

Service *Manual*

MODEL: AMX-220(FX)



www.proaudio.com

Version 1.0

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1. Introduction

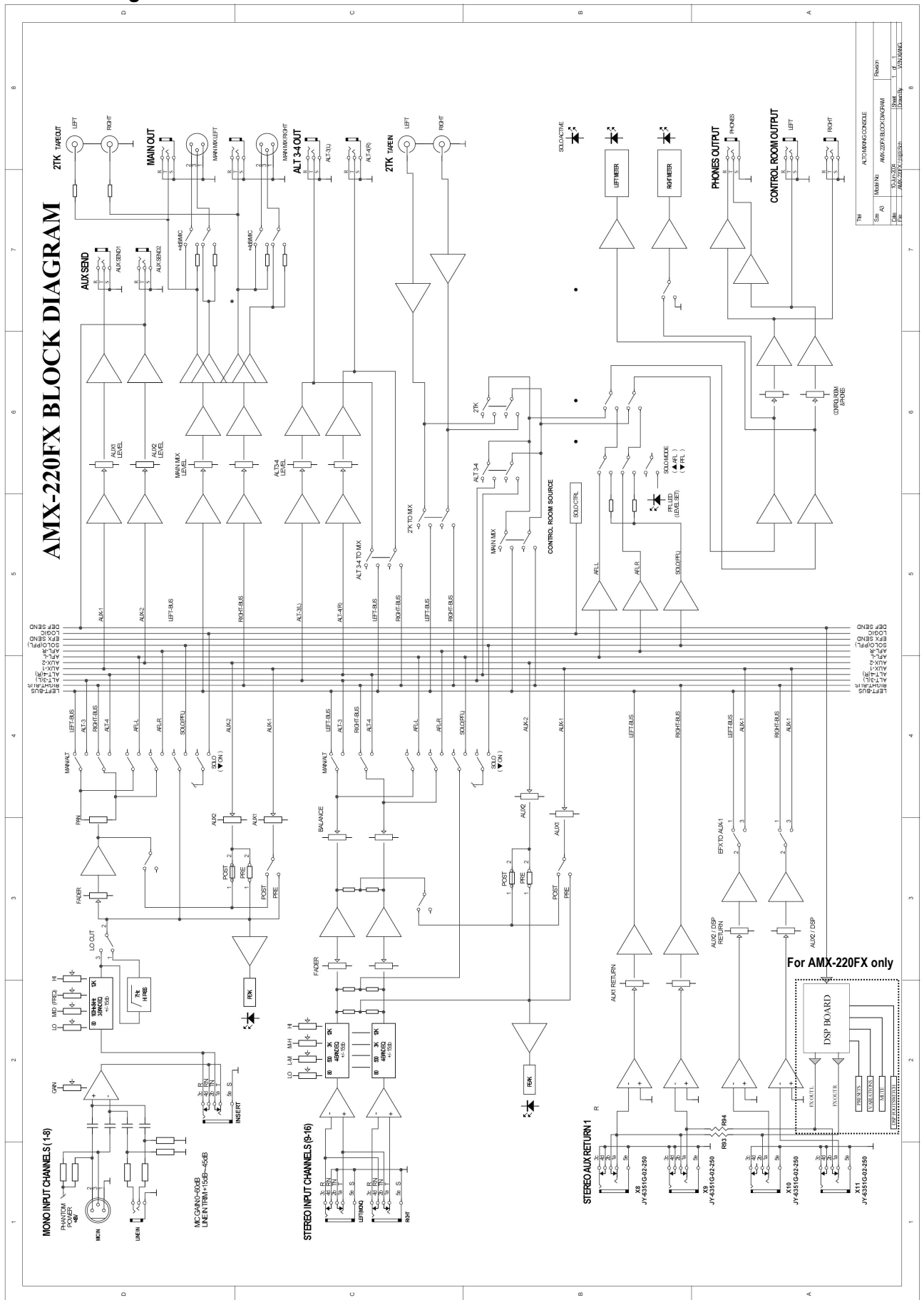
The AMX-220(FX) is 8 mono MIC/LINE channels with MIC PREAMPS plus 4 stereo channels perfect for keyboards, MIDI equipment or other stereo sound sources and a 2-track input/output for recording and playback in a mixer small enough to carry in your board luggage. In spite of its size, you can find great 3-band mid-sweep equalizers in the mono channels and 4-band fixed frequency equalizers in the stereo channels plus switch able low-cut filters in the mono channels. As well as 2 AUX sends, 2 stereo returns, phantom power and accurate peak LED a plus of course our ultra low noise circuitry and exceptional build quality.

- 8 MIC Input channels with gold plated XLR and balanced Line inputs.
- 4 Stereo input channels with balanced TRS Jacks.
- Ultra-low noise discrete MIC Preamps with +48 V Phantom power.
- 2 additional multi-functional Stereo AUX Returns.
- Extremely high headroom – offering more dynamic range.
- Balanced inputs for highest signal integrity.
- Warm 4-band EQ on stereo line channels.
- 3-band EQ with swept mid (100Hz to 8kHz) on each mono Channels.
- Peak LEDs and switch able low-cut filter on each mono channels.
- Adjusts the input sensitivity on each stereo channel
- 2 AUX Sends per channel for external effects and monitoring.
- Mute / Alt3-4, Solo and Per-Fader-Listen function on each channel.
- Balanced TRS and XLR outputs, Control Room and Headphone Outputs.
- 2-Track inputs assignable to Main Mix, Control Room / Headphone outputs.
- Highly accurate 12 segment bar graph meters.
- Inserts on MIC channels.
- Performance and excellent noise figures
- Rugged construction ensures long life even under the most demanding conditions
- 24-bit DSP effect built in (for AMX-220FX only)

