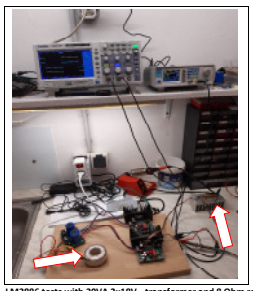
C-Amp v1.0 measurements

Transient | Clipping | THD+N | Transfer | Pictuers | Schematic



LM3886 tests with 30VA 2x18V$_{ac}$ transformer and 8 Ohm resistor

Rating degrees:
poor/average/good/**very good**/**excellent**

No. 1/1 — Reference - Toshiba SB-M2

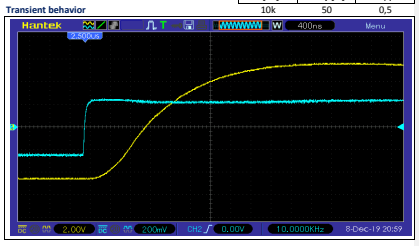
	Value	Type / Size	Manuf.
C in	4.7u/50V	elco tht	Marcon
C fb	100u	elco tht	Marcon
C xx	?	ceramic tht	?

Listening impressions

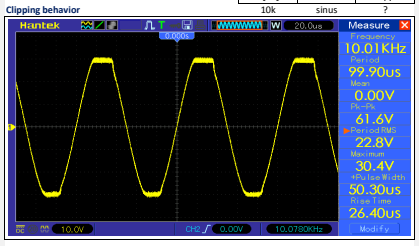
Noise/dist.:	poor
Macrodinamic:	average
Microdinamic, details:	**very good**
Spaceness:	**very good**
Mids, full-bodied:	good
Highs:	good
Chor, brass represent.:	**very good**
Easy to lisen:	**yes**

Conclusion:
"cheap" sounding, but relatively accurate, fine details, transparent, and little weak mid, some very little grain in the highs (elco?), good chor/brass representation

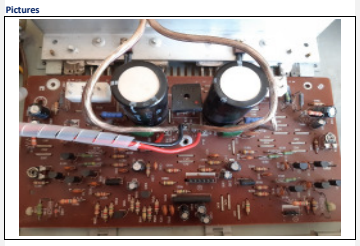
Transient behavior	f [Hz]	Duty [%]	V_{p-p}
	10k	50	0,5



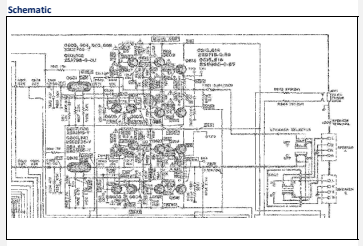
Clipping behavior	f [Hz]	Wave	V_{p-p}
	10k	sinus	?



Pictures



Schematic



No. 0/2 — Reference - LM3886 std.

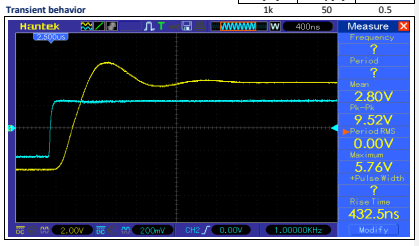
	Value	Type / Size	Manuf.
C (in)	1u	MKP	WIMA
Ci (fb)	10u	MKS	WIMA
Cc (C4)	100p	FKP	WIMA
Cf	-		
Rv	-		
L / R	-		

Listening impressions

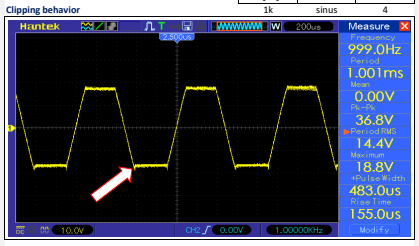
Noise/dist.:	good
Macrodinamic:	good
Microdinamic, details:	good
Spaceness:	good
Mids, full-bodied:	good
Highs:	good/average
Chor, brass represent.:	average
Easy to lisen:	yes but little boring

Conclusion:
typ. medicore amp, good all-round sound, but slightly rolled-off highs, and some lacks of microdetails, chor/brass sounds dull

