



INTEGRATED CIRCUITS INC.

*A*PLUS MAKE YOUR PRODUCTION A-PLUS

VOICE OTP

aP89XX_DBTR20A

Demo Board

***A*PLUS INTEGRATED CIRCUITS INC.**

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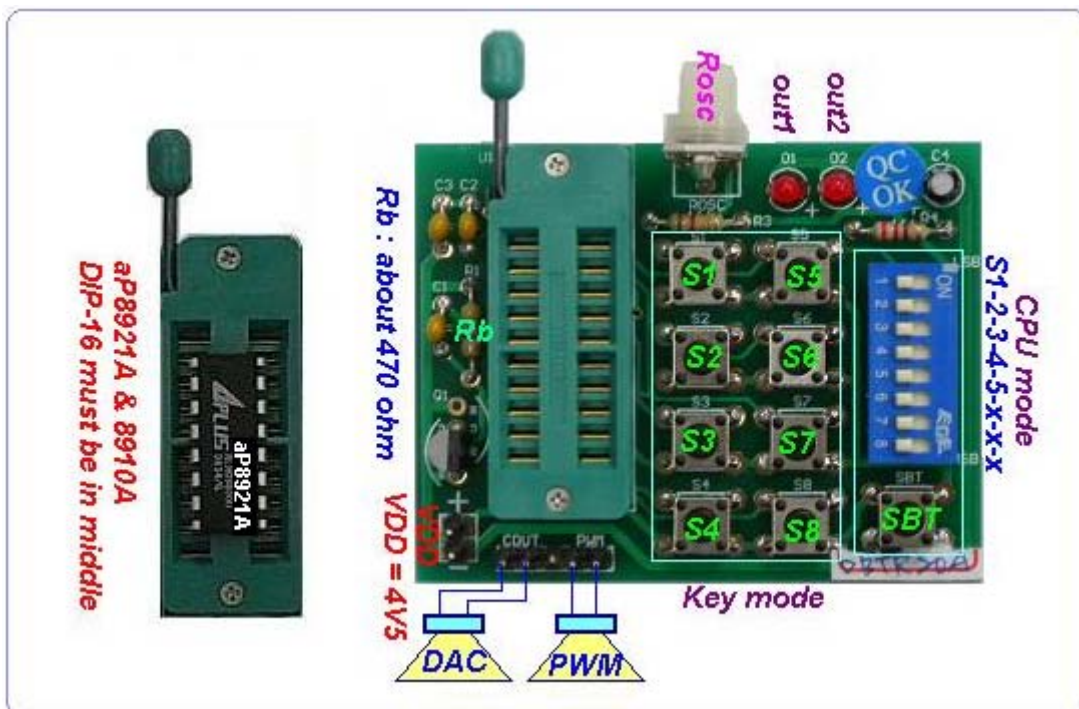
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AP89XX_DBTR20A DEMO BOARD USER MANUAL

	Durations	PHRASE		TG-pin	PDIP	SOP	DIE	VCC
		Key mode	CPU mode					
aP8942A	42''	32	32	8	20	20	YES	2.6 ~ 5.0V
aP8921A	21''	12	12	4	16	16	YES	2.6 ~ 5.0V
aP8910A	10''	12	12	4	16	16	YES	2.6 ~ 5.0V

aP8942A/21A/10A			
	Out1	Out2	Out3
Option-1	LED2	LED1	NO USE
Option-2	LED2	STOP	
Option-3	LED2	BUSY	
Option-4	STOP	BUSY	

