



思 科 微

深圳市思科微科技有限公司

SHENZHEN SIKWEI TECHNOLOGY CO., LTD

SK-V53-340S V53 Flash Series

产品规格书

SK-V53F340S-SOP8/SOP16

4/8 接口单信道语音芯片



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Information contained in this document regarding device applications and the like is intended through suggestion only and may be superseded by updates.

产品概观

V53 闪存系列为全新世代高性价比的语音芯片，具有 9bits 高性能 PWM/DAC 语音引擎。并且具备有多样化的容量型号选择，并内置有高精度起振器，毋需外部起振组件，外接组件少，让应用开发整体成本具有市场领先的优势。

功能概观

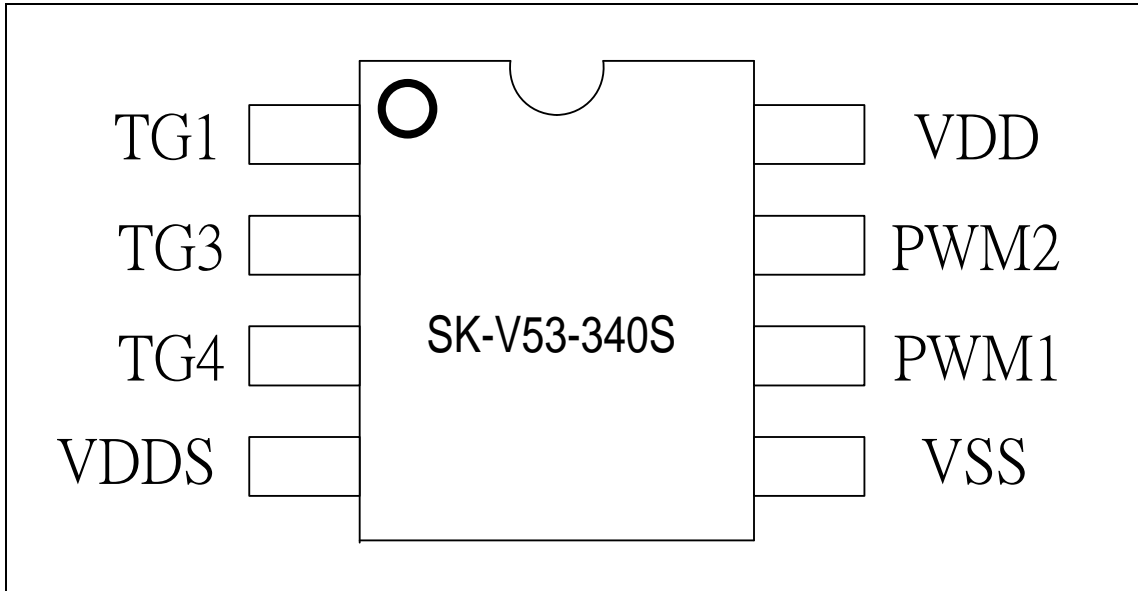
- 语音引擎：9bits PWM / 9bits DAO
- 可编辑阶数：3800 阶
- 可编辑群组数：63 组(最大)
- 开机执行群组：1 组
- 可放声音长度：
SK-V53-340s(V53F340)
在 4bits 6K-Playrate 音质下

- 内置闪存加密引擎
- 八组可设定接口(依型号决定)
 - TG1 带序列模式一般输入接口。
 - TG2 可设定为低准位触发复位接口。
 - TG2 带序列模式一般输入接口。
 - TG3 一般接口，可程序化为音量调整接口。
 - TG4~8 一般接口。
- 可程序化接口触发型态
 - Re-triggered / Irre-triggered
 - Level / Edge
 - Hold / Un-hold
 - Voice Repeat / One-time voice.
 - On/Off function.
- 选表式声音压缩编码引擎：4bits / 5bits / 8bits / 9bits
- 内置单片机触发模式 SPI 接口
- 内置 RC 震荡起振回路，无须外部电路
- 宽工作电压：2.4~5.0V
- 独立外接闪存电源(V53000, \cong VDD)
- 工作温度：-20°C ~ 60°C (不计工作频率飘移)