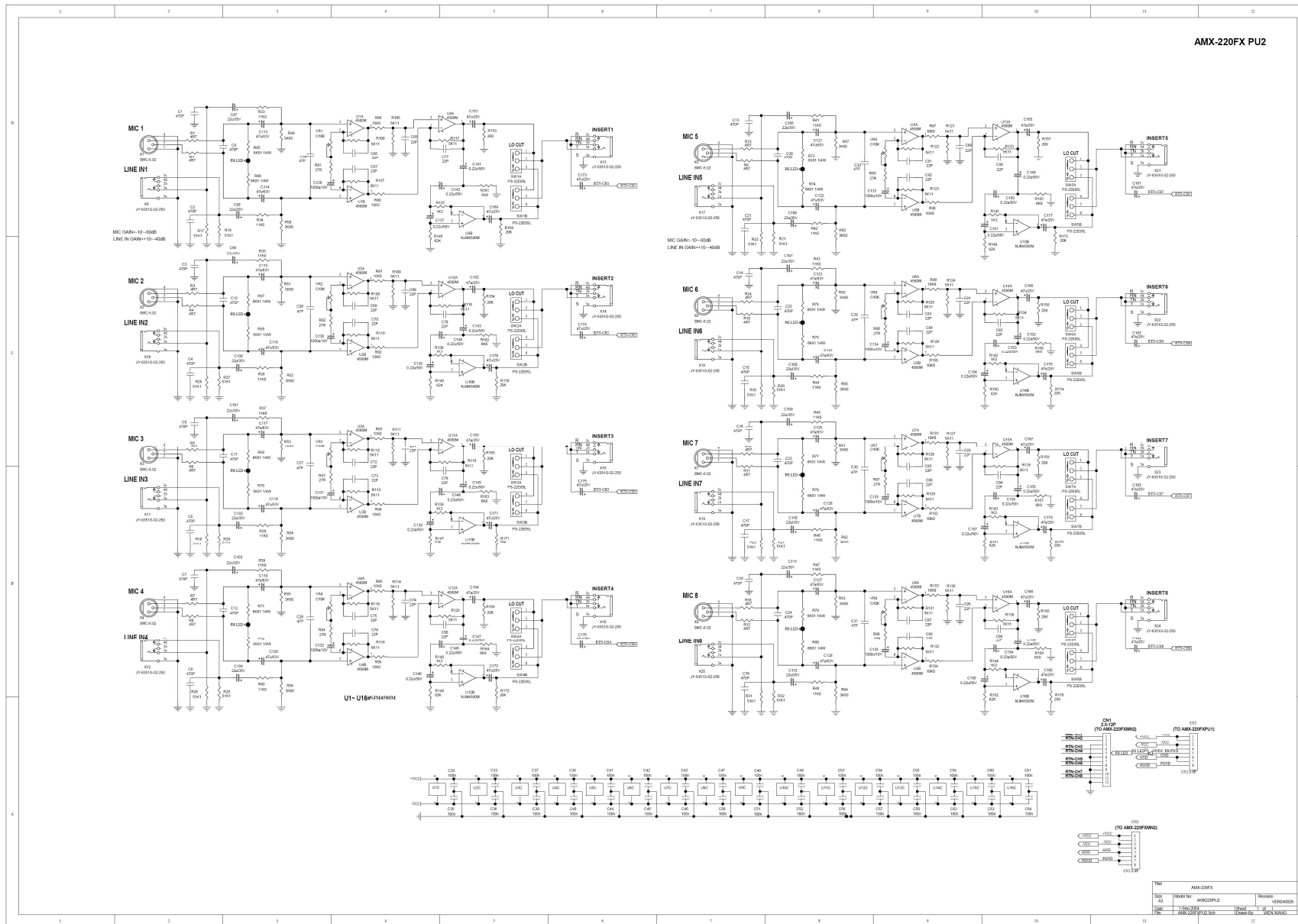
2. Specification

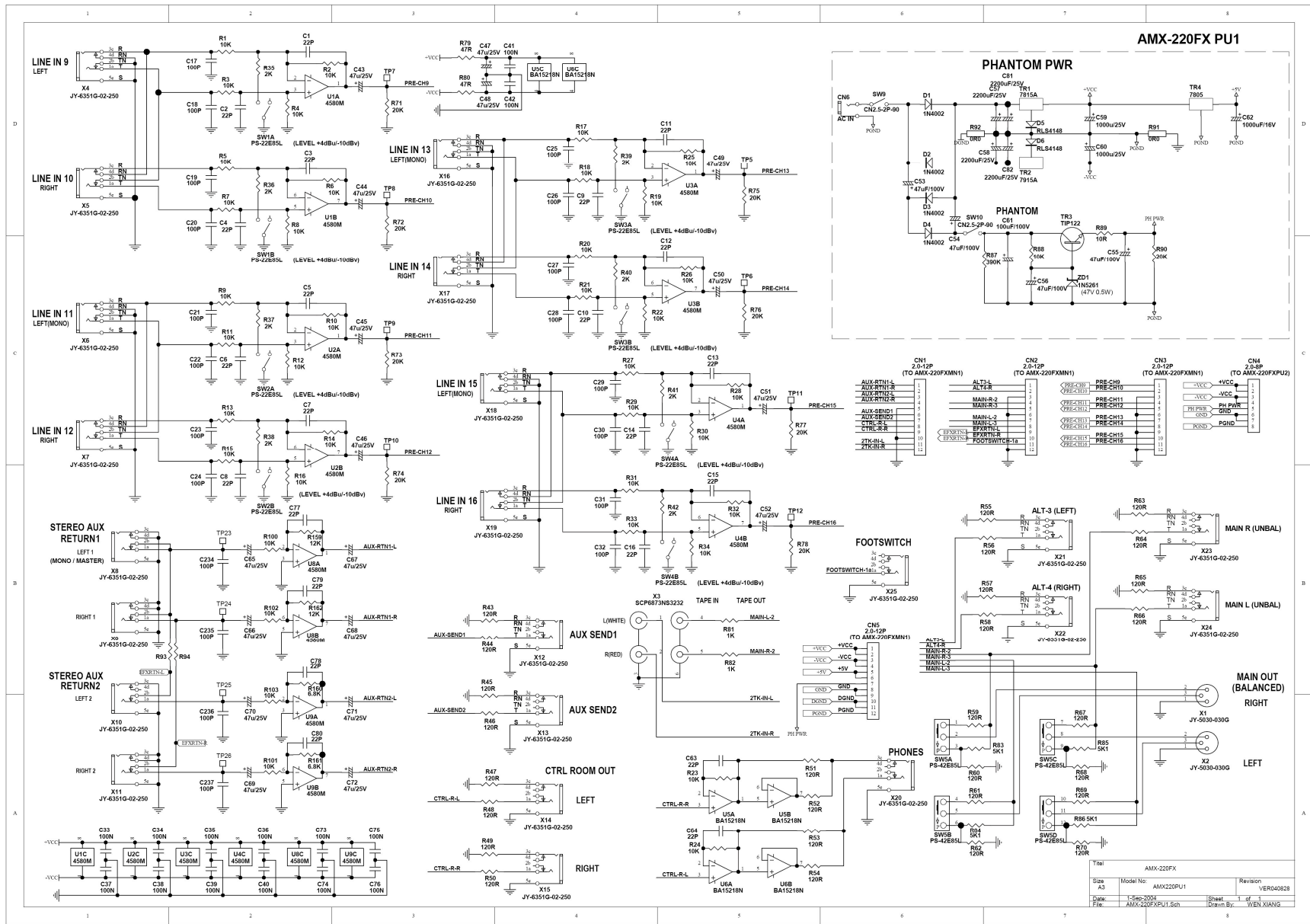
Mono input channels	Microphone input	Electronically balanced discrete input configuration	
	Frequency response	10Hz to 55KHz \pm 3dB	
	Distortion (THD&N)	0.005% at +4dBu 1KHz	
	Gain range	0dB to 60dB(MIC)	
	SNR(Signal Noise Rated)	115dB	
Stereo input channels	Line input	Electronically balanced	
	Frequency response	10Hz to 55KHz, \pm 3dB	
	Distortion (THD&N)	0.005% at +4dBu, 1KHz	
	Sensitivity range	+15dBu to -45dBu	
Impedance	Line input	unbalanced	
	Frequency response	10Hz to 55KHz \pm 3dB	
	Distortion (THD&N)	0.005% at +4dBu 1KHz	
	Microphone input	1.4K ohm	
	Channel insert return	2.5K ohm	
All other inputs	All other inputs	10Kohm or greater	
	Tape out	1K ohm	
	All other output	120 ohm	
Equalization	Hi shelving	\pm 15dB @ 12KHz	
	Mid sweep	\pm 15dB @ 100Hz ~3KHz	
