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MS10 Firmware Upgrade Notes v2.98

MAJOR NEW FEATURES IN THIS VERSION

Phase measurement is now available. Hold level and press key 1 to access manual measurement on the unit. The readout is displayed using the 'shadow bar'. -9dB represents -180° and +9dB +180°. 1dB steps are therefore equivilant to a positive or negative phase shift of 20°. A positive readout indicates that the right channel is leading the left. Lin4WinXP now displays decimal phase below the frequency measurement on the control panel when the 'Freq' button is selected. The unit must be in level mode before allowng frequency and phase measurements to be made. The phase measurements are accurate to ±2° below 20kHz with reduced accuracy up to 40kHz.

A plot of phase verses frequency above 1kHz can be generated using segment 'z'. This segment must be used with a sweep segment e.g. 'uz' or 'wz' because phase measurements are made at the same time as the frequency response measurements and segment z flags the showing of the results. Lin4WinXP versions v5.14 and above support phase plots, users can download the latest version from www.lindos.co.uk/lin4win.html.

SEGMENTS available (v2.98 firmware)

Name:	Description:	Details:
SEG n	Masterseg	Test level/Normalise/Noise (-80 to -40dB)
SEG m	Tape Masterseg	Test level/Normalise/Noise (-60 to -20dB)
SEG u	Sweep	20Hz , 20kHz @ 0dB 5 secs
SEG v	Tape Sweep	20Hz , 20kHz @ -10dB 5 secs
SEG w	Wide Sweep	40Hz , 40kHz @ 0dB 5 secs
SEG s	Slow Sweep	20Hz , 20kHz @ 0dB 20 secs
SEG r	Distortion Residue	Dist Res 1kHz @ -20, 0, +8dB
SEG q	Dist Res to +18	Dist Res 1kHz @ 0, +12, +18dB
SEG c	Crosstalk	Crosstalk at 100Hz, 3.15kHz, 10kHz @ 0dB 468-wtd
SEG h	Headroom Plot	1kHz 0dB to +18dB in 1dB steps 5 sec plot
SEG l	Long Noise Plot	Noise Wtd 468 (-72 to -40dB) L-chan 20 sec plot
SEG p	PPM Tone-burst test	'Inverse Tone Bursts' 1, 1.5, 5, 10, 100ms
SEG y	468 Tone-bursts	'Inverse Tone Bursts' 1, 1.5, 5, 10, 100ms
SEG b	Tonebursts	General Tone Bursts 100, 10, 5, 1, 0.5ms @ 0dB
SEG f	Flutter Cal Wobble	Flutter-meter cal wobble (should read 1% IEC Wtd)
SEG i	Channel Ident	1kHz 0dB 1 sec, 1kHz , 6dB 1 sec, repeating
SEG j	Lindos Lineup	1kHz 0dB L+R 2secs, +8 dB L 2s, +8 L+R 2s repeating
SEG g	GLITS test	1kHz 3dB 6s total 1 mute on L , 2 mutes R repeating
SEG z	Phase (fsk only)	Phase Plot (valid only above 1kHz) (Use with u,v,s, or w)

Any combination of segments (up to 6) can be sent as a sequence using the Lin4WinXP support software running on a PC, with the following provisos:

- Only one 'MasterSeg' can be sent (n or m)
- Only one sweep segment can be sent (u, s ,v ,w, h)
- Only one extra plot can be sent (l or z)
- Seg x only works with a sweep (it signals the showing of phase)

Segment letters can be entered in any order, either in the control panel or at the top of the main results window (press return or click run to send).

STANDARD SEQUENCES (v2.98 firmware chip)

No:	Description:	Segs:	Measures:
SEQ0	Line-Up	j	0dB/+8dB line-up/chan ident
SEQ1	'Sweep'	u	sweep 20Hz-20kHz 5 secs
SEQ2	'Broadcast Test'	n,u,r,z	sweep, noise and dist to +8dB
SEQ3	'Digital Test'	n,u,r,q,z	sweep, noise and dist to +18dB
SEQ4	'Sound-card Test'	n,u,r,q,l	digital test plus 20s noise plot
SEQ5	'Slow Sweep'	s	sweep 20Hz-20kHz 20 secs
SEQ6	'Tape/FM Test'	m,v,r,z	sweep @ -10dB, & high ranges
SEQ7	'GLITS test'	g	channel ident and line-up
SEQ8	Wideband Sweep'	w	sweep 40Hz-40kHz 5 secs
SEQ9	'Headroom plot'	h	level versus level 0dB to +18
SEQ10	'Long Noise plot'	l	noise peak and mean 20 secs
SEQ11	'Distortion segs'	r,q	distortion residue -20 to +18dB
SEQ12	'PPM tone bursts'	p	5 'inverse-level' tone-bursts
SEQ13	'Crosstalk'	c	crosstalk at 100Hz 3.15k 10kHz

Notes: SEQ0 only runs at initial switch-on

- To run SEQ5 hold the SEQ key down while pressing key 1
- To run SEQ6 hold the SEQ key down while pressing key 2 (etc to SEQ 8)
- To run SEQ9 hold the SEQ key down while pressing LEV
- To run SEQ10 hold the SEQ key down while pressing NOISE
- To run SEQ11 hold the SEQ key down while pressing DIST
- To run SEQ12 hold the SEQ key down while pressing PPM
- To run SEQ13 hold the SEQ key down while pressing dBu/REL

NB: Because sequence results are held until cleared by the running of a master-seg (n or m) or by resetting, extra Segments can be run to add in to results already displayed in Lin4Win. For example, it can be useful to run SEQ3 and then run SEQ5 (slow sweep) or SEQ8 (wideband sweep), replacing the original sweep. Or to run SEQ3 and then SEQ10 (noise plot), which will add to the results. Running SEQ13 will add crosstalk results.

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