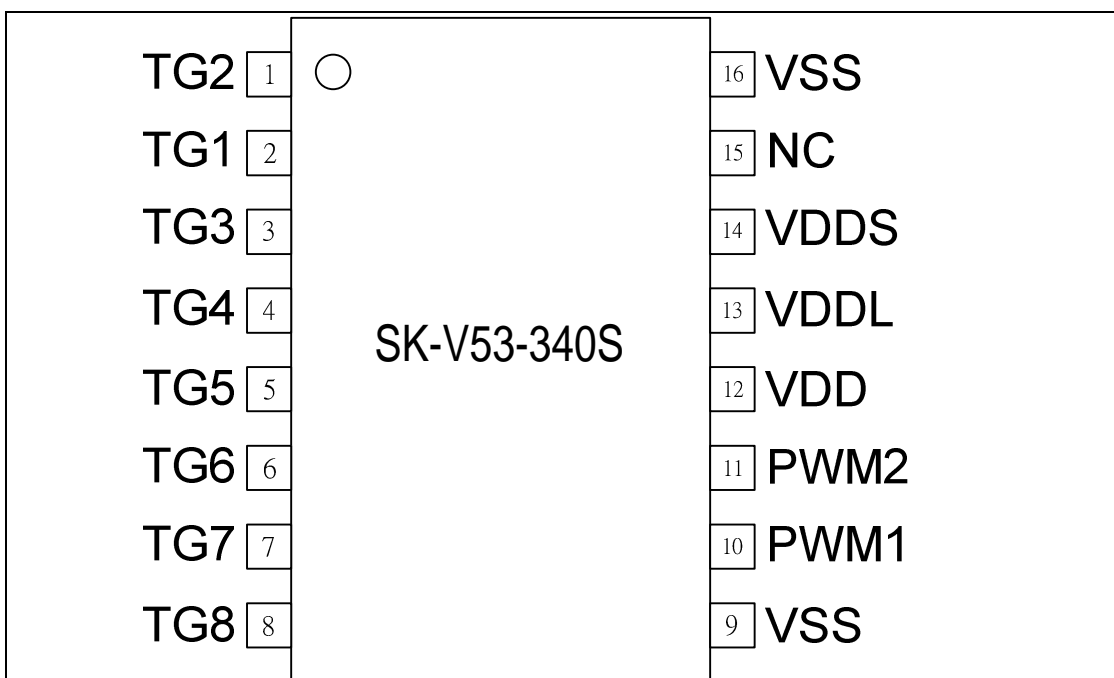
- 简易编程功能
 - 工作寄存器写入
 - 工作寄存器进位
 - 工作寄存器比较分支
- 可程序化输出状态
 - 待机准位
 - 工作高准位
 - 工作低准位
 - 输出频闪
- 多样化播放速率选择
 - 3.1K / 3.2K / 3.3K / 3.5K / 3.7K / 3.8K
 - 4.0K / 4.2K / 4.4K / 4.6K / 4.8K
 - 5.0K / 5.3K / 5.6K
 - 6.0K / 6.4K / 6.8K
 - 7.4K / 8.0K / 8.7K / 9.6K / 10.6K / 12.0K
 - 13.7K / 16.0K / 19.2K / 24.0K / 32.0K

封装脚位图

SK-V53-340S (SOP8)



V53F 340S(SOP16)