	Hi-Mid	\pm 15dB @3KHz	
	Mid-Low	\pm 15dB @500Hz	
	Low shelving	\pm 15dB @80Hz	
DSP SECTION (For AMX-100FX only)	A/D and D/A converters	24 bit	
	DSP resolution	24 bit	
	Type of effects	Hall , Room , Vocal & Plate REVERBS	
		Mono & Stereo DELAY (max DELAY TIME 500ms)	
		Chorus , Flanger & Vibrato MODULATIONS	
		REV+DELAY,REV+CHORUS,REV+FLANGER,REV+VIBRATO combination	
	Presets	256	
	Controls		16-position PRESET BANK Selector
			16-position VARIATION selector
			CLIP LED
		MUTE SWITCH with LED indicator	
Power supply (AC/AC Adapter)	Main voltage	USA/ Canada 100-120V~,60Hz	
		Europe 210-230V~,50Hz	
		U.K/Australia 240V~,50Hz	
	Power Consumption	22W	
Physical	Dimension (W*D*H)	427mm X 412mm X43mm	
	Net weight	5.90kg/5.98kg (Without Adapter)	

3. Block Diagram

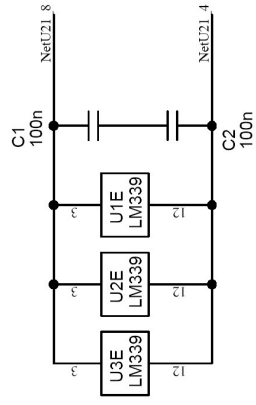
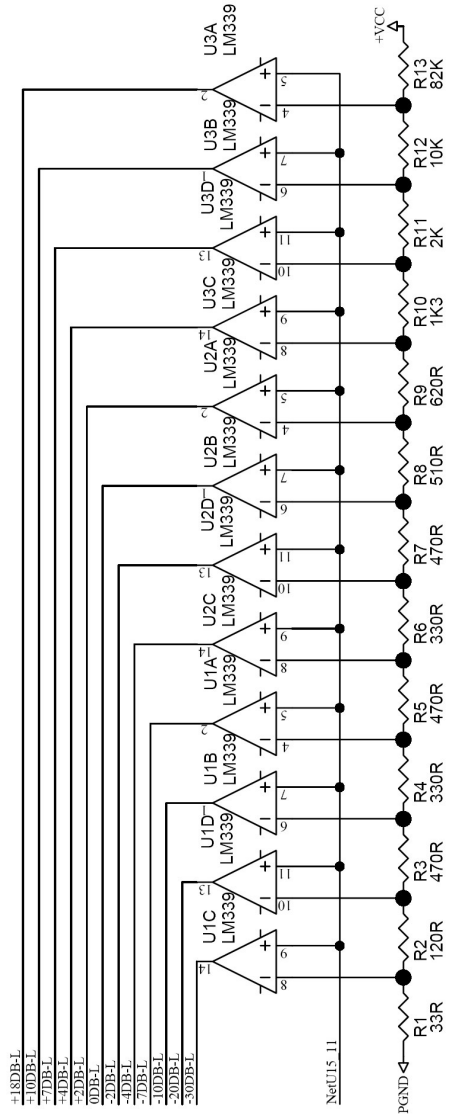


