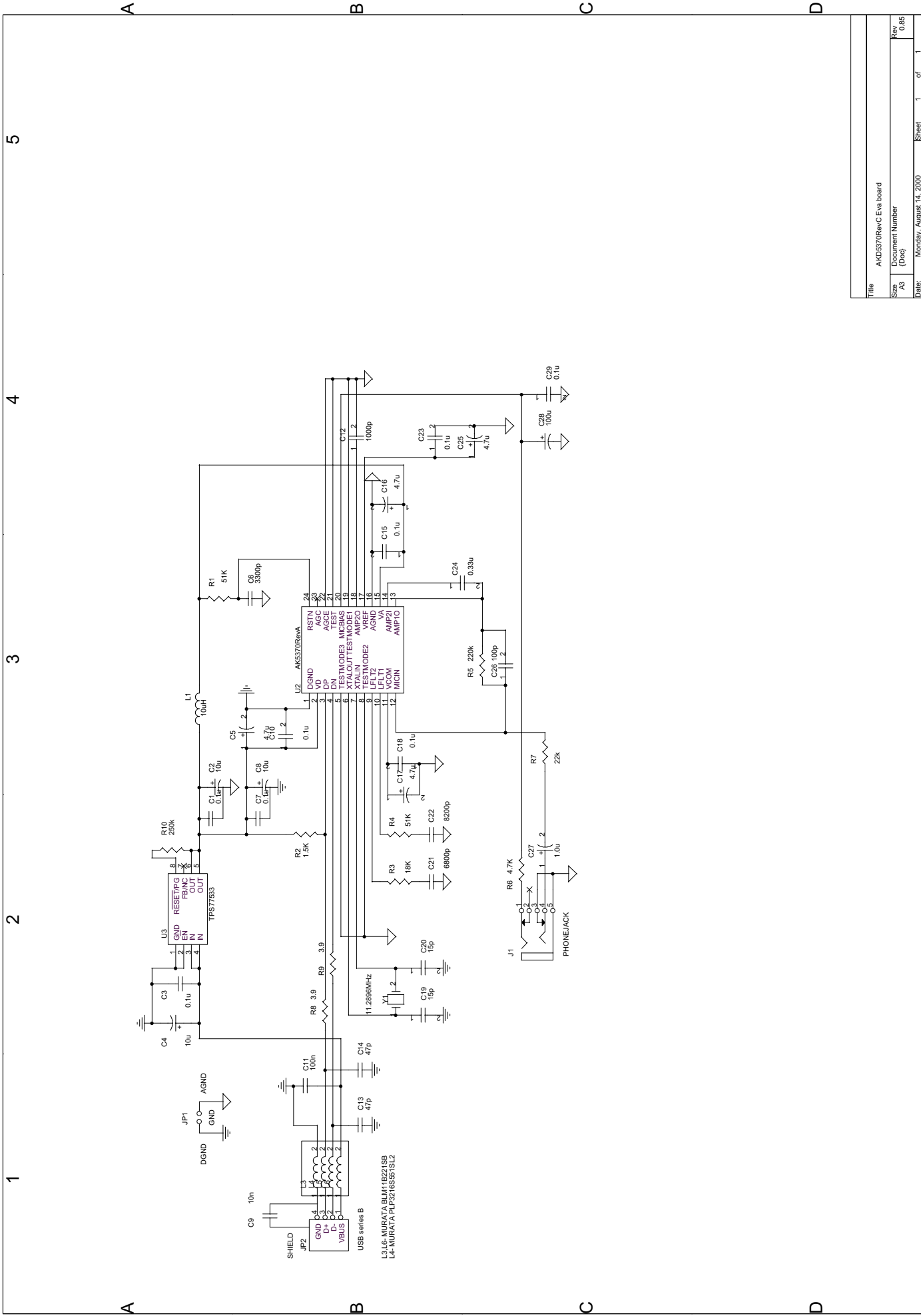


Figure 1 AKD5370 Block Diagram



Title	AKDS70RevC Eya board
Size	A3
Document Number	[Doc]
Rev	0.05
Date	Monday, August 14, 2000
Sheet	1 of 5

■ Installation (Windows)

The AKD5370 operates successfully under Windows98, Windows98SE, and Windows 2000. Installation is almost the same among Operating System. The following example is the case of Windows 2000.