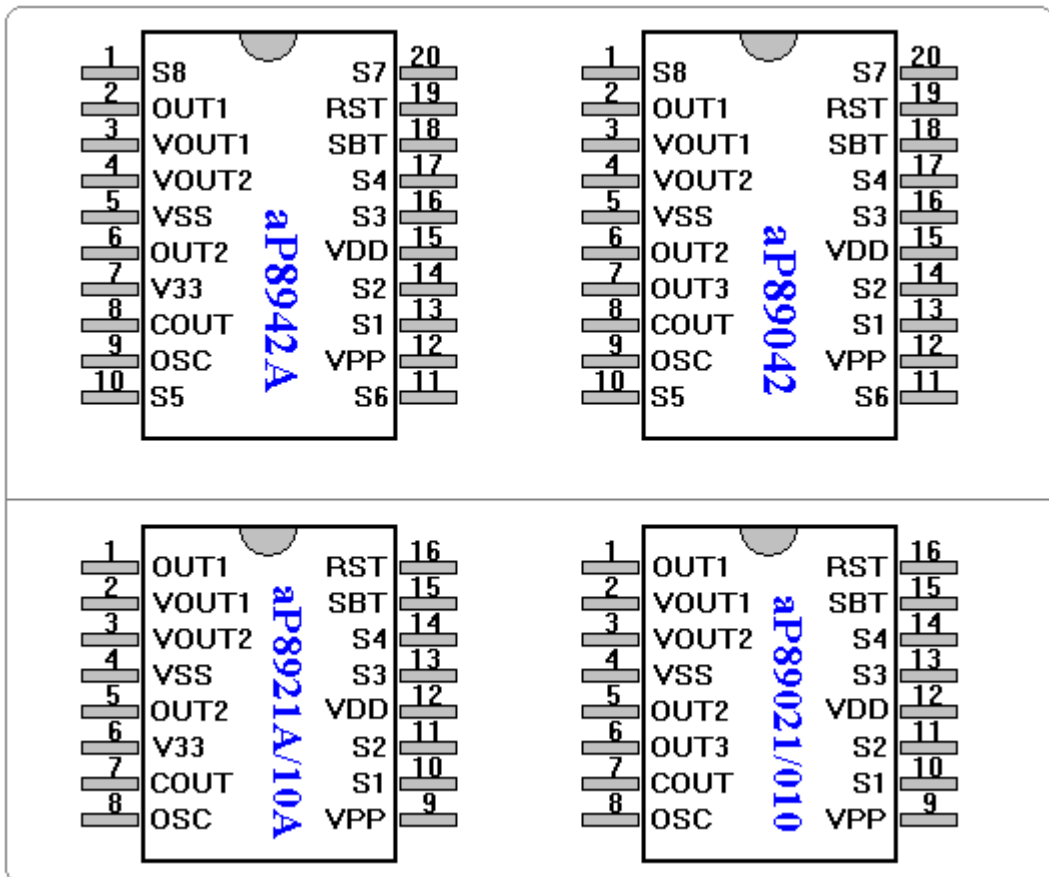
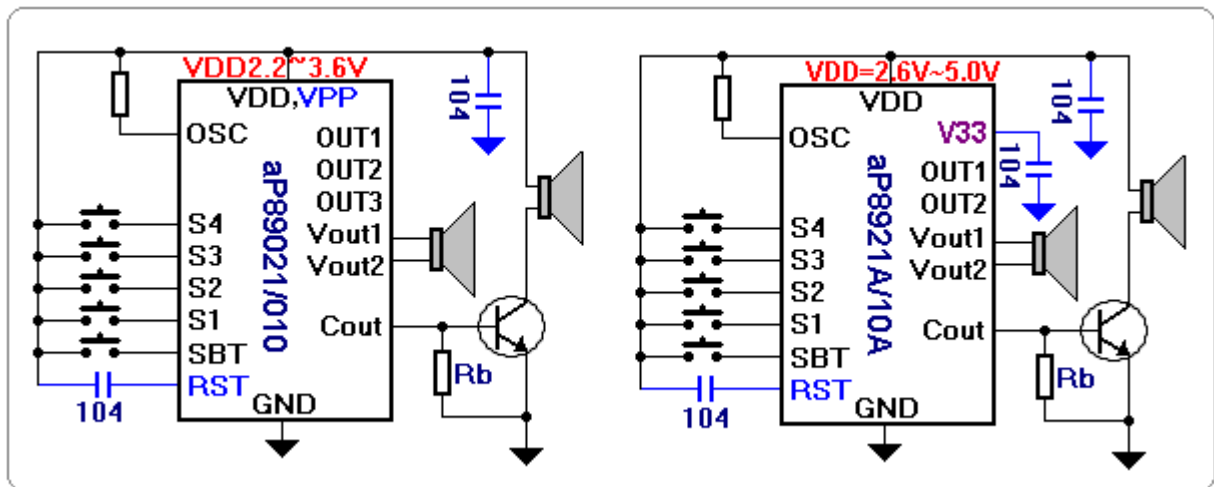