4. Schematic Diagram





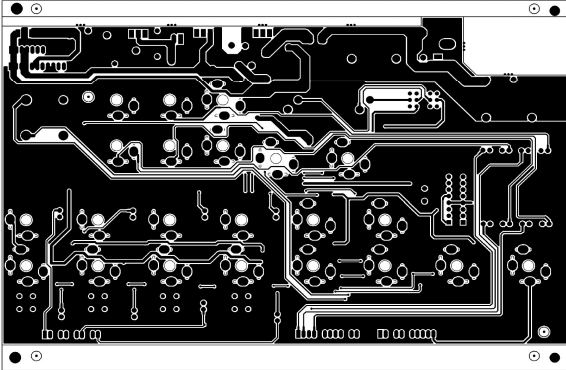
12VMETER



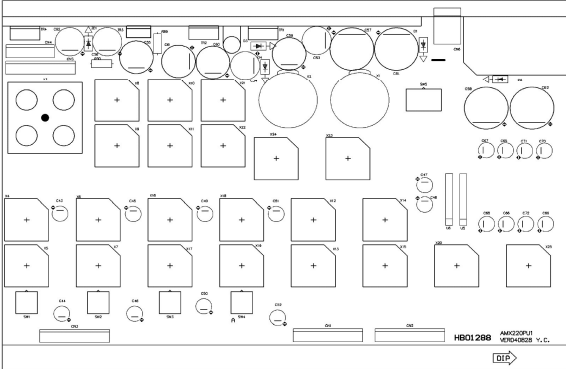
1	+VCC
2	NetU21_8
3	NetU21_4
4	+18DB-L
5	+10DB-L
6	+7DB-L
7	+4DB-L
8	+2DB-L
9	0DB-L
10	-2DB-L
11	-4DB-L
12	-7DB-L
13	-10DB-L
14	-20DB-L
15	-30DB-L
16	NetU15_11
17	PGND

Title		12VMETER	
Size	A4	Model No:	12VMETER
		Revision	VER040611
Date:	1-Sep-2004	Sheet:	1 of 1
File:	12VMETER.Sch	Drawn By:	

