

Purpose

This note explains new Auto Cal features used to automatically set the voltage scale and rotation of all signals at once.

Procedure

I) Introduction

To access the Auto Cal dialog, left-click on AUTO CAL in the title button area:

🔆 Pro	ject=S	ample 1	l - Bobb	in Site=	=COR	ESTAR Outa	ge=Mockup	Comp=I		CKUP	Cal=1 Fi	le=1 SEC= F	ROW=999 1	UBE=999		
File	Edit	Scree	en To	ols	Util	Help			_							
TLIST	REPO	RT CO	MPARE	HIST	ORY	SUMMARY	MESSAGE	SETUP	AUTO	CAL	CURVE	AUTO LOC	OPTIONS	SCREENI	NG MAP	
1		CH 1	7 C1		CH	1V C1	91		СН	. 40	0 KHz	DIF	185°	91		CI
							G1						C1	G1		

This will bring up the Auto Cal dialog that lets you see the current rules:

ጰ Auto	Cal : Fi	e - bobbin.a	auto_c	al								? X
File I	Mode	Defaults										
List Nan	ne 100	% Hole					•					RUN
		1										
RULE	PROP	CHAI	N		(COIL		GRP		MEAS		
		TYPE	NUM	NUM	MOI	DE	TYPE		VOLI	S	PHASE	:
1	~	RAW			DI	F			6.00	Vpp	40°	-
2	~	RAW			AB	S			6.00	Vmr	50°	
												~
		CH	AN				COI	L	GDD	DUTE	REF	
ENTR	r 1	NAME	TYI	E	NUM	NUM	MODE	TYPE	GRP	ROTE	CHAN	
	1 400	KHz	RA	W	1	1	DIF	None	• 1	1		-
1	2 400	KHz	RA	W	2	2	ABS	None	• 1	2		
	3 200	KHz	RA	W	3	1	DIF	None	2	1	1	
	4 200	KHz	RA	W	4	2	ABS	None	2	2	2	
	5 100	KHz	RA	W	5	1	DIF	None	• 3	1	1	
	5 100	KHz	RA	W	6	2	ABS	None	. 3	2	2	
	7 50 1	KHz	RA	W	7	1	DIF	None	4	1	1	
1	B 50 1	KHz	RA	W	8	2	ABS	None	4	2	2	
9	9 міх	1	MI	х	1	1	DIF	None	• 5			
10	XIM C	2	MI	х	2	1	DIF	None	6			-
										OK	Car	ncel

Use the **File** -> **Open** menu to open a different set of rules. The set listed above is just an example and will be explained further below.



To run one of the current auto cal rule sets, scroll the desired signal into the lissajous and right-click in the **AUTO CAL** button and select the rule set:

IESSAGE	SETUP	AUTO	CAL CURVE AUTO LOC	OPTIO	NS
L			✓ 100% Hole	=999	ΤU
:2	54		Noise Horizontal	KHz	DI
	G1				

To run the last used rule set, middle-click in the **AUTO CAL** button. If **Auto Cal Hotkey** is enabled in the **OPTIONS** dialog under **Miscellaneous**, you can also run the current rules by hitting the **A** key.

The name of the rule set will be displayed in the message box at the bottom of the screen:

-	<u>a</u> nalanalananananananananananananananana	$\sim \sim $	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
A A	Auto Cal 100% Hole	05/10/2021	20:40:02



II) Creating and Editing Rules

To create new rules or edit existing ones, click on **Mode** -> **Edit Mode** menu in the Auto Cal dialog. It will add the editing features shown below:

📌 Auto	Cal : Fil	e - bobbin.a	iuto_c	al								? X
File 1	Mode	Defaults										
List Nan	ne 100	8 Hole					-		RUN	ADD LIS		LIST
									<u></u>			
RULE	PROP	CHAI	N		, (COIL		GRP		MEAS		*
		TYPE	NUM	NUM		DE	TYPE		VOLI	'S	PHASE	:
1	1	RAW			DI	F		-	6.00	Vpp	40°	_
2	√	RAW			AB	S			6.00	Vmr	50°	
*							_		_		_	
	_							_				
ENTRY	<i>x</i>	СН	AN	-			COI	L	GRP	RULE	REF	
ENTRY	1	CH	AN TYI	?E	NUM	NUM	COI MODE	L TYPI	GRP	RULE	REF CHAN	•
ENTR	r 1 400	CH NAME KHz	AN TYI RA	PE I	NUM 1	NUM 1	COI MODE DIF	L TYPI None	GRP	RULE	REF CHAN	
ENTR	2 1 1 400 2 400	CH NAME KHz KHz	AN TYI RA RA	PE	NUM 1 2	NUM 1 2	COI MODE DIF ABS	L TYPI None None	GRP e 1 e 1	RULE 1 2	REF CHAN	V
ENTR	r 1 400 2 400 3 200	CH NAME KHz KHz KHz	AN TYI RA RA RA	PE I	NUM 1 2 3	NUM 1 2 1	COI MODE DIF ABS DIF	L TYPI None None	GRP = 1 = 1 = 2	RULE	REF CHAN	~
ENTRY	r 1 400 2 400 3 200 4 200	CH NAME KHz KHz KHz KHz	AN TYI RA RA RA	PE W W W W	NUM 1 2 3 4	NUM 1 2 1 2	COI MODE DIF ABS DIF ABS	L TYPI None None None	GRP GRP 1 1 2 2 2 2 2	RULE 1 2 1 2	REF CHAN	
ENTR	r 1 400 2 400 3 200 4 200 5 100	CH NAME KHz KHz KHz KHz KHz	AN TYI RA RA RA RA	PE S W W W W W	NUM 1 2 3 4 5	NUM 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF	L TYPI None None None None	GRP GRP 1 1 2 2 2 3 3	RULE 1 2 1 2 1	REF CHAN 1 2 1	
	r 1 400 2 400 3 200 4 200 5 100 5 100	CH NAME KHz KHz KHz KHz KHz KHz	AN TYI RA RA RA RA RA	PE I W W W W W	NUM 1 2 3 4 5 6	NUM 1 2 1 2 1 2 2	COI MODE DIF ABS DIF ABS DIF ABS	L TYPF None None None None	GRP a 1 a 1 a 2 a 2 a 3 a 3	RULE 1 2 1 2 1 2	REF CHAN 1 2 1 2	
	r 1 400 2 400 3 200 4 200 5 100 5 100 7 50 1	CH NAME KHz KHz KHz KHz KHz KHz KHz	AN TYI RA RA RA RA RA	PE	NUM 1 2 3 4 5 6 7	NUM 1 2 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF	L TYPI None None None None None	GRP GRP 1 1 2 2 2 3 3 4 4	RULE 1 2 1 2 1 2 1 2	REF CHAN 1 2 1 2 1	
	r 1 400 2 400 3 200 4 200 5 100 5 100 5 100 5 100 5 100 5 100	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz	AN TYI RA RA RA RA RA RA	PE I W W W W W W W	NUM 1 2 3 4 5 6 7 8	NUM 1 2 1 2 1 2 1 2 1 2 1 2	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS	L TYPI None None None None None	GRP GRP 1 1 2 2 2 3 3 4 4 4 4	RULE 1 2 1 2 1 2 1 2 1 2	REF CHAN 1 2 1 2 1 2 1 2 2	
	r 1 400 2 400 3 200 4 200 5 100 5 1000 5 1000 5 1000 5 1000 5 1000 5 1000 5 1000 5 10000 5 10	CH NAME KHz KHz KHz KHz KHz KHz KHz L	AN TYI RA RA RA RA RA RA MI	PE	NUM 1 2 3 4 5 6 7 8 1	NUM 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF	L TYPI None None None None None None	GRP GRP 1 1 2 2 2 3 3 3 4 4 5	RULE 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	REF CHAN 1 2 1 2 1 2 2	
	r 1 400 2 400 3 200 4 200 5 100 5 100 5 100 7 50 1 3 50 1 9 MIX 0 MIX	CH NAME KHz KHz KHz KHz KHz KHz KHz 1 2	AN TYI RA RA RA RA RA RA MI MI	PE W W W W W W W W W W X X	NUM 1 2 3 4 5 6 7 8 1 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF ABS	L TYPI None None None None None None	GRP GRP 1 1 2 2 3 3 3 4 3 4 5 6 6 6	RULE 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	REF CHAN 1 2 1 2 1 2 1 2	
	r 1 400 2 400 3 200 4 200 5 100 5 100 5 100 7 50 1 3 50 1 9 MIX 0 MIX	CH NAME KHz KHz KHz KHz KHz KHz KHz 1 2	AN TYI RA RA RA RA RA RA MI MI	PE W W W W W W W W W W X X	NUM 1 2 3 4 5 6 7 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 1 2 1 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None	GRP GRP 1 1 2 2 3 3 3 4 3 4 5 6 6	RULE 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	REF CHAN 1 2 1 2 1 2 1 2	
	r 1 400 2 400 3 200 4 200 5 100 5 100 5 100 7 50 1 3 50 1 9 MIX 0 MIX	CH NAME KHz KHz KHz KHz KHz KHz KHz 1 2	AN TYH RA RA RA RA RA RA MI MI	PE W W W W W W W W X X	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None	GRP GRP 1 1 2 2 3 2 3 3 4 4 5 5 6 5 6	RULE 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	REF CHAN 1 2 1 2 1 2	

This will enable the editing buttons. The table lists which channels a given rule will affect.

When the propagate field **PROP** is not checked, the rule will be applied to all channels satisfying all the criteria. For example, below a specific channel number is specified, and there is only one **RAW** channel **1 DIF**.