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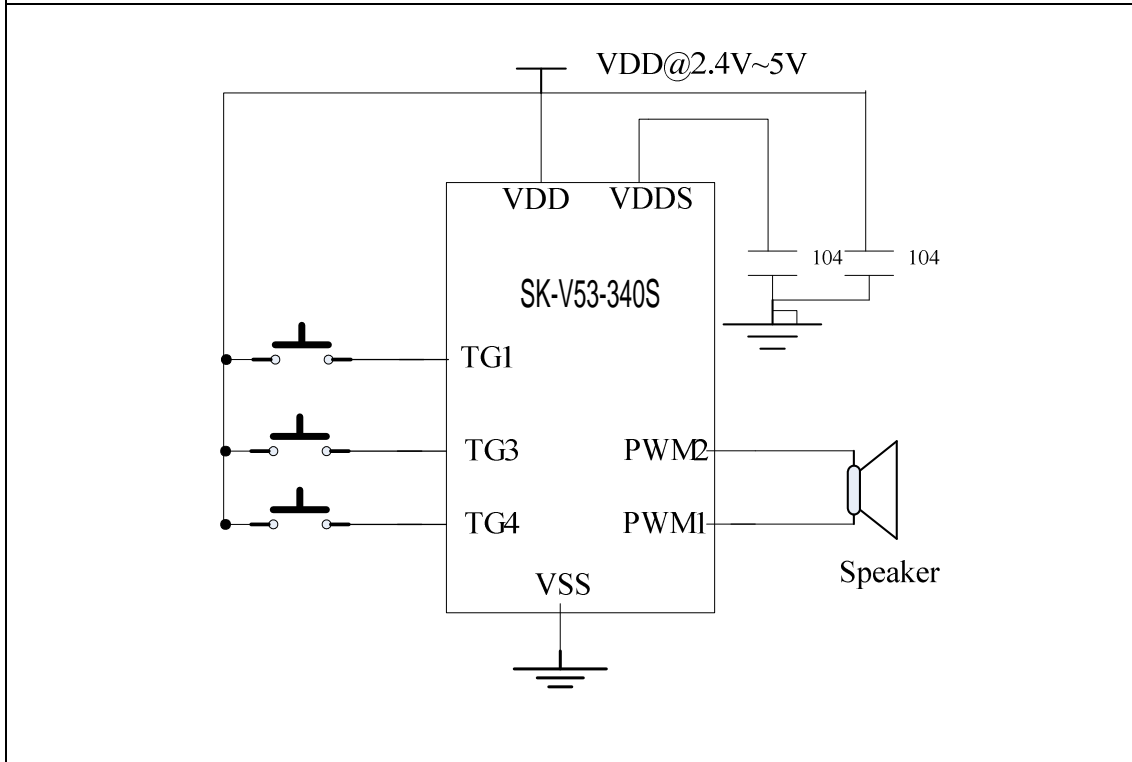
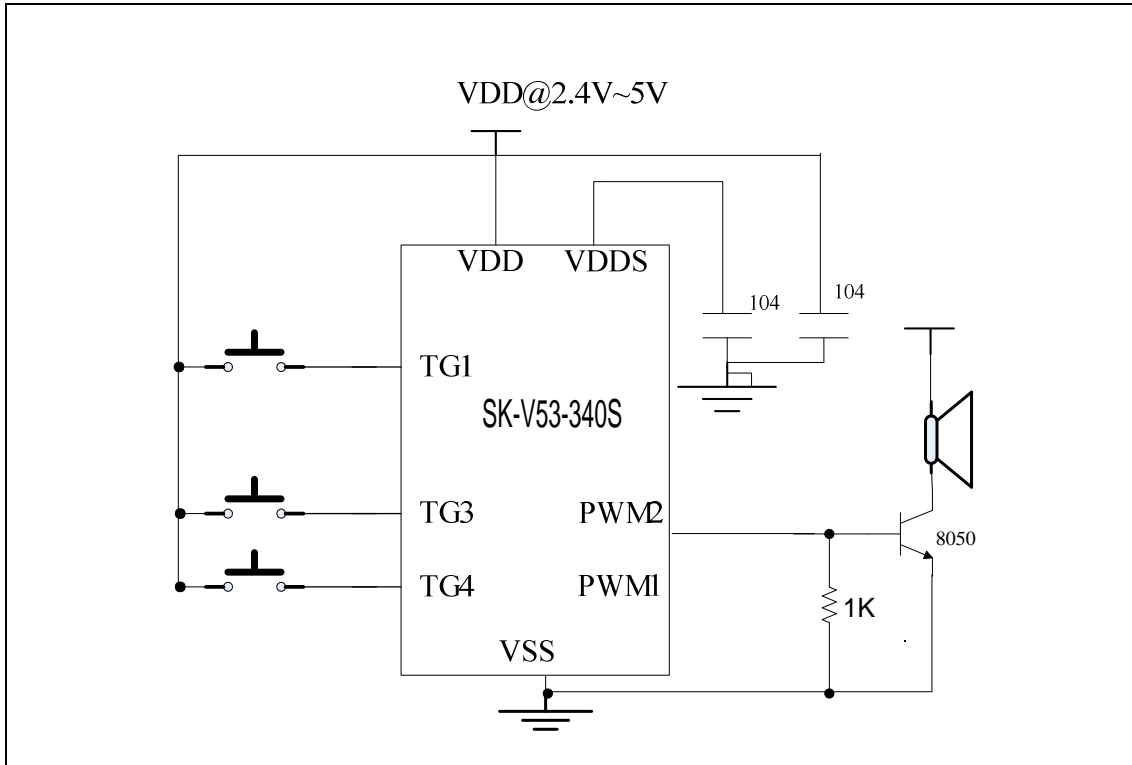
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SK-V53-340S V53 Flash Series

