

Command:SAP

MS2000 or RM2000 syntax

Shortcut	SAP
Format	SAP [axis]=### ...
Units	Integer code, 0-255 (see below)
Remembered	Using SS Z
Firmware Module	SINGLEAXIS_FUNCTION

Tiger syntax

Shortcut	SAP
Format	SAP [axis]=### ...
Units	Integer code, 0-255 (see below)
Type	Axis-Specific
Remembered	Using [addr#]SS Z
Firmware Module	SINGLEAXIS_FUNCTION

This command sets the type of pattern to generate and configures the clocks. The parameter is a bit-mapped number that determines the characteristics of the motion, with the lowest bits determining the type of pattern. The code is interpreted according to the following table:

Bit	Clear	Set
7	Internal Trigger	External Trigger on Backplane TTL input
6	Polarity of Trigger: positive edge	Polarity of Trigger: negative edge
5	No TTL out	TTL out
4	Polarity of TTL out: active high	Polarity of TTL out: active low
3	Reserved	Reserved
2-0	000 Ramp/Sawtooth Wave (code 0) 001 Triangle Wave (code 1) (period always even number of milliseconds) 010 Square Wave (code 2) (period always even number of milliseconds) 011 Sine Wave (code 3) 100 Variable Triangle Wave (code 4) Tiger v3.55 required 101 Reserved (code 5)	

The Variable Triangle Wave pattern uses the [OS command](#) to change the time in milliseconds it takes to reach to the peak of the waveform.

The TTL inputs for external triggering will individually trigger each axis as follows:

Triggered Axis	Backplane Trigger input address	Backplane TTL out address
0	42	41
1	44	43
2	46	45
3	48	47

Example

```
SAP R=0  
:A
```

Sets up for ramp (sawtooth) pattern, running off internal clock with no TTL outs

```
SAP R=129  
:A
```

Sets up for triangle pattern, running off positive edge external TTL clock with no TTL outs.

```
SAP R=161  
:A
```

Sets up for triangle pattern, running off positive edge external TTL clock with TTL outs. A 250usec pulse is put out at the start of the pattern.



Serial command `<Card Addr#>TTL Y=22` will route the TTL pulses generated when BIT5 is set, to the TTL OUT0 port. Available only in Tiger firmware v3.17 and above.

[commands](#), [tiger](#), [ms2000](#), [singleaxis](#)

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