File M		e - bobbin _i a	uto_c	al							-	? ×
	Mode	Defaults										
List Nam	ne 100	% Hole					•		RUN			IIST
RULE	PROP	CHAI	N		(COIL		GRP		MEAS		*
		TYPE	NUM	NUM	I MOI	DE	TYPE		VOLI	'S	PHASE	
1		RAW	1		DI	F			6.00	Vpp	40°	
2		RAW			AB	S			6.00	Vmr	50°	
*									_		_	
			2									
							<u> </u>					
												-
		CH	AN				C01				DFF	
ENTRY	¢ _ 1	CH	AN	e 1	NUM	NUM	COI	L TYPE		RULE	REF CHAN	
ENTRY	(1 L 400	CH NAME KHz	AN TYI RA	PE 1	NUM 1	NUM 1	COI MODE DIF	L TYPE None		RULE	REF CHAN	V
ENTRy	2 1 1 400 2 400	CH NAME KHz KHz	AN TYI RA RA	PE 1 W	NUM 1 2	NUM 1 2	COI MODE DIF ABS	L TYPE None None		RULE	REF CHAN	~
ENTRY 1 2 3	2 1 L 400 2 400 3 200	CH NAME KHz KHz KHz	AN TYI RA RA RA	PE 1 W V	NUM 1 2 3	NUM 1 2 1	COI MODE DIF ABS DIF	L TYPE None None	1 2 2	RULE 1 2	REF CHAN	•
ENTRY 1 2 3	2 1 1 400 2 400 3 200 4 200	CH NAME KHz KHz KHz KHz	AN TYI RA RA RA RA	PE 1 W V W	NUM 1 2 3 4	NUM 1 2 1 2	COI MODE DIF ABS DIF ABS	L TYPE None None None	1 1 2 2 2	RULE	REF CHAN	
ENTRY 1 2 3 4 5	I 400 2 400 3 200 4 200 5 100	CH NAME KHz KHz KHz KHz KHz	AN TYI RA RA RA RA	PE 1 W W W W W	NUM 1 2 3 4 5	NUM 1 2 1 2 1 2	COI MODE DIF ABS DIF ABS DIF	L TYPE None None None None	1 1 2 2 2 3 3	RULE 1 2 2	REF CHAN	
ENTRY 1 2 3 4 5 6	Image: 2 minipage Image: 2 minipage L 400 2 400 3 200 4 200 5 100 5 100	CH NAME KHz KHz KHz KHz KHz KHz	AN TYI RA RA RA RA RA	PE 1 W W W W W W W W	NUM 1 2 3 4 5 6	NUM 1 2 1 2 1 2 1 2	COI MODE DIF ABS DIF ABS DIF ABS	L TYPE None None None None	1 1 2 2 2 3 3 3	RULE 1 2 2	REF CHAN	
ENTR)	I 400 1 400 2 400 3 200 4 200 5 100 5 100 7 50	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz	AN TYI RA RA RA RA RA RA	PE 1 W V W W W W W W	NUM 1 2 3 4 5 6 7	NUM 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None	1 1 2 2 2 3 3 3 4 4	RULE 2 2 2	REF CHAN	
ENTR)	I 400 2 400 3 200 4 200 5 100 5 100 5 50 3 50	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz KHz KHz	AN TYI RA RA RA RA RA RA RA	PE 1 W V W V W V W V W V W V W V	NUM 2 3 4 5 6 7 8	NUM 1 2 1 2 1 2 1 2 1 2 2 1 2	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS	L TYPE None None None None None None	2 1 2 1 2 2 2 2 2 3 3 3 2 3 2 4 2 4 2 4 4 4	RULE 2 2 2	REF CHAN	
ENTR)	2 1 1 400 2 400 3 200 4 200 5 100 5 100 7 50 3 50 3 50 3 50	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz KHz KHz	AN TYI RA RA RA RA RA RA RA MI	PE 1 WW WW WW WW WW WW X	NUM 1 2 3 4 5 6 7 8 1	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None None None	1 1 1 2 2 3 3 4 4 4 5	RULE 1 2 2 2 2	REF CHAN	
ENTR)	Image: 2 minipage Image: 2 minipage 1 400 2 400 3 200 4 200 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 5 100 4 20 5 100 5 100 5 100 5 10 5 10 5 10 5 10 5 10 5 10 5 10 5 10 5 10 <	CH NAME KHz KHz KHz KHz KHz KHz KHz L 2	AN TYI RA RA RA RA RA RA MI MI	PE 1 W W W W W W W W W X X X	NUM 1 2 3 4 5 6 7 7 8 1 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None None None	2 1 2 1 2 2 2 2 2 3 2 3 2 3 2 3 2 3 2 4 2 4 2 4 2 5 2 5 2 6 6	RULE 2 2 2	REF CHAN	
ENTR)	1 400 400 2400 2200 4200 5100 <	CH NAME KHz KHz KHz KHz KHz KHz KHz L 2	AN TYH RA RA RA RA RA RA MI MI	PE 1 WWW WW WW WW WW WW XX	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None None	2 1 2 1 2 2 2 2 2 3 3 3 4 4 4 4 5 5 6 6	RULE 2 2 2 2	REF CHAN	
ENTR)	1 400 2 400 3 200 4 200 5 100 5 100 7 50 3 50 9 MIX	CH NAME KHz KHz KHz KHz KHz KHz KHz L 2	AN TYI RA RA RA RA RA RA MI MI	PE 1 WWW WW WW WW WW WW WW	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None None	2 1 2 1 2 2 2 3 3 3 4 4 5 5 6 6	RULE 2 2 2 2 2	REF CHAN	