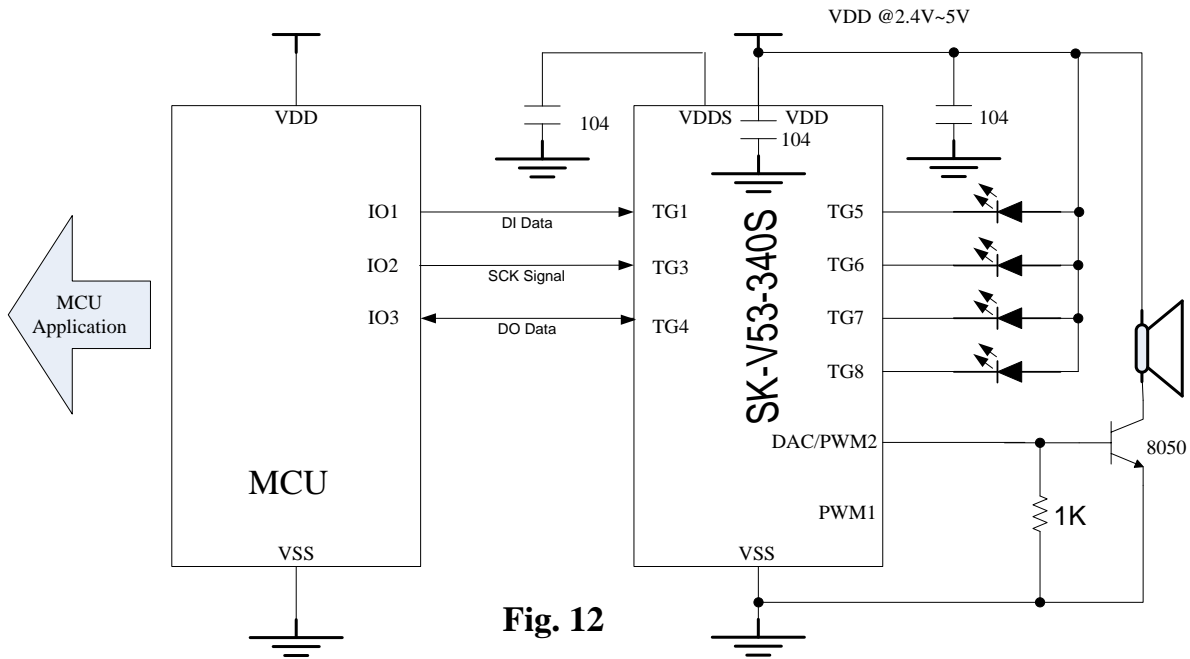
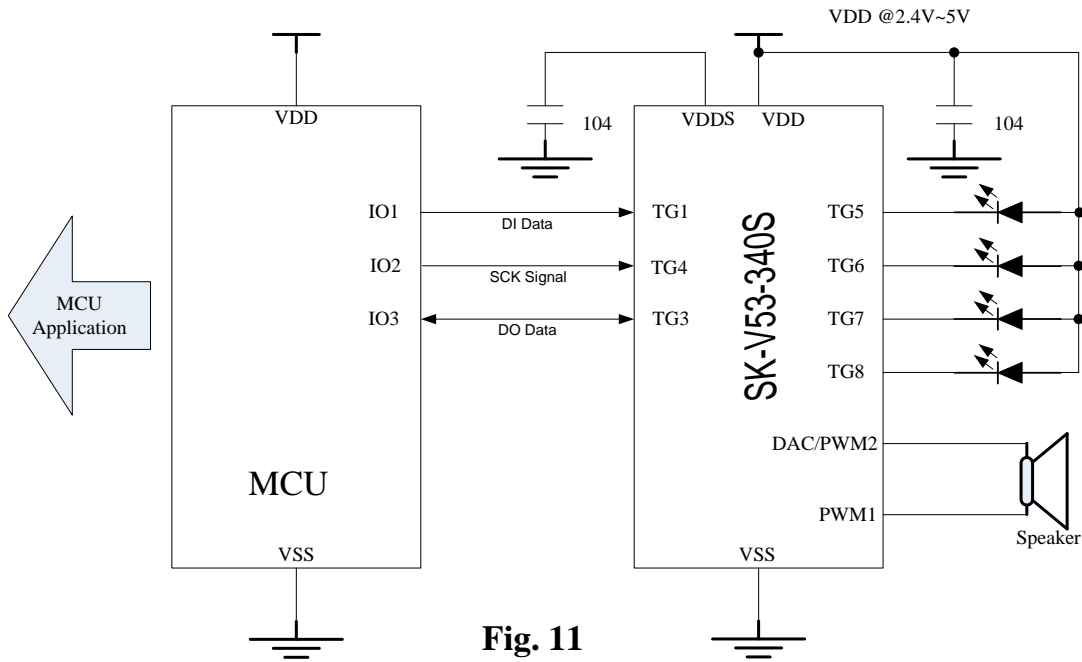
脚位说明