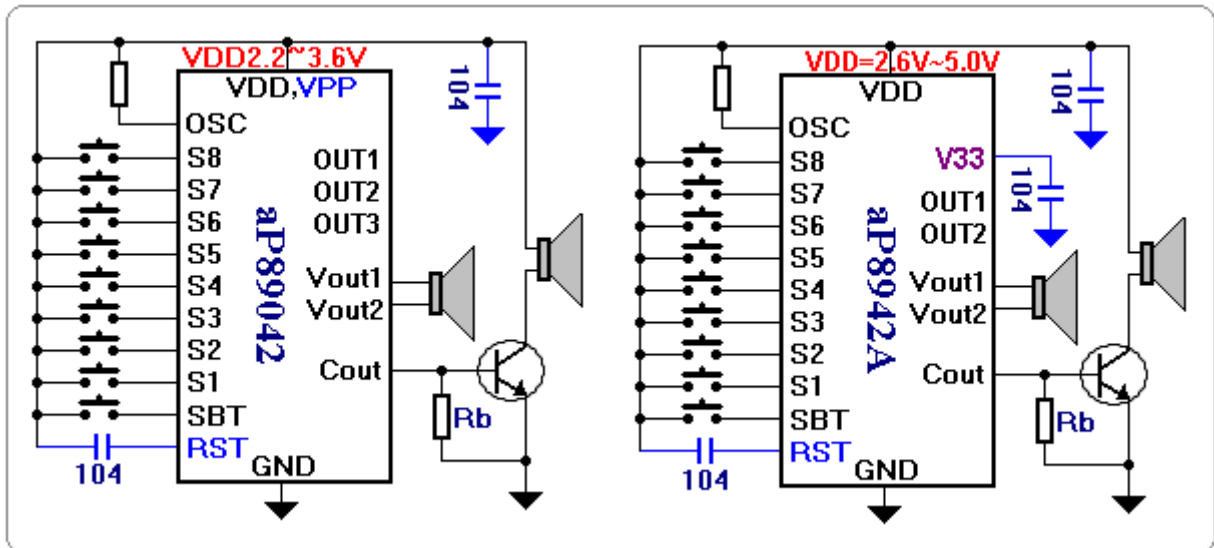