The rule number is highlighted in yellow and the fields that match in green.

If we clear the channel number (click MB), now all RAW and DIF will match rule 1:

🔆 Auto	Cal : Fil	e - bobbin.a Defaulte	uto_cal	E.		-					? X
riie ri	louc	Deradito		C	eare	d					
List Nam	e 100	% Hole		/ح		_		RUN	ADD LIS	T DEL	LIST
DUTE	DROR	CHAI	N		COIL		CDD		MEAS		
ROLL	PROP	TYPE	NUM	UM MOI	DE	TYPE	GRP	VOLT	S	PHASE	
1		RAW		DI	F			6.00	Vpp	40°	A
2		RAW		AE	S			6.00	Vmr	50°	
*	_					_		_			
											•
		СН	AN			COI	L			REF	
ENTRY		CH	AN TYPE	NUM	NUM	COI	L TYPE	GRP	RULE	REF CHAN	
ENTRY 1	400	CH NAME KHz	AN TYPE RAW	NUM 1	NUM 1	COI MODE DIF	L TYPE None	GRP 1	RULE 1	REF CHAN	V
ENTRY 1 2	400 400	CH NAME KHz KHz	AN TYPE RAW RAW	NUM 1 2	NUM 1 2	COI MODE DIF ABS	L TYPE None None	GRP 1 1	RULE 1 2	REF CHAN	V
ENTRY 1 2 3	400 400 200	CH NAME KHz KHz KHz	AN TYPE RAW RAW RAW	NUM 1 2 3	NUM 1 2 1	COI MODE DIF ABS DIF	L TYPE None None	GRP 1 1 2	RULE 1 2 1	REF CHAN	
ENTRY 1 2 3 4	400 400 200 200	CH NAME KHz KHz KHz KHz	AN TYPE RAW RAW RAW RAW	NUM 1 2 3 4	NUM 1 2 1 2	COI MODE DIF ABS DIF ABS	L TYPE None None None	GRP 11 12 2 2	RULE 1 2 1 2	REF CHAN	
ENTRY 1 2 3 4 5	1 400 400 200 200 100	CH NAME KHz KHz KHz KHz KHz	AN TYPE RAW RAW RAW RAW RAW	NUM 1 2 3 4 5	NUM 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF	L TYPE None None None None	GRP 1 1 2 2 2 3	RULE 1 2 1 2 1	REF CHAN	
ENTRY 1 2 3 4 5 6	400 400 200 200 100	CH NAME KHz KHz KHz KHz KHz KHz	AN TYPE RAW RAW RAW RAW RAW RAW	NUM 1 2 3 4 5 6	NUM 1 2 1 2 1 2 1 2	COI MODE DIF ABS DIF ABS DIF ABS	L TYPE None None None None None	GRP 1 1 2 2 2 3 3 3	RULE 1 2 1 2 1 2	REF CHAN	
ENTRY 1 2 3 4 5 6 7	400 400 200 200 100 100 50 1	CH NAME KHz KHz KHz KHz KHz KHz KHz	AN TYPE RAW RAW RAW RAW RAW RAW RAW	NUM 1 2 3 4 5 6 7	NUM 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None None	GRP 1 1 2 2 2 3 3 3 3 4	RULE 1 2 1 2 1 2 1 2 1	REF CHAN	
ENTRY 1 2 3 4 5 6 7 8	400 400 200 200 100 50 1 50 1	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz	AN TYPE RAW RAW RAW RAW RAW RAW RAW	NUM 1 2 3 4 5 6 7 8	NUM 1 2 1 2 1 2 1 2 1 2 2 1 2	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS	L TYPE None None None None None None	GRP 1 1 2 2 2 3 3 3 4 4 4	RULE 1 2 1 2 1 2 1 2 1 2	REF CHAN	
ENTRY 1 2 3 4 5 6 7 8 9 9	400 400 200 200 100 100 50 I 50 I MIX	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz 1	AN TYPE RAW RAW RAW RAW RAW RAW RAW RAW	NUM 1 2 3 4 5 6 7 8 8	NUM 1 2 1 2 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS	L TYPE None None None None None None None	GRP 1 1 2 2 3 3 4 4 5	RULE 1 2 1 2 1 2 1 2 2	REF CHAN	
ENTRY 1 2 3 4 4 5 6 6 7 7 8 9 9 10	400 400 200 200 100 100 50 I 50 I MIX MIX	CH NAME KHz KHz KHz KHz KHz KHz L 2	AN TYPE RAW RAW RAW RAW RAW RAW RAW MIX	NUM 1 2 3 4 5 6 7 8 1 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None None None	GRP 1 1 2 2 3 3 3 4 4 4 4 5 5 6	RULE 1 2 1 2 1 2 1 2 2	REF CHAN	
ENTRY 1 2 3 4 5 6 6 7 7 8 9 9 10	1 400 400 200 200 100 100 50 1 50 1 MIX MIX	CH NAME KHz KHz KHz KHz KHz KHz L 2	AN TYPE RAW RAW RAW RAW RAW RAW RAW MIX MIX	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None None	GRP 1 1 2 2 2 3 3 3 4 4 4 5 6	RULE 1 2 1 2 1 2 2	REF CHAN	
ENTRY 1 2 3 4 5 6 7 7 8 9 10	1 400 200 200 100 100 50 I 50 I MIX MIX	CH NAME KHz KHz KHz KHz KHz KHz L 2	AN TYPE RAW RAW RAW RAW RAW RAW RAW MIX MIX	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None None	GRP 1 1 2 2 2 3 3 3 4 4 4 5 6	RULE 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	REF	