Pin Name	Write pin	MCU Mode	Description
VDD	VDD	VDD	电源供应脚
VDDL		VDDL	LDO 输出供应脚
VDDS		VDDS	外接闪存(SPI Flash)电源
VSS	VSS	VSS	接地脚
PWM1	SCK	PWM1	PWM 脚
PWM2	PWM2	PWM2	PWM 脚/DAO 输出脚
TG1	MOSI	DI	TG1 / SPI DI pin
TG2		SCK	TG2 / Low active RESET / SPI SCK pin
TG3	MISO	DO	TG3 / SPI DO pin
TG4	CSb	CSb	TG4 / CSb
TG5		-	TG5
TG6		-	TG6
TG7		-	TG7
TG8		-	TG8

SOP8应用线路图



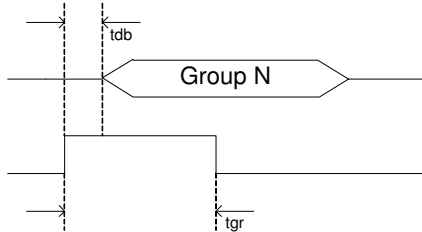
SK-V53-340S 5V CPU Mode



Trigger Timing

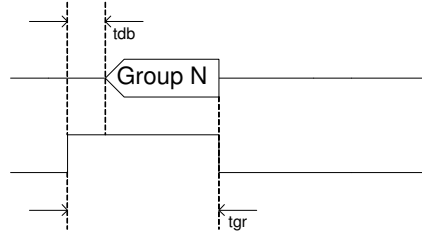
(a) Trigger Pulse Width < Group Length

Option Setting = Edge / Unhold



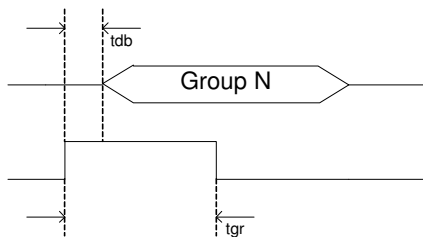
(b) Trigger Pulse Width < Group Length

Option Setting = Edge / Hold



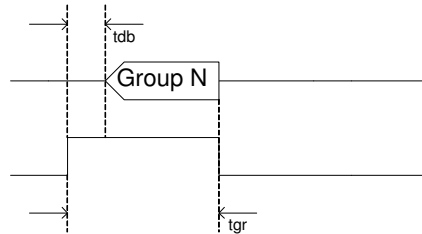
(c) Trigger Pulse Width < Group Length

Option Setting = Level / Unhold



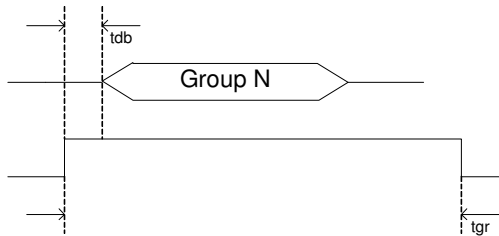
(d) Trigger Pulse Width < Group Length

Option Setting = Level / Hold