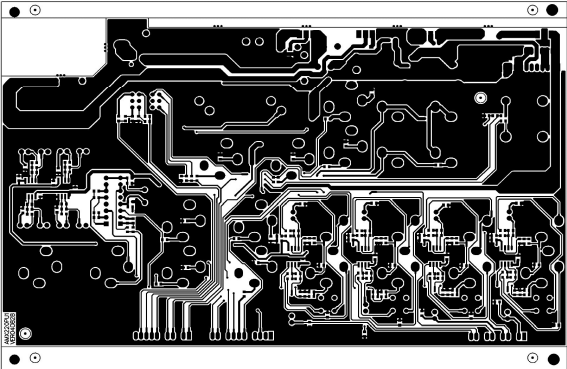
6. PCB Layout



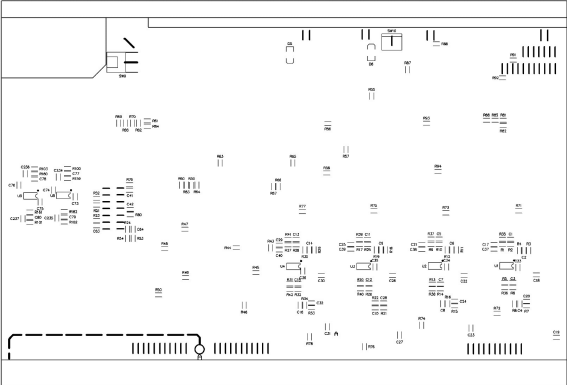
PCB: AMX220PU1 Top Layer



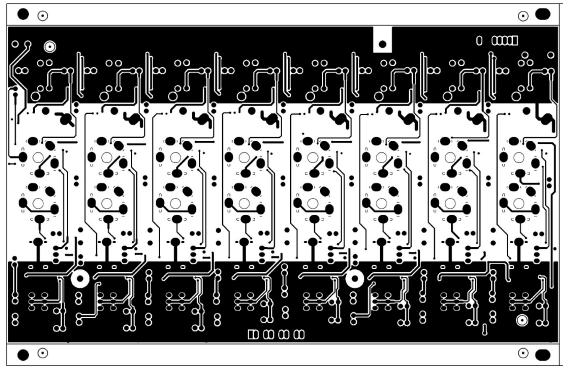
PCB: AMX220PU1 Top Overlay



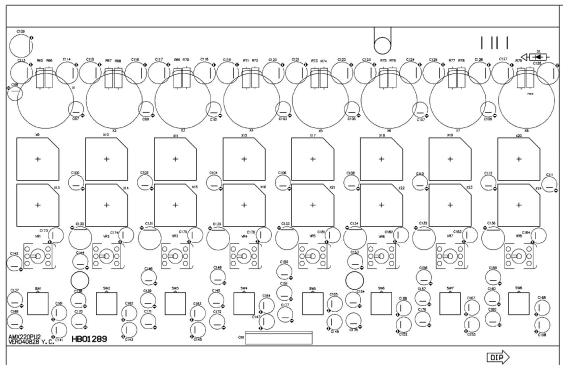
PCB: AMX220 PU1 Bottom Layer



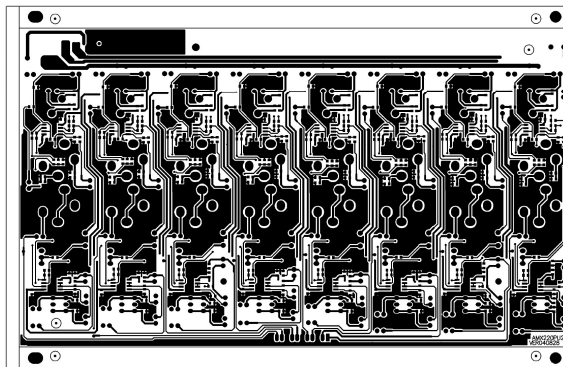
PCB: AMX220 PU1 Bottom Overlay



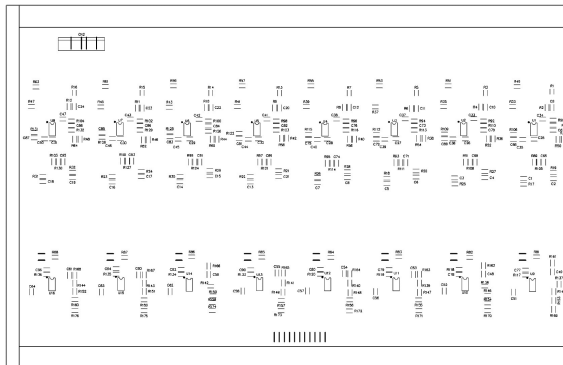
PCB: AMX220PU2 TOP Layer



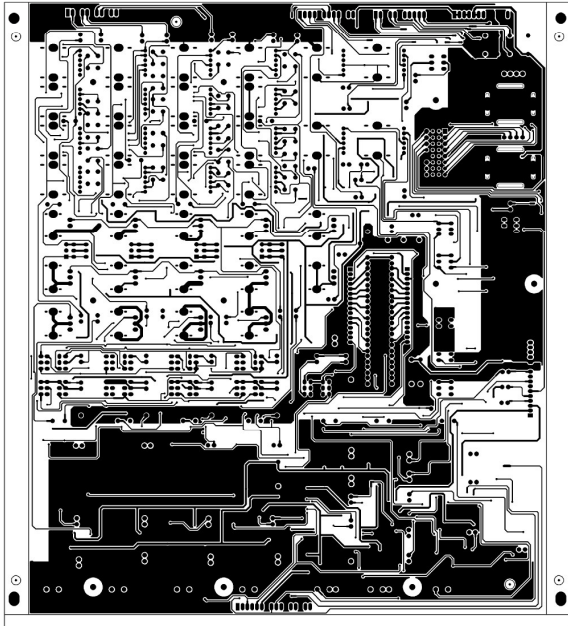
PCB: AMX220PU2 TOP Overlay



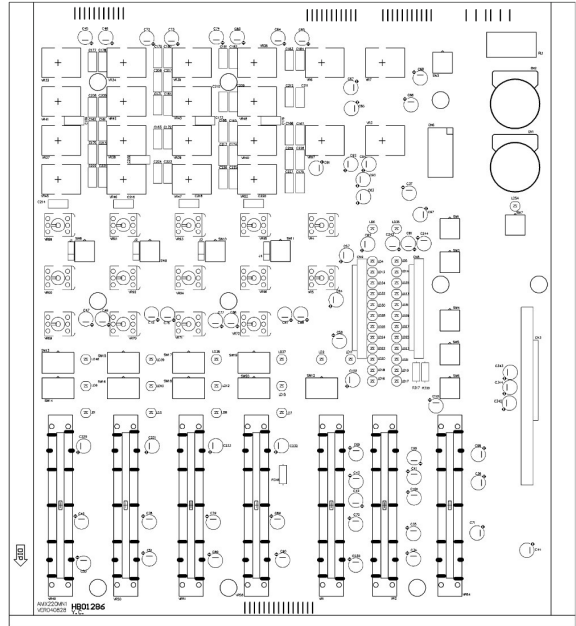
PCB: AMX220PU2 Bottom Layer



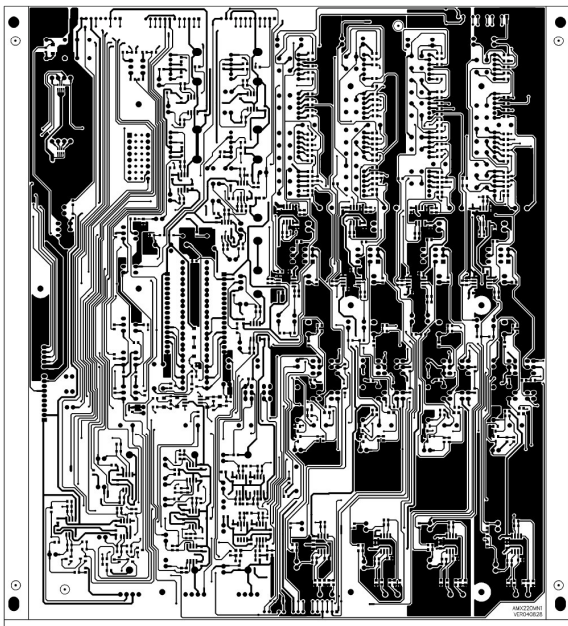