More than one rule set can be active. In this case there are two:

💉 Auto Cal : File - bobbin.auto_cal
File Mode Defaults
List Name 100% Hole
100% Hole
BULE Phoise Horizontal
TYPE NUM NUM MODE

To add a rule set click **ADD LIST**. To remove the current one, click **DEL LIST**. To change the name of the current rule set, just type in the drop down box.

To add a rule to the current set, click in the * symbol. It will initially have defaults based on the last rule.

TIP : Enable help by clicking the **?** in the caption area. Then move the cursor to the * to see the various options to copy and paste rules. This is true of many CoreStar tables.



III) Effect of a Rule

The **MEAS** field controls the effect a rule will have on each channel to which it applies. The following are not typical and are just for demonstration purposes.

📌 Auto	Cal : Fil	e - bobbin.a	uto_c	al							-	? ×
File 1	Mode	Defaults										
List Nan	ne 100	% Hole					•		RUN A			IST
RULE	PROP	CHAI	N		(COIL		GRP		MEAS		*
		TYPE	NUM	NUM		DE	TYPE		VOLT	S	PHASE	
1	v ./	RAW			DI	.r			6.00	Vmr	40°	
2	v	RAW			AE	55			7.00	Vmr	50°	
							_				_	
ENTR	,	CH	AN				COI	L	GRP	RULE	REF	
	1	NAME	TYI	PE	NUM	NUM	MODE	TYPE	5		CHAN	
1	L 400	KHz	RA	W	1	1	DIF	None	1	1		^
2	2 400	KHz	RA	W	2	2	ABS	None	• 1	2		
1	3 200	KHz	RA	W	3	1	DIF	None	2	1	1	
4	1 200	KHz	RA	W	4	2	ABS	None	e 2	2	2	
	5 100	KHz	RA	W	5	1	DIF	None	3	1	1	
	5 100	KHz	RA	W	6	2	ABS	None	a 3	2	2	
					_	-				-		
	7 50 1	(Hz	RA	W	7	1	DIF	None	4	1	<u>+</u>	
8	7 50 1 3 50 1	(Hz (Hz	RA RA	W W	7 8	2	ABS	None None	• 4 • 4	2	2	
8	7 50 1 3 50 1 9 MIX	KHz KHz 1	RA RA MI	W W X	7 8 1	1 2 1	ABS DIF	None None None	4 4 4 5	2	2	
29 10	7 50 1 3 50 1 9 MIX 0 MIX	KHz KHz 1 2	RA RA MI MI	W W X X	7 8 1 2	1 2 1 1	ABS DIF DIF	None None None None	4 4 4 5 6 6	2	2	~
	7 50 1 3 50 1 9 MIX 0 MIX	KHz KHz 1 2	RA RA MI MI	W W X X	7 8 1 2	1 2 1 1	ABS DIF DIF	None None None	4 4 4 5 6 6	2	2	•
	7 50 1 3 50 1 9 MIX 0 MIX	KHz KHz 1 2	RA RA MI MI	W W X X	7 8 1 2	1 2 1 1	ABS DIF DIF	None None None	4 4 4 5 6 6	2	2	-

For rule 1 above, it says to use Vmr (Volts Max Rate) and set the voltage scale to 6.0 and the phase to

40°. Vmr will use Vpp for the voltage scale and Vmr for the phase. You can also choose Vpp which will be used for the scale and phase.

The third option is Vvm (Volts Vert Max) which will use Vvm for the scale, but not affect the rotation. When using Vvm, it is important to set the rotation with a previous rule set.