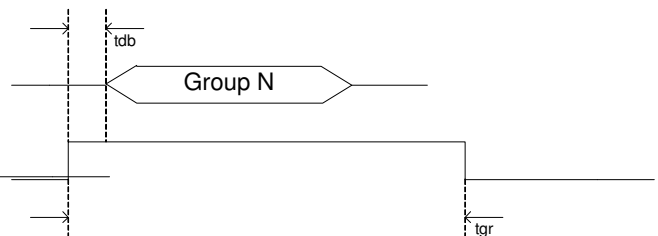
(e) Trigger Pulse Width > Group Length

Option Setting = Edge / Unhold



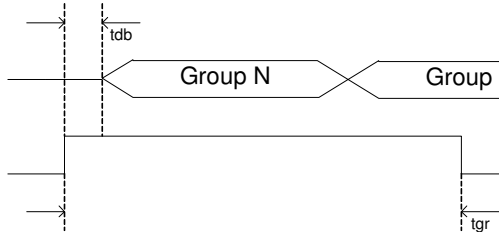
(f) Trigger Pulse Width > Group Length

Option Setting = Edge / Hold



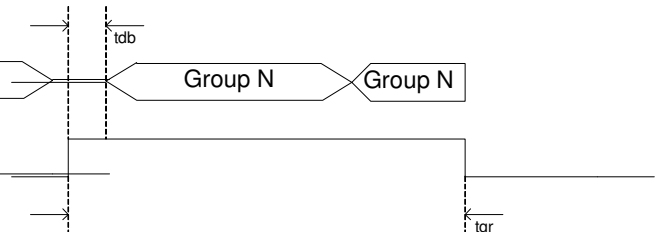
(g) Trigger Pulse Width > Group Length

Option Setting = Level / Unhold

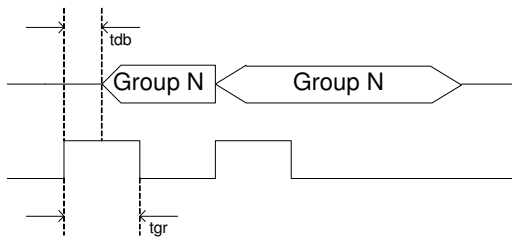


(h) Trigger Pulse Width > Group Length

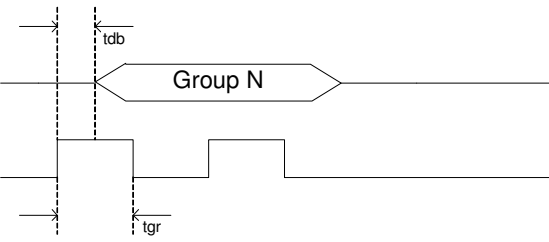
Option Setting = Level / Hold



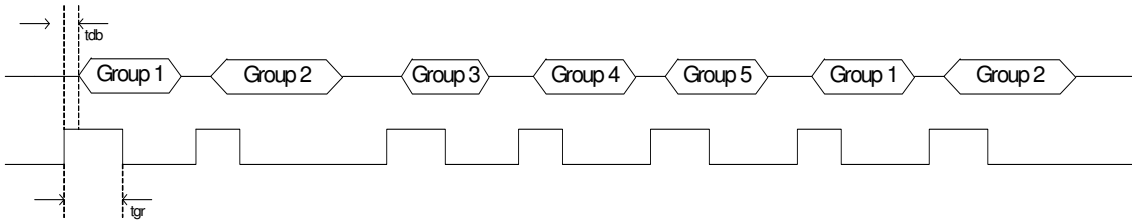
(i) Option Setting = Retrigger



(j) Option Setting = Irretrigger



(k) TG1 = Sequential Trigger & From Group1~Group5





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Trigger Voice Combination Example

Voice File	Description
Voice File A	Hello (1.5")
Voice File B	Good Morning (3")
Voice File C	John (1")
Voice File D	Tom (1")
Voice File E	Mary (1.5")