PCB: AMX220PU2 Bottom Overlay



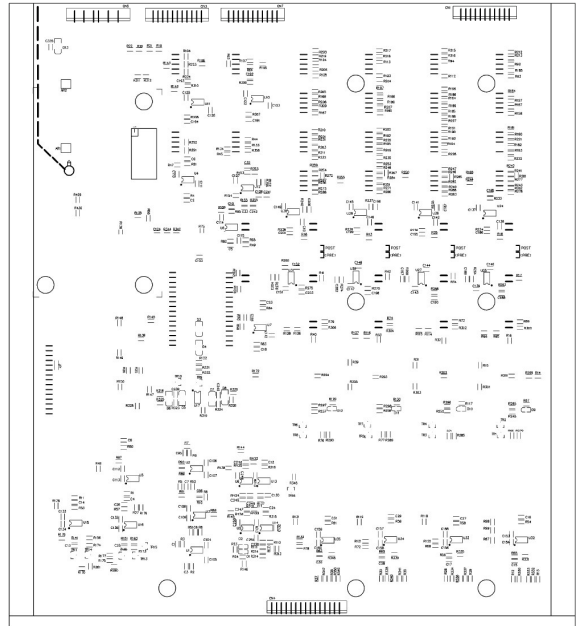
PCB : AMX220MN1 TOP Layer



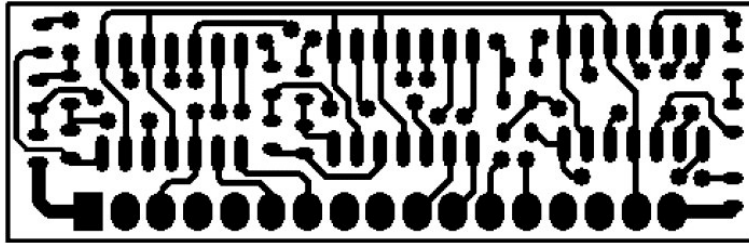
PCB : AMX220MN1 TOP Overlay



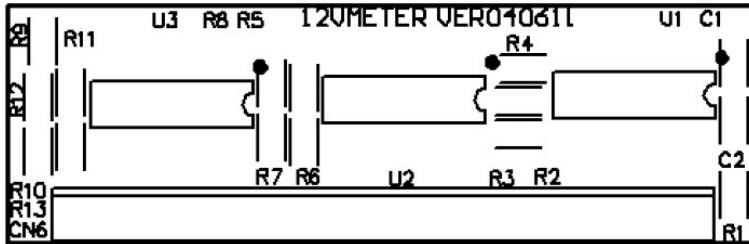
PCB : AMX220MN1 Bottom Layer



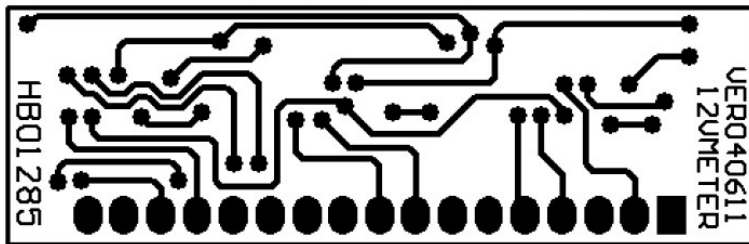
PCB : AMX220MN1 Bottom Overlay



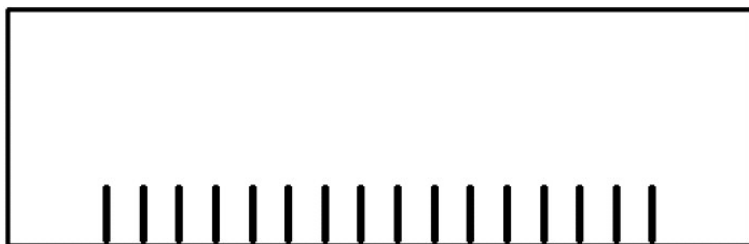
PCB :12VMETER Top Layer



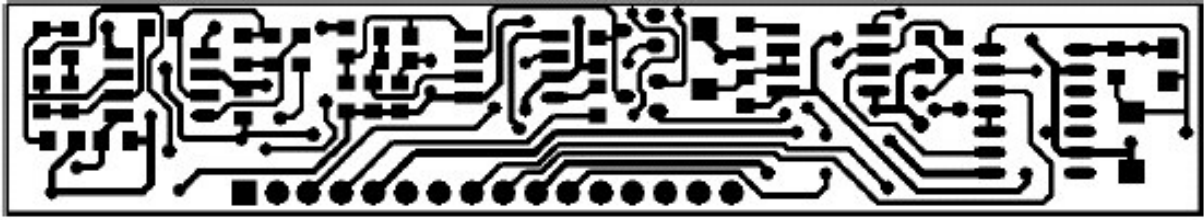
PCB :12VMETER Top Overlay



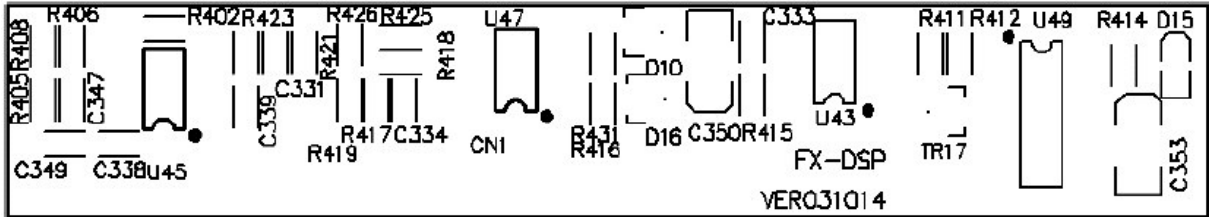
PCB :12VMETER Bottom Layer



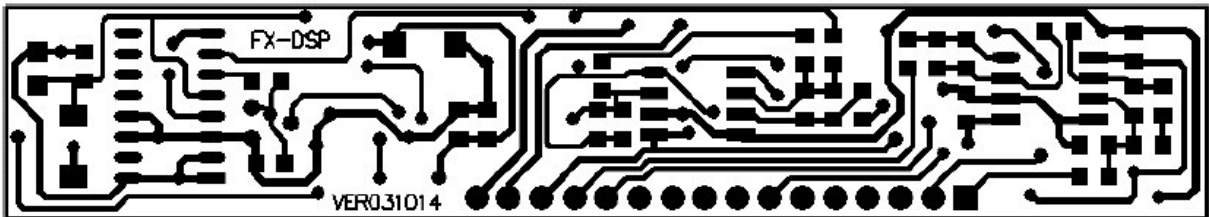