1) When the AKD5370 is plugged in at the first time, Windows recognizes the device, and reads strings, “AK5370”, and displays it in a short time like Figure 3. After that, Windows displays dialogs ask you to press “next” or “yes” button like a following figures (Fig. 4 – Fig. 9) in order to install USB audio drivers. The AK5370 can operate with only standard USB audio drivers.

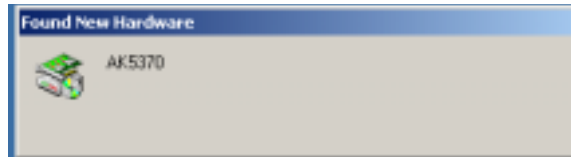


Figure 3.



Figure 4

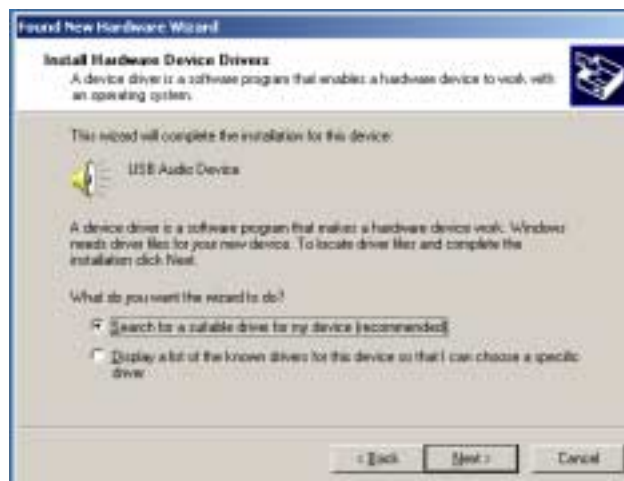


Figure 5



Figure 6



Figure 7

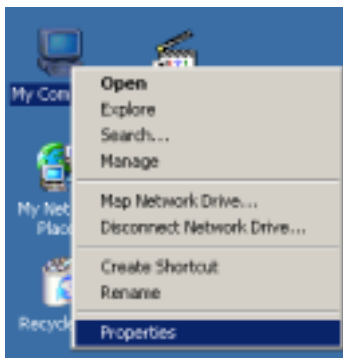


Figure 8



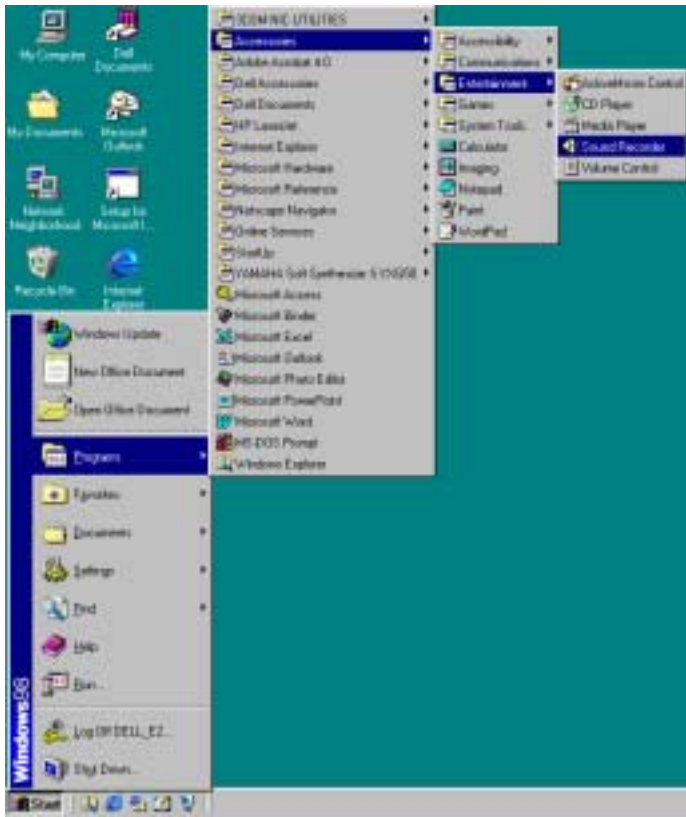
Figure 9

2) When Windows recognizes the device successfully, device manager in control panel shows “USB audio device” in “sound, video and game controller” and “USB Composite Device” in “Universal serial bus controller” respectively.



■ Operation

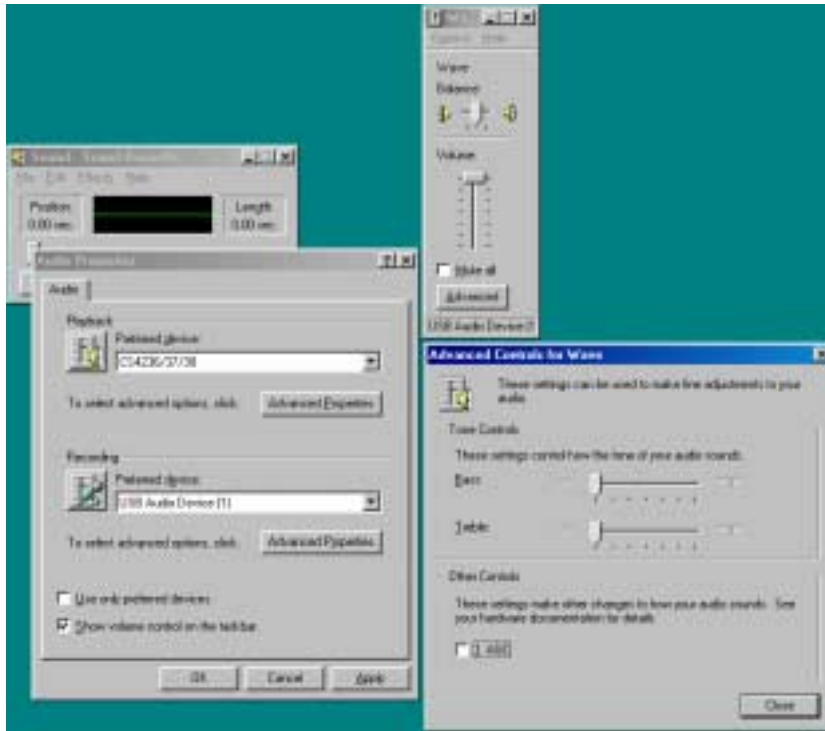
1) runs "sound recorder" program in 'accessory -> Entertainment'



2) select "Edit" -> "Property", and then select "USB Audio Device(1)" as "Preferred Device".



- 3) When the icon in the recording block is clicked, the volume slider window appears. Top of the slider means 0dB. (Note that the value more than 0dB can not be set under Windows 98 first edition. Under Windows 98 second edition and Windows 2000, the top points the maximum value of the AK5370)



- 4) select "File" -> "Property", and then click "convert now.." button in the Property window. Then select "44.1kHz 16bit Mono" as attribute.¹



- 5) You can start recording by pressing "Rec" button.

¹ Available sampling frequencies depends on applications.

Appendix

Device Name in Device Manager

By adding the following three sections into wdma_usb.inf file, ANY string can be displayed as the device name in Device Manager.