Group1 = Step1 + Step 2

Group 2 = Step3 + Step 4 + Step 5

Group 3 = Step 6 + Step 7

Group1 = Hello John

Group 2= Hello Tom Good Morning

Group 3 = Good Morning Mary

Step1 = Voice File A

Step 2 = Voice File C

Step 3 = Voice File A

Step 4 = Voice File D

Step 5 = Voice File B

Step 6 = Voice File B

Step 7 = Voice File E

Total use 3 Group , 7 Steps

Voice duration= Hello + Good Morning + John + Tom + Mary

$$= 1.5'' + 3'' + 1'' + 1'' + 1.5''$$

$$= 8''$$

Total duration = 8''(40''-8'' = 32'' space are free , can add more Voice File, If

body=V53040)

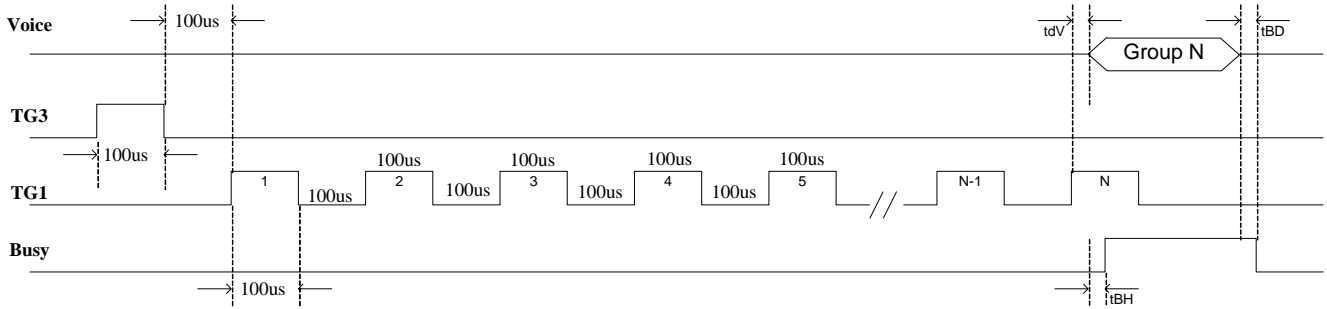
Serial Mode Timing

TG1=Edge/Unhold/Retrigger

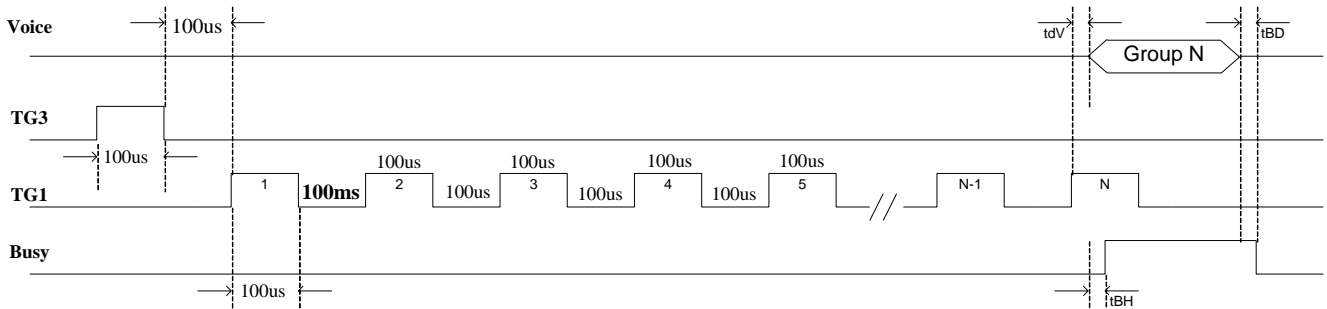
TG3=Reset PIN

※Tool: Controller Trigger

PWM



DAC



DC Characteristics

Symbol	Parameter	Condition	Min	Typ	Max	Unit
V _{OP}	Operating Voltage		2.0		5.0	V
I _{sb}	Standby current	LDO On				Ua
		LDO OFF				uA
I _{OP}	Operating Current	VDD=3V / No Load				uA
I _{OD}	Output drive Current					mA
I _{OS}	Output sink Current					mA
I _{ODP_{WM}}	PWM output drive Current					mA
I _{OSP_{WM}}	PWM output sink Current					mA