PCB :12VMETER Bottom Overlay



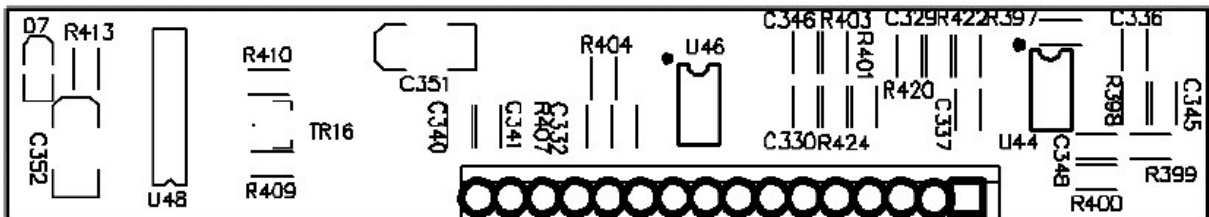
PCB : FX-DSP Top Layer



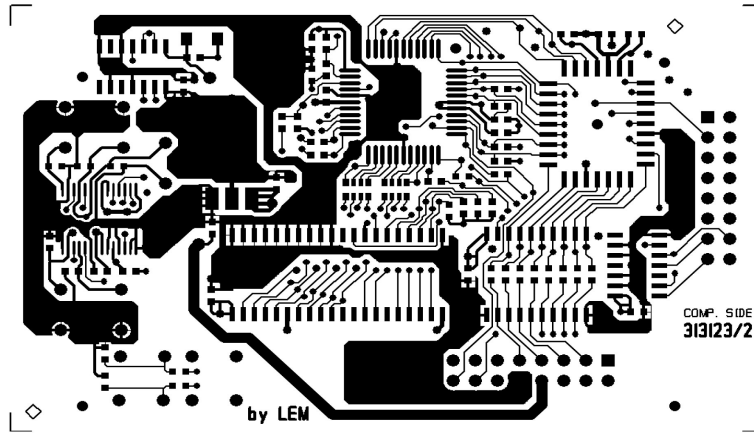
PCB : FX-DSP Top Overlay



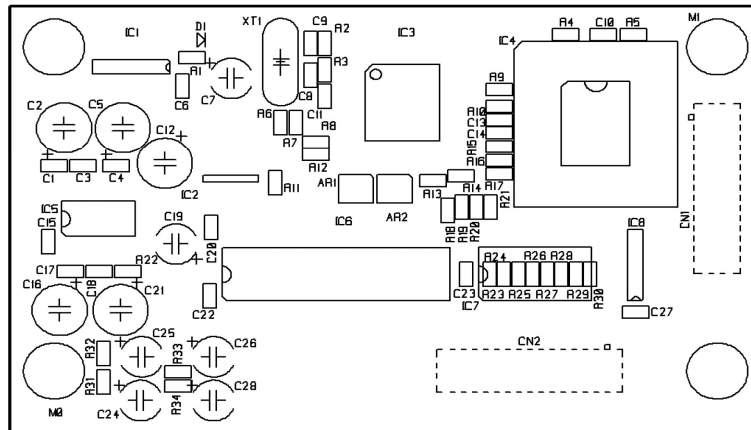
PCB : FX-DSP Bottom Layer



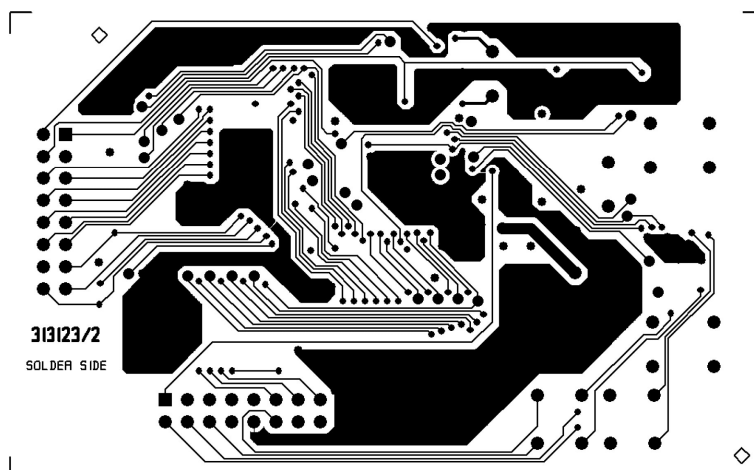
PCB : FX-DSP Bottom Overlay



PCB : 313123/2 Top Layer



PCB : 313123/2 Top Overlay



PCB : 313123/2 Bottom Layer

7. Test Procedure

MAIN MIX OUTPUT AND PAN TEST ON LINE 1~8

Keys Setting: all buttons are OFF, DSP mute ON.

Knobs setting: the slide LEVEL of input channel at "0", all EQ controls set in center.