A final option uses a new measurement called Vvb (Volts Vert Base). It is similar to Vvm but uses the first red line in the expanded chart for the min value. This is useful in array data as described below.

Since the propagate field **PROP** is checked, the voltage scale on channel 1 will be propagated to the remaining channels that match rule 1. For setting scale, this is identical to the results obtained using the **Set Volts** dialog by:

- 1. Setting a lissajous to channel 1
- 2. Rotate it as desired,
- 3. Make a Vmr meas,
- 4. Click **VOLTS** button in the lissajous,
- 5. In the Set Volts dialog, select Same Ratio and Volts = 6,



6. Hit **Ok**

📌 Set Volts 💦 ? 🗙
Propagate
Same Volts
Same Ratio 📃
Which Chans
This Channel
This Coil
This Group
All Channels
Volts 6
OK Cancel

The old **Set Volts** dialog, of course, does not rotate the data.

The **Propagate | Same Volts** above is not needed in the **Auto Cal**. Just uncheck the **PROP** field and it will use the same volts instead of same ratio.

If the **VOLTS** field is blank (as below), the **Auto Cal** rule will rotate but not set scale. This is used by the **Noise Horizontal** rule below:

📌 Auto	Cal : Fil	e - bobbin.a	uto_c	al								? ×
File M	1ode	Defaults										
List Nam	ne Noi	se Hori	zont	al			•					IST
RULE	PROP	CHAI	N		(COIL		GRP		MEAS		*
		TYPE	NUM	NUM	MOI	DE	TYPE		VOLI	S	PHASE	
		RAW			DI	F.				Vpp	0.	
~												
												_
ENTRY		CH	AN				CO	Ľ	GRP	RULE	REF	
	1	NAME	TYP	E :	NUM	NUM	MODE	TYPE			CHAN	
1	400	KHz	RA	W	1	1	DIF	None	1	1		
2	400	KHZ	RA	W	2	2	ABS	None	1	-		
	200	KHZ	RA	W	3	1	DIF	None	2	1		
	100	KHZ VH-	RA DA	W	4	2	ADS	None	2	1		
-	100	KHZ	RA	57	6	2	ABS	None	3	-		
	50 1	(Hz	RA	W	7	1	DIF	None	4	1		
5	50 1	(Hz	RA	W	8	2	ABS	None	4			
9	MIX	1	MI	x	1	1	DIF	None	5			
10	MIX	2	MI	x	2	1	DIF	None	6			-
1											1	
										OK	Can	cel

Conversely, if the **PHASE** field is blank, it will set the voltage scale but not rotate the data. This allows two different signals to be used for rotation and voltage scale.

A channel will be affected by a rule if it matches all its criteria. If a field is blank, the criteria is ignored. If more than one rule matches a channel, the last one wins.

For example, if a rule is set for **CHAN TYPE = RAW** and **COIL MODE = DIF**, only raw differential channels match:

File M	Cal : Fik 1ode	e - bobbin.a Defaults	auto_ca	al							•	?
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		TYPE	NUM	NUM	I MOI	DE	TYPE	- Ond	VOLI	'S	PHASE	
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ENTRY		CH	AN	(COI	Ľ	GRP	RULE	REF	
ENTRY	ľ	CH	AN TYF	PE	NUM	NUM	COI MODE	L TYPE	GRP	RULE	REF CHAN	
ENTRY 1	400	CH NAME KHz	AN TYF RA	e W	NUM 1	NUM 1	COI MODE DIF	L TYPE None	GRP	RULE	REF CHAN	•
ENTRY 1 2	400 400	CH NAME KHz KHz	AN TYF RA RA	e W W	NUM 1 2	NUM 1 2	COI MODE DIF ABS	L TYPE None None	GRP 1 1	RULE	REF CHAN	
ENTRY 1 2 3	400 400 200	CH NAME KHz KHz KHz	AN TYF RAI RAI RAI	N M M M	NUM 1 2 3	NUM 1 2 1	COI MODE DIF ABS DIF	L TYPE None None	GRP 1 1 2 2	RULE 1 1	REF CHAN	
ENTRY 1 2 3 4	400 400 200 200	CH NAME KHz KHz KHz KHz	IAN TYF RAI RAI RAI RAI	PE W W W W	NUM 1 2 3 4	NUM 1 2 1 2	COI MODE DIF ABS DIF ABS	L TYPE None None None	GRP 1 1 2 2 2 2	RULE 1 1	REF CHAN	
ENTRY 1 2 3 4 5	400 400 200 200 100	CH NAME KHz KHz KHz KHz KHz	AN TYF RA RA RA RA	PE W W W W W	NUM 1 2 3 4 5	NUM 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF	L TYPE None None None None	GRP 1 1 2 2 2 2 3 3	RULE 1 1	REF CHAN	<u></u>
ENTRY 1 2 3 4 5 6	400 400 200 200 100 100	CH NAME KHz KHz KHz KHz KHz KHz	IAN TYE RAI RAI RAI RAI RAI	PE W W W W W W	NUM 1 2 3 4 5 6	NUM 1 2 1 2 1 2 1 2	COI MODE DIF ABS DIF ABS DIF ABS	L TYPE None None None None None	GRP 1 1 2 2 2 3 3 3 3	RULE 1 1 1	REF CHAN	
ENTRY 1 2 3 4 5 6 7	400 400 200 200 100 100 50 F	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz	AN TYF RA RA RA RA RA	PE W W W W W W W W	NUM 1 2 3 4 5 6 7	NUM 1 2 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None	GRP 1 1 2 2 2 3 3 3 3 4 4	RULE 1 1 1 1	REF CHAN	
ENTRY 1 2 3 4 5 6 7 8	 400 400 200 200 100 100 50 F 50 F 	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz KHz KHz	AN TYF RA RA RA RA RA RA	PE W W W W W W W W	NUM 1 2 3 4 5 6 7 8	NUM 1 2 1 2 1 2 1 2 1 2 1 2 2	COI MODE DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None None	GRP GRP 1 1 1 2 2 3 3 4 3 4 4 4	RULE 1 1 1 1	REF CHAN	
ENTRY 1 2 3 4 4 5 6 7 7 8 9	 400 400 200 200 100 100 50 F 50 F MIX 	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz KHz KHz	AN TYF RAI RAI RAI RAI RAI RAI MI	PE W W W W W W W W W W	NUM 1 2 3 4 5 6 7 8 1	NUM 1 2 1 2 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS	L TYPE None None None None None None None	GRP GRP 1 1 2 2 3 3 4 3 4 4 5	RULE 1 1 1 1	REF CHAN	
ENTRY 1 2 3 4 5 6 7 7 8 9 9 10	 400 400 200 200 100 100 50 F 50 F MIX MIX 	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz KHz L 2	AN TYE RA RA RA RA RA RA RA MI	PE W W W W W W W W W W X X	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF ABS	L TYPE None None None None None None None	GRP GRP 1 1 2 2 3 3 4 3 4 4 5 6	RULE 1 1 1 1	REF CHAN	
ENTRY 1 2 3 4 5 6 6 7 8 9 9 10	400 400 200 100 100 50 F 50 F 50 F MIX MIX	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz CHz 1 2	AN TYF RA RA RA RA RA RA RA MI	PE W W W W W W W W W X X	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None None None	GRP GRP 1 1 2 2 2 3 3 4 4 4 5 5 6	RULE 1 1 1	REF CHAN	
ENTRY 1 2 3 4 5 6 7 7 8 9 9 10	400 400 200 200 100 100 50 F 50 F MIX MIX	CH NAME KHz KHz KHz KHz KHz KHz CHz CHz 1 2	AN TYF RAI RAI RAI RAI RAI RAI MII	PE W W W W W W W W X X	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None None	GRP GRP 1 2 2 3 3 4 4 4 5 5 6 6	RULE 1 1 1 1	REF CHAN	
ENTRY 1 2 3 4 5 6 7 7 8 9 10	400 400 200 200 100 100 50 P 50 P 50 P MIX MIX	CH NAME KHz KHz KHz KHz KHz KHz CHz 1 2	AN TYF RA' RA' RA RA RA RA MI	PE W W W W W W W W W W X X X	NUM 1 2 3 4 5 6 7 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 1 2 1 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None None	GRP 1 1 2 2 3 3 4 4 4 4 5 5 6	RULE 1 1 1 1	REF CHAN	

But if you clear the **COIL MODE** (middle-click on it), now all raw channels match because the coil mode is ignored:

	Cal : File	e - bobbin.a	iuto_ca	al								? ×	
File M	1ode	Defaults											
List Nam	ne Noi	se Hori	zont	al			•		RUN	ADD LIS	ST DEL I	IST	
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ENTRY	400	CH NAME KHz	AN TYF RA	e ?E	NUM 1	NUM 1	COI MODE DIF	L TYPE None	GRP 1	RULE 1	REF CHAN		
ENTRY 1 2	400 400	CH NAME KHz KHz	AN TYF RA RA	PE W W	NUM 1 2	NUM 1 2	COI MODE DIF ABS	L TYPE None None	GRP 1 1	RULE 1 1	REF CHAN		
ENTRY 1 2 3	400 400 2400 3200	CH NAME KHz KHz KHz	AN TYF RA RA RA	PE W W	NUM 1 2 3	NUM 1 2 1	COI MODE DIF ABS DIF	L TYPE None None None	GRP 1 1 2	RULE 1 1 1	REF CHAN	~	
ENTRY 1 2 3 4	400 400 2400 3200 4200	CH NAME KHz KHz KHz KHz	AN TYF RA RA RA RA	PE W W W W	NUM 1 2 3 4	NUM 1 2 1 2	COI MODE DIF ABS DIF ABS	L TYPE None None None	GRP 1 1 2 2 2	RULE 1 1 1 1	REF CHAN	•	
ENTRY 1 2 3 4 5	 400 400 400 200 200 100 	CH NAME KHz KHz KHz KHz KHz	AN TYF RA RA RA RA	PE W W W W W	NUM 1 2 3 4 5	NUM 1 2 1 2 1 2	COI MODE DIF ABS DIF ABS DIF	L TYPE None None None None None	GRP 1 1 2 2 2 3 3	RULE 1 1 1 1 1 1	REF CHAN	~	
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ENTRY 11 22 33 44 55 66 7	 400 400 200 200 200 100 100 50 F 	CH NAME KHz KHz KHz KHz KHz KHz KHz	AN TYF RA RA RA RA RA RA	PE W W W W W W W	NUM 1 2 3 4 5 6 7	NUM 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF	L TYPE None None None None None	GRP 1 1 2 2 2 3 3 3 4 4	RULE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REF CHAN	~	
ENTRY 1 2 3 4 5 6 6 7 7 8	400 400 200 200 200 200 200 200 200 200	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz KHz	AN TYF RA RA RA RA RA RA	PE W W W W W W W W W	NUM 1 2 3 4 5 6 7 8	NUM 1 2 1 2 1 2 1 2 1 2 2 1 2	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS	L TYPE None None None None None None	GRP 11 22 22 33 33 4 4 4	RULE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REF CHAN		
ENTRY 11 22 33 44 55 66 77 88 99	 400 400 200 200 200 100 100 50 F 50 F 50 MIX 	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz KHz L	AN TYF RAI RAI RAI RAI RAI RAI MI	PE W W W W W W W W W W X	NUM 1 2 3 4 5 6 7 8 1	NUM 1 2 1 2 1 2 1 2 1 2 1 2 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS	L TYPE None None None None None None None	GRP 1 1 1 2 2 3 3 4 4 4 4 5	RULE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REF CHAN		
ENTRY 11 22 33 44 55 66 77 88 99 100	400 400 2400 200 200 100 50 F 350 F 350 F MIX MIX	CH NAME KHz KHz KHz KHz KHz KHz KHz KHz L 2	AN TYF RAI RAI RAI RAI RAI RAI MII	PE W W W W W W W W W X X X	NUM 1 2 3 4 5 6 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None None	GRP 1 1 1 2 2 3 3 4 3 4 4 4 5 6 6	RULE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REF CHAN		
ENTRY 1 2 3 4 4 5 6 6 7 8 9 10	 400 400 200 200 200 100 100 50 F 50 F MIX MIX 	CH NAME KHz KHz KHz KHz KHz KHz KHz CHz 1 2	AN TYF RAI RAI RAI RAI RAI MI: MI:	PE W W W W W W W W W W X X	NUM 1 2 3 4 5 6 7 7 8 1 2	NUM 1 2 1 2 1 2 1 2 1 2 1 1 2 1 1 1	COI MODE DIF ABS DIF ABS DIF ABS DIF ABS DIF DIF	L TYPE None None None None None None None	GRP 1 1 2 2 2 3 3 3 3 4 4 4 4 5 5 6 6	RULE 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	REF CHAN	Y	
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The **COIL TYPE** field has options **Bobbin** and **Array**. For example, to set the voltage scale on all raw array channels, but not alter the rotation, you could use:

ne №	lode	Defaults											
ist Nam	e TSP	E.					•						RU
	CHAN			COIL				GDD					
RULE PROP		TYPE	E NUM		NUM MOI		DE TYPE		VOLTS		PHASE	E	
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													Ĩ
ENTRY		CHAN				COII						REF	
	N	NAME	TYPE		NUM	NUM	MODE	TYP	E GR	P	RULE	CHAN	
1	600	KHz	RAW		1	1	DIF	Arra	y	1	1		-
2	600	KHz	RA	W	2	4	DIF	Arra	y	1	1		
3	600	KHz	RA	W	3	13	DIF	Arra	y	1	1		
4	600	KHz	RA	W	4	16	DIF	Arra	Y	1	1		
5	300	KHz	RA	W	5	1	DIF	Arra	y	2	1		
6	300	KHz	RA	W	6	4	DIF	Arra	y	2	1		
7	300	KHz	RA	W	7	13	DIF	Arra	y	2	1		
8	300	KHz	RA	W	8	16	DIF	Arra	y I	2	1		
9	150	KHz	RA	W	9	1	DIF	Arra	y	3	1		
10	150	KHz	RA	W	10	4	DIF	Arra	y	3	1		
	150	KHz	RA	W	11	13	DIF	Arra	y	3	1		
11	150	KHz	RA	W	12	16	DIF	Arra	y	3	1		•
11 12	130												



This will produce results identical to the **Set Volts...** option in the array window popup menu. We plan to remove the menu option in a future rev.