[Manufacturer]

%AKM.Mfg%=AKM.Section

[AKM.Section]

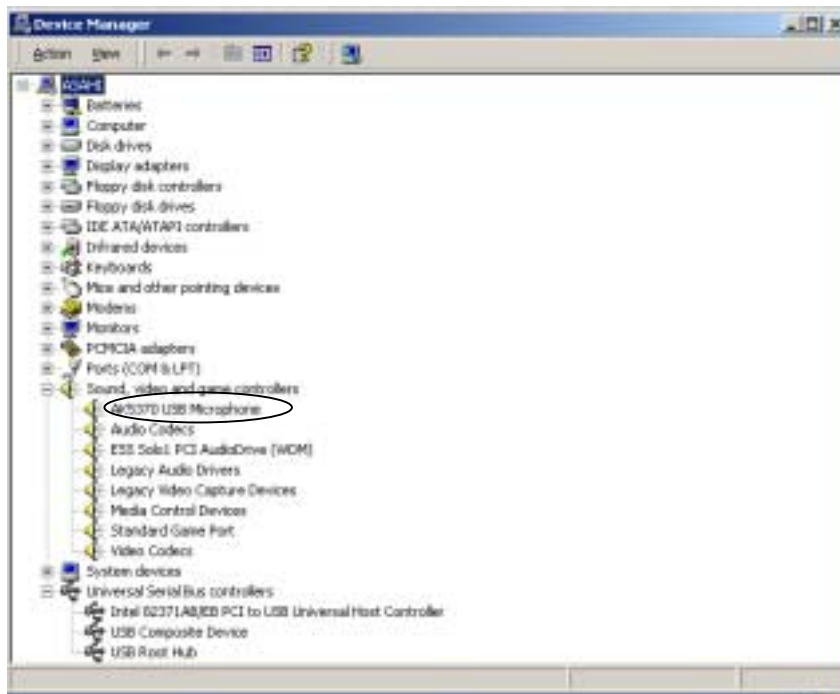
%USBVID_0556&PID_0001&MI_00.DeviceDesc%=USBAudio, USB\VID_0556&PID_0001&MI_00

[Strings]

AKM.Mfg="AKM"

USBVID_0556&PID_0001&MI_00.DeviceDesc="**AK5370 USB Microphone**"

The above bold underlined characters are displayed in Device Manager.



AKD5370RevC Demo board Revised: Monday, March 27, 2000

Revision: 0.85

Recommendation BOM

ASAHI KASEI Microsystems

Item	Quantity	Reference	Part	Vendor	P/N
1	8	C1,C3,C7,C10,C15,C18,C23,C29	0.1u	Murata	GRM40F104Z50PT
2	3	C2,C4,C8	10u	NEC	DN1E010M1S
3	4	C5,C16,C17,C25	4.7u	NEC	DN1C4R7M1S
4	1	C6	3300p	Murata	GRM40F332Z50PT
5	1	C9	10n	Murata	GRM40F104Z50PT
6	1	C11	100n	Murata	GRM40F103Z50PT
7	1	C12	1000p	NEC	D33Y5V1H102Z21
8	2	C14,C13	47p	Murata	GRM40F470Z50PT
9	2	C19,C20	15p	Murata	GRM40F150F50PT
10	1	C21	6800p	Murata	GRM40F682Z50PT
11	1	C22	8200p	Murata	GRM40F822F50PT
12	1	C24	0.33u	NEC	D33Y5V1H334Z21
13	1	C26	100p	NEC	D33Y5V1H100Z21
14	1	C27	1.0u	NEC	DN1E010M1S
15	1	C28	100u	Nippon Chemi-Con	SME25VB100uF
16	1	JP1	GND		
17	1	JP2	USB series B	AMP	787780-2
18	1	J1	PHONEJACK	Marusin	MJ-352W-C
19	1	L1	10uH	TDK	TP0206-100K
20	2	L3,L6	INDUCTOR	Murata	BLM11B221SB
	2	L4,L5	INDUCTOR	Murata	PLP3216S551SL2
21	2	R4,R1	51K	KOA	RN73K2A51KQJ
22	1	R2	1.5K	KOA	RN73K2A1.5KQJ
23	1	R3	18K	KOA	RN73K2A18KQJ
24	1	R5	220k	KOA	RN73K2A220KQJ
25	1	R6	4.7K	KOA	RN73K2A4.7KQJ
26	1	R7	22k	KOA	RN73K2A22KQJ
27	2	R8,R9	3.9	KOA	RN73K2A3.9QJ
28	1	R10	250k	KOA	RN73K2A250KQJ
29	1	U2	AK5370RevA	AKM	AK5370VF
30	1	U3	Regulator	Texas Instruments	TPS77533D *)
31	1	Y1	11.2896MHz	KINSEKI	HC49/U-S
			Alternative	NDK	AT-51