MAIN MAX LEVEL set in "0"

All other slide LEVEL set in minimum

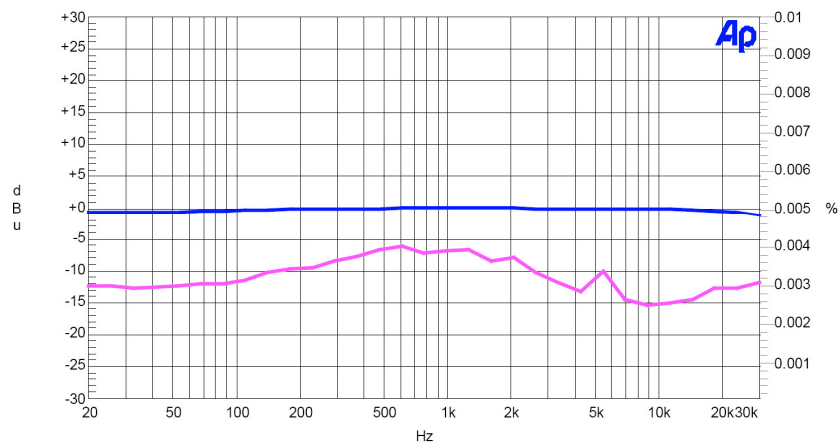
Output signal to MAIN MIX OUTPUT, and test PAN function (left and right channel).

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):

The image shows three screenshots of audio software interfaces:

- Analog Generator:** Shows a sine wave generator with a frequency of 1.00000 kHz. The amplitude is set to +20.000 dBu. The output is configured for UnBal BNC/XLR with a Z-Out of 20 Ohms.
- Analog Input:** Shows two channels, Channel A and Channel B. Channel A is set to BNC-Unbal with a level of +0.012 dBu. Channel B is set to GenMon with a level of +19.985 dBu. The converter and sample rate are HRes@65536.
- Analyzer:** Shows the measurement function set to THD+N Ratio. The input is Analog. The level is +0.002 dBu and the frequency is 1.00000 kHz. The measurement function is 0.00385%. The measurement function is THD+N Ratio. The detector is Auto, RMS, and the filter is "A" Weighting. The references are dBm A: 387.3 mV, dBm B: 387.3 mV, Freq: 1.00000 kHz, V/Fs: 1.000 V, Watts: 8.000 Ohms, dBm: 600.0 Ohms.

Audio Precision
07/01/04 10:44:21



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

111.at52

AUX SENDS OUTPUT TEST ON LINE 1~8

Keys Setting: all buttons are OFF, DSP mute ON.

Knobs setting: the slide LEVEL of input channel at “0”, all EQ controls set in center.

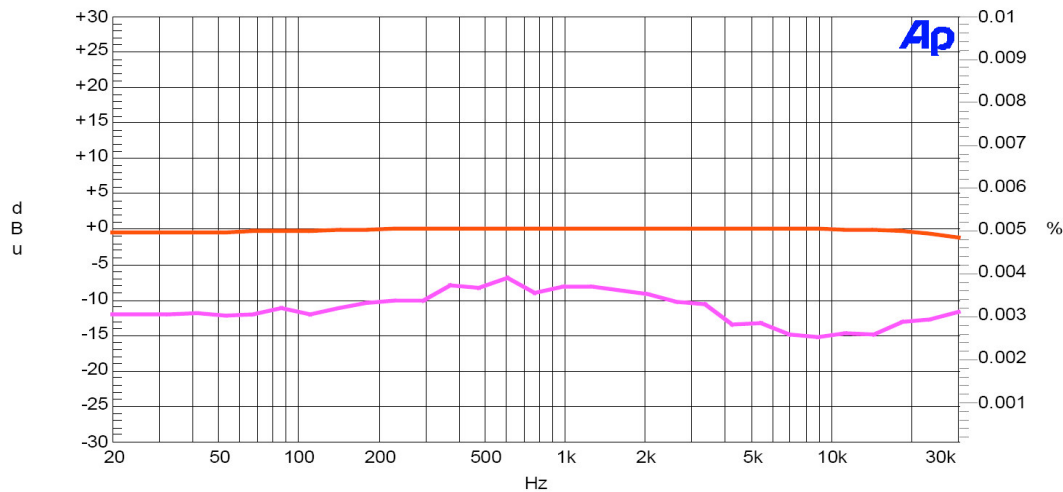
AUX SEND set in center (0), MAIN MAX LEVEL set in “0”.

All other slide LEVEL set in minimum

Output signal to AUX SENDS 1 and 2.

Equipment setting same as that in previous page (the measurement of output is 0dBu).

The frequency response as following(Tolerance:±2dBu, distortion: less than 0.005%):



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.THID+N Ratio A	Right	

111.ats2

AUX SENDS LEVEL TEST ON LINE 1~8

Knobs setting: the slide LEVEL of input channel at “0”, all EQ controls set in center.

AUX SEND set in center (0), MAIN MAX LEVEL set in “0”.

All other slide LEVEL set in minimum.

Equipment setting same as that in previous page (the measurement of output is 0dBu).

Adjust AUX knob to verify that there is +15dBu gain.

AUX1 SENDS POST AND PRE FUNCTION TEST

Keys Setting: all buttons are OFF, DSP mute ON.

POST PRE button set at ON

Knob setting: all EQ controls set in center (0), AUX SEND set in center (0) · MAIN MAX LEVEL set in “0”.

All other slide LEVEL set in minimum.

Output signal to AUX SENDS 1.

Adjust the LEVEL of input channel and it will not influence the AUX SEND 1 output signal.

ALT 3-4 OUTPUT TEST ON LINE 1~8

Keys setting: *MUTE ALT3-4 ON, others all OFF, DSP MUTE ON.*

Knobs setting: set the slide LEVEL of input channel in “0”, all EQ controls set in center (0).