- PART NO. : **AP89XX_DBTR20A**
- PCB NO. : 8202
- PCB SIZE : 62.3 x 48.3 mm
- Out3 : The aP8942A/ aP8921A/ aP8910A is no use
- Rb : aP8942A,aP8921A & aP8910A about --- 470 Ohm
- VDD : VDD=4.5V --- for aP8942A,aP8921A & aP8910A
- DIP-16 (aP8921A,aP8910A) must be in middle
- **TRIGGER TYPE : key mode & CPU mode by compile option**
 - a. KEY Trigger :
 - a1. S4 ~ S1 & SBT , max. 12 sections for aP8921A/10A
 - a2. S8 ~ S1 & SBT , max. 32 sections for aP8942A
 - b. CPU Parallel Trigger :
 - b1. address : S4(MSB)-S3-S2-S1(LSB) + SBT key trigger, max. 12 sections for aP8921A/10A
 - b2. address : S5(MSB)-S4-S3-S2-S1(LSB) + SBT key trigger, max. 32 sections for aP8942A

Voice group	aP8921A/10A Key mode				aP8921A/10A CPU mode			
	S4	S3	S2	S1	S4	S3	S2	S1
1	0	0	0	1	0	0	0	1
2	0	0	1	0	0	0	1	0
3	0	1	0	0	0	1	0	0
4	1	0	0	0	1	0	0	0
5	0	0	1	1	0	0	1	1
6	0	1	1	0	0	1	1	0
7	1	1	0	0	1	1	0	0
8	1	0	0	1	1	0	0	1
9	0	1	1	1	0	1	1	1
10	1	1	1	0	1	1	1	0
11	1	1	0	1	1	1	0	1
12	1	0	1	1	1	0	1	1

PS : aP8921A/10A the address of CPU mode is same the Key mode

Voice Group	aP8942A --- KEY Mode								aP8942A ---CPU Mode				
	S8	S7	S6	S5	S4	S3	S2	S1	S5	S4	S3	S2	S1
1	0	0	0	0	0	0	0	1	0	0	0	0	0
2	0	0	0	0	0	0	1	0	0	0	0	0	1
3	0	0	0	0	0	1	0	0	0	0	0	1	0
4	0	0	0	0	1	0	0	0	0	0	0	1	1
5	0	0	0	1	0	0	0	0	0	0	1	0	0
6	0	0	1	0	0	0	0	0	0	0	1	0	1
7	0	1	0	0	0	0	0	0	0	0	1	1	0
8	1	0	0	0	0	0	0	0	0	0	1	1	1
9	0	0	0	0	0	0	1	1	0	1	0	0	0
10	0	0	0	0	0	1	1	0	0	1	0	0	1
11	0	0	0	0	1	1	0	0	0	1	0	1	0
12	0	0	0	1	1	0	0	0	0	1	0	1	1
13	0	0	1	1	0	0	0	0	0	1	1	0	0
14	0	1	1	0	0	0	0	0	0	1	1	0	1
15	1	1	0	0	0	0	0	0	0	1	1	1	0
16	1	0	0	0	0	0	0	1	0	1	1	1	1
17	0	0	0	0	0	1	1	1	1	0	0	0	0
18	0	0	0	0	1	1	1	0	1	0	0	0	1
19	0	0	0	1	1	1	0	0	1	0	0	1	0
20	0	0	1	1	1	0	0	0	1	0	0	1	1
21	0	1	1	1	0	0	0	0	1	0	1	0	0
22	1	1	1	0	0	0	0	0	1	0	1	0	1
23	1	1	0	0	0	0	0	1	1	0	1	1	0
24	1	0	0	0	0	0	1	1	1	0	1	1	1
25	0	0	0	0	1	1	1	1	1	1	0	0	0
26	0	0	0	1	1	1	1	0	1	1	0	0	1
27	0	0	1	1	1	1	0	0	1	1	0	1	0
28	0	1	1	1	1	0	0	0	1	1	0	1	1
29	1	1	1	1	0	0	0	0	1	1	1	0	0
30	1	1	1	0	0	0	0	1	1	1	1	0	1
31	1	1	0	0	0	0	1	1	1	1	1	1	0
32	1	0	0	0	0	1	1	1	1	1	1	1	1



aP8942A , aP8921A & aP8910A --- Sampling Rate vs Rosc

Sampling rate	Rosc	Sampling rate	Rosc
5.4 K Hz	400K	6 K Hz	344K
5.9 K Hz	370K	7 K Hz	296K
6.3 K Hz	350K	8 K Hz	252K
6.5 K Hz	330K	9 K Hz	227K
7.0 K Hz	300K	10 K Hz	202K
7.6 K Hz	280K	11 K Hz	183K
8.5 K Hz	250K	12 K Hz	168K
9.5 K Hz	220K	13 K Hz	158K
10.3 K Hz	200K	15 K Hz	134K
11.9 K Hz	170K	16 K Hz	125K
13.8 K Hz	150K	18 K Hz	108K
16.5 K Hz	120K	22 K Hz	83K
19.3 K Hz	100K		
20.5 K Hz	91K		
22.4 K Hz	82K		