*)TPS77533 is suggested for the view of the analog performance and power consumption.

If the power consumption requirement is not so severe,LT1117-3.3(Linear technology) is also suggested

For the detail informatin, please sse the document, " Regulator Selection Guide".

Remark

don't make use of R5,R6 resistors less than 20k ohm

Contacts

NIPPON Chemi-Con

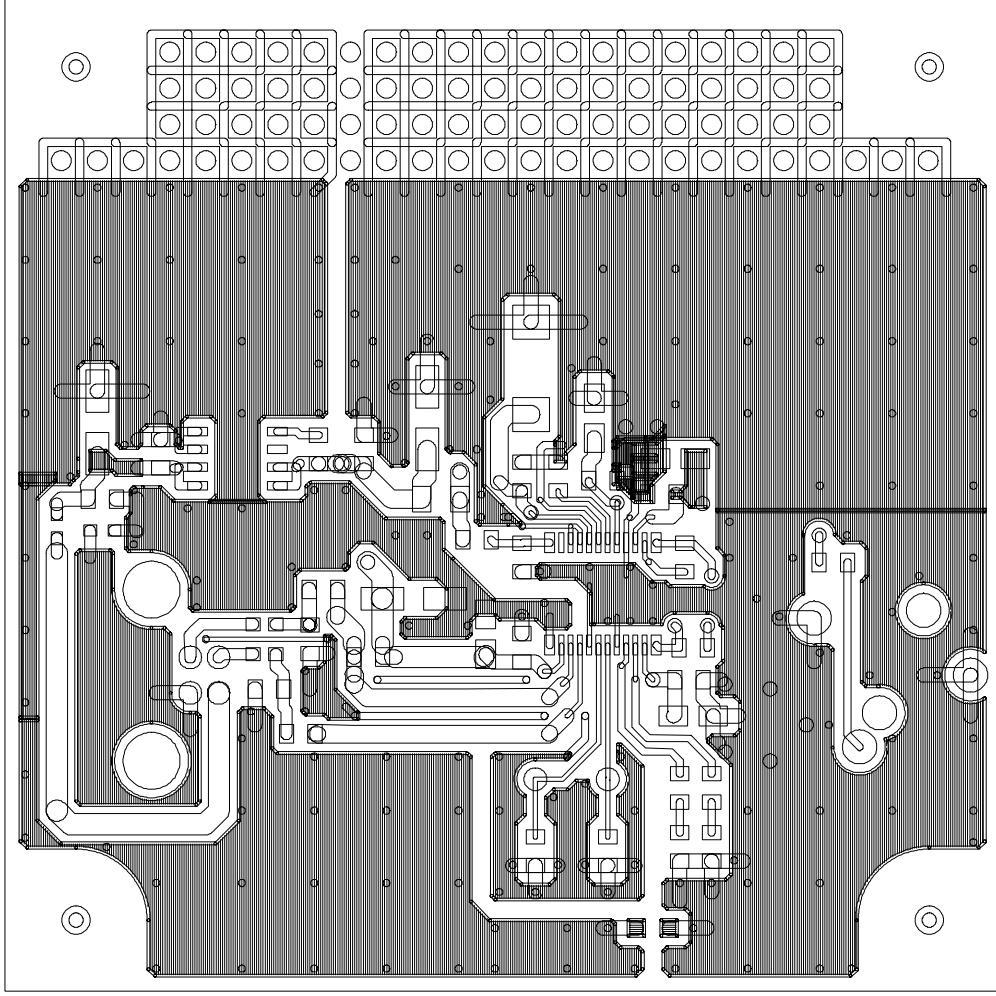
<http://www.chemi-con.co.jp/>