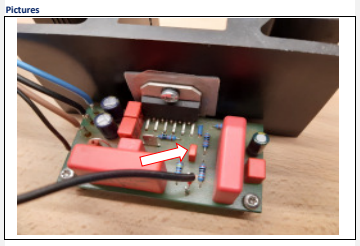
Transient behavior	f [Hz]	Duty [%]	V_{p-p}
	1k	50	0.5



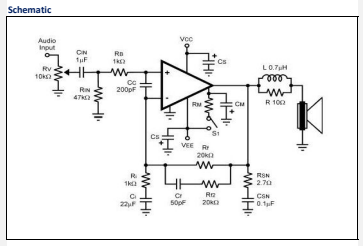
Clipping behavior	f [Hz]	Wave	V_{p-p}
	1k	sinus	4



Pictures



Schematic



Overshooting / ringing is caused by the **Cc** = 100pF cap bw. +/- inputs of the LM3886
It's a manufacturer recommendation but I'm sceptical: **avoid if not needed!**

Overshooting spikes can be seen by clipping too...

No. 1 — Composite LM3886 /v1

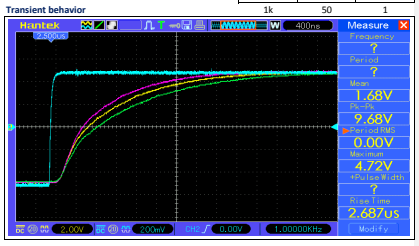
	Value	Type / Size	Manuf.
C in, C fb	-	(DC-servo!)	
C1	180p	C0G / tht	noname
C2	0	-	-
C3	100p	C0G / tht	noname
C4	0	-	-
R5	**1.3k**/1k/850R	thin / 1206	(+ axial)

Listening impressions

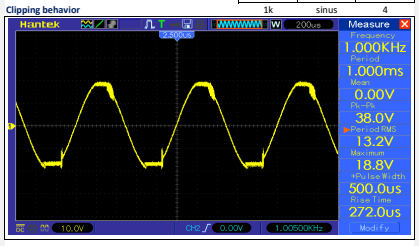
Noise/dist.:	**very good**
Macrodinamic:	**very good**
Microdinamic, details:	good
Spaceness:	good
Mids, full-bodied:	good
Highs:	good/average
Chor, brass represent.:	good/average
Easy to lisen:	no

Conclusion:
very good performance on paper, but very fustrating highs makes the listening not pleasant, microdinamic and space could be better, chor/brass sounds average

Transient behavior	f [Hz]	Duty [%]	V_{p-p}
	1k	50	1

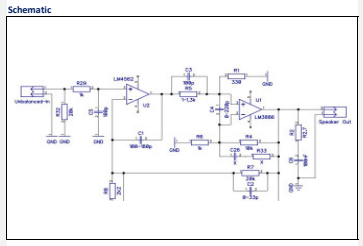


Clipping behavior	f [Hz]	Wave	V_{p-p}
	1k	sinus	4



Pictures

Schematic



R1 = 1.3k - green; 1.0k - yellow; 850R - purple
Listening test with 1.3k!

Clipping shape doesn't change with R5 value bw. 850R-1.3k (R1=330R)!

No. 2 — Composite LM3886 /v2

	Value	Type / Size	Manuf.
C in, C fb			
C1			
C2			
C3			
C4			
R5			

Listening impressions

Noise/dist.:	
Macrodinamic:	
Microdinamic, details:	
Spaceness:	
Mids, full-bodied:	
Highs:	
Chor, brass represent.:	
Easy to lisen:	

Conclusion:

Transient behavior	f [Hz]	Duty [%]	V_{p-p}
	1k	50	1

Clipping behavior	f [Hz]	Wave	V_{p-p}
	1k	sinus	4

Pictures

Schematic

Main quality factors for "easy to lisen" (in order):

1 Microdetails, spaceness (transparency, airiness), quality of highs (upper mid, lower high)
2 Macrodinamic, quality of mids (full-bodiness)
3 Noise / distortion (of course a minimum level must be achieved)

Considerations, TO-DO:

1 Excellent transient response is not a must for good mid/high quality and good microdetails
2 Electolytics in the signal path causes maybe some grain in the highs, but not necessarily degrades the sound quality mainly
3 Most important components to check for quality: C1 (opa feedback cap), opamp (LM4562, LME49720, ect.)
4 C1...: Cheap ceramic caps could be sound too harsh, foil caps maybe dull (check!?)