

Optimising XMon performance

XMon cannot be considered as a standalone device but as part of a monitor system consisting of the XMon, Power amps and Speakers.

Overall Gain

The main gain section of XMon provides a gain range of +31dB to -95db in 1dB steps. As can be seen on the chart below, to optimize the signal-to-noise ratio, it is important that XMon is run at approximately 0dB gain at normal monitoring levels.

XMon Noise and Distortion at different gains						
Measured with +4dB gain and speaker trim set at -4dB (0dB overall)						
Gain	-30dB	-20dB	-10dB	0dB	+10dB	+20dB
Noise	-95dB	-94dB	-94dB	-93dB	-83dB	-73dB
Output Level, Signal to Noise and distortion						
measured with +4dBm @ 2KHz Input (-16dB on XMon Meters)						
	-26dBm	-16dBm	-6dBm	+4dBm	+14dBm	+24dBm
Signal to Noise	66dB	76dB	86dB	97db	97dB	97dB
THD+Noise	0.116%	0.040%	0.016%	0.011%	0.016%	0.061%

Speaker Trim

The Speaker trim section of the XMon provides a gain range of 0dB to -63.5dB in 0.5db steps. As can be seen in the chart below, the signal-to-noise remains the same for the first 4dB of attenuation but then the signal-to-noise degrades as attenuation is increased.

Speaker attenuation, Signal to Noise and distortion

Measured with +4dBm input @ 2KHz Input and +4dB gain

Speaker Trim	0dB	-2dB	-4dB	-6dB	-8db	-10dB	-12dB	-14dB	-16dB
Noise	-88.3	-90.2	-92.5	-93	-93.5	-93.8	-94.1	-94.2	-94.5
Output Level	+8dBm	+6dBm	+4dBm	+2dBm	0dBm	-2dBm	-4dBm	-6dBm	-8dBm
THD+Noise	0.009	0.009	0.009	0.009	0.009	0.010	0.012	0.014	0.016
Signal to Noise	96.3	96.2	96.5	95	93.5	91.8	90.1	88.2	86.5

Note. The increase in distortion at increased attenuation is largely due to the noise content

The factory default settings of the TMC-1 XMon controller are as follows:

Main Gain Section +4dB gain.

Speaker Trim -4dB

Overall gain 0dB

Speaker trim range is restricted to +/- 4dB

Input makeup gain +20dB to -10dB

XMon Metering:

The default setting provides 5dB of analogue headroom above the digital clip point when set in this mode (XMon clips at approximately +25dBm).

The X-Mon updates a channel every 2.5mSec, all channels are updated in 20mSec.