Murata

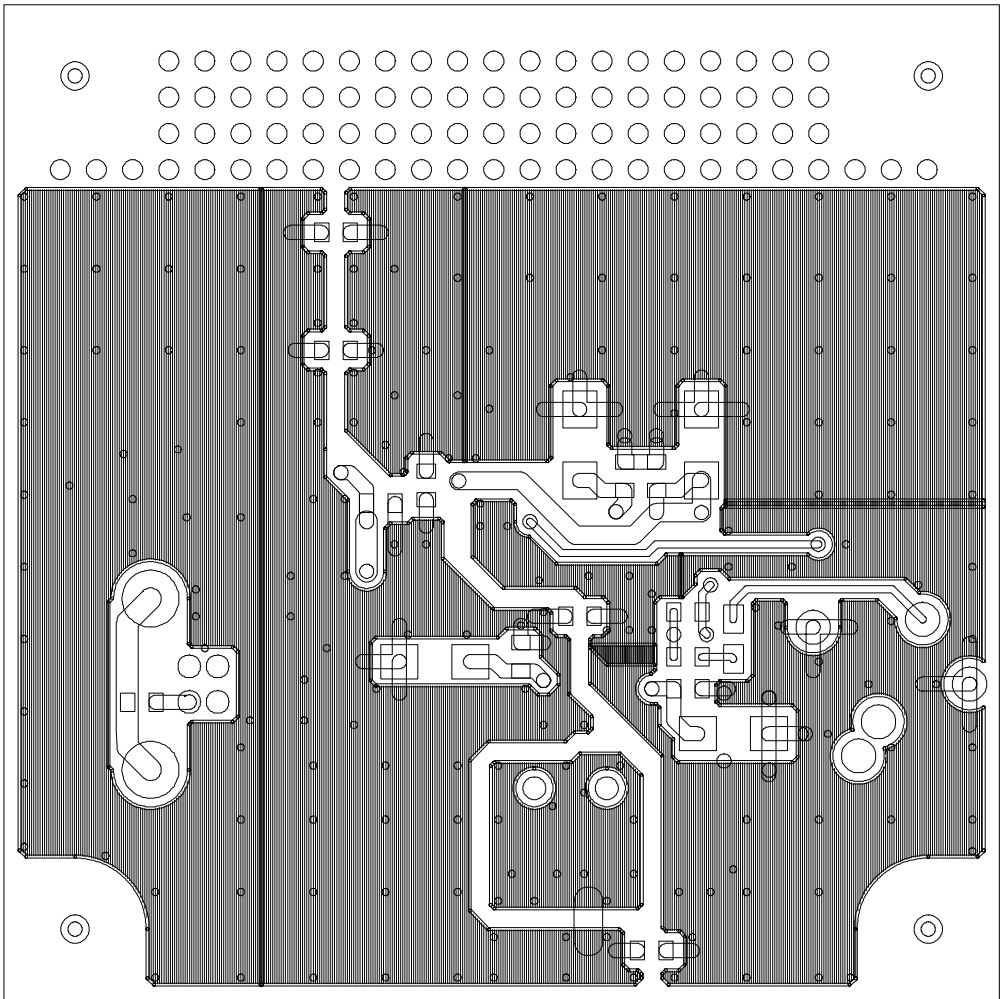
<http://www.murata.co.jp/products/>

NEC	http://www.necel.com/
AMP	http://connect.amp.com/AMP
Marusin	phone:81-44-711-0555
TDK	http://www.tdk.co.jp/tetop01/
KOA	http://www.koanet.co.jp/ (Japanese only) P.O.BOX 547 BRADFORD PA. 16701 USA
KOA SPEER ELECTRONICS, INC.	phone:814-362-5536
KINSEKI	http://www.kinseki.co.jp/
NDK (Nippon Dempa Kogyo)	http://www.ndk.com/