XMon Cue 3 & Stereo 4

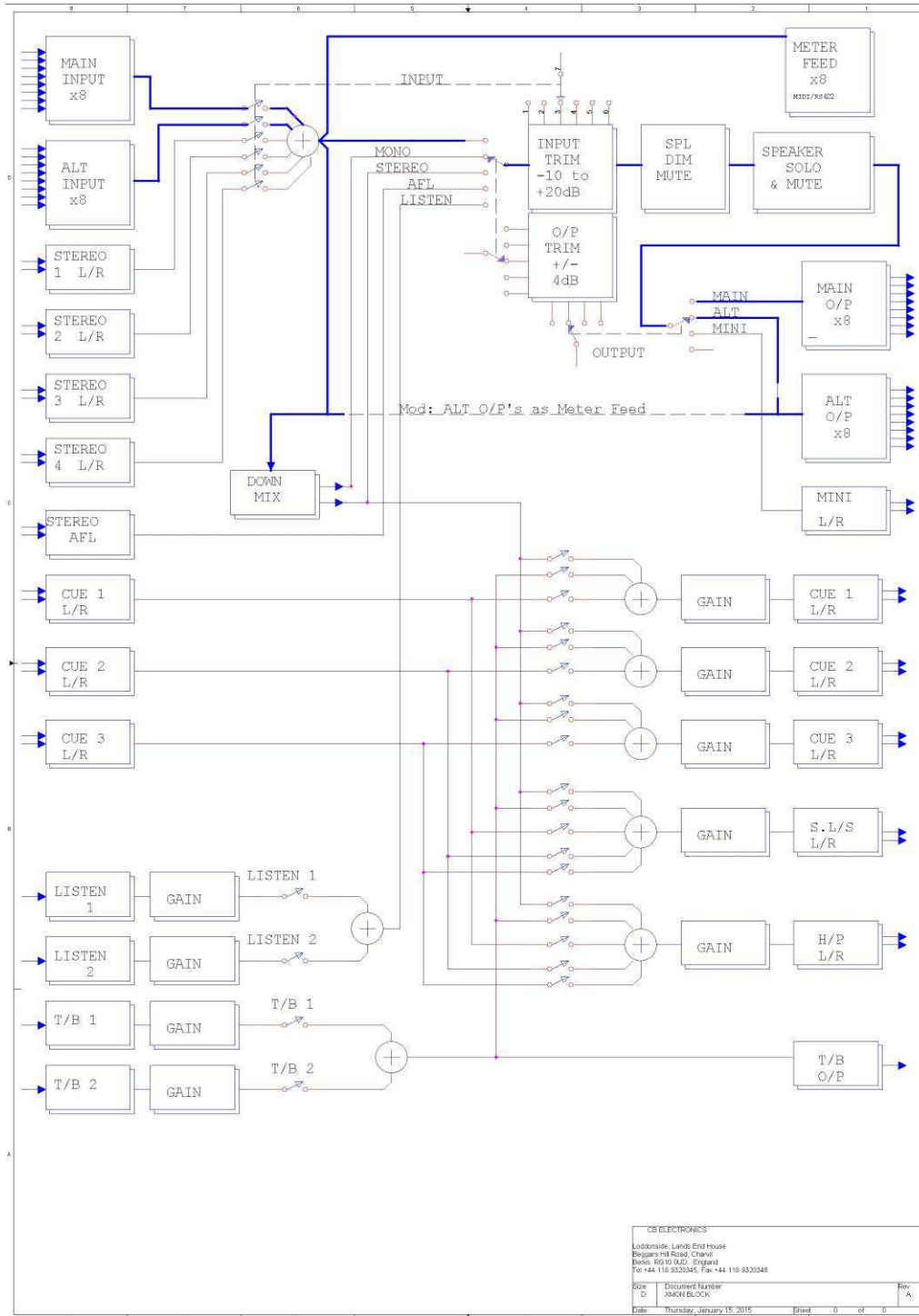
Although not always documented, the XMon that we tested has both a stereo Cue 3 input and a stereo Cue 3 output. The TMC-1 can access and control both the Cue 3 input and Cue 3 output. The table below shows the Cue input/output connections including Cue 3. Cue 3 behaves in the same way as Cue 1 & 2 in that it is not possible to select the other cue inputs as an input to cue 3.

Cue Inputs			
Signal Name	+	-	Ground
Cue 1 Left	24	12	25
Cue 1 Right	10	23	11
Cue 2 Left	21	9	22
Cue 2 Right	7	20	8
Cue 3 Left	18	6	19
Cue 3 Right	4	17	5
	15	3	16
	1	14	2
Ground			13

Cue Outputs			
Signal Name	+	-	Ground
Studio L/S Left	24	12	25
Studio L/S Right	10	23	11
Cue 1 Left	21	9	22
Cue 1 Right	7	20	8
Cue 2 Left	18	6	19
Cue 2 Right	4	17	5
Cue 3 Left	15	3	16
Cue 3 Right	1	14	2
Ground			13

Stereo Inputs			
Signal Name	+	-	Ground
Stereo Input 4 Left	15	3	16
Stereo Input 4 Right	1	14	2

XMon Block Diagram



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Size	Document Number	Rev
D	XMON BLOCK	A
Date	Thursday, January 15, 2015	Sheet 0 of 0