Layout

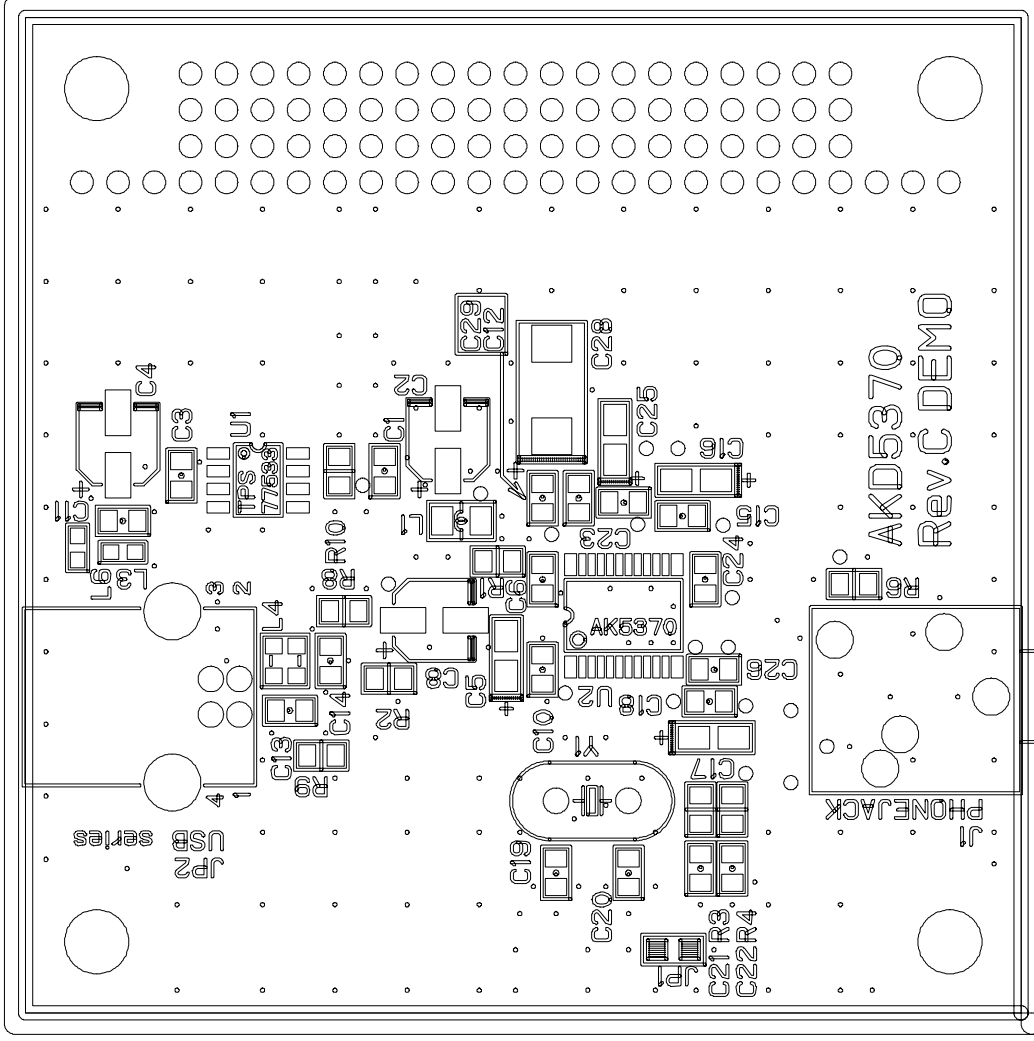


L1 部品面 パターン AKD5370C-DEMO



RS 株式会社 1/2-1

AKD2310C-DEMO



L1 部品面 レジスト シルク AKD5370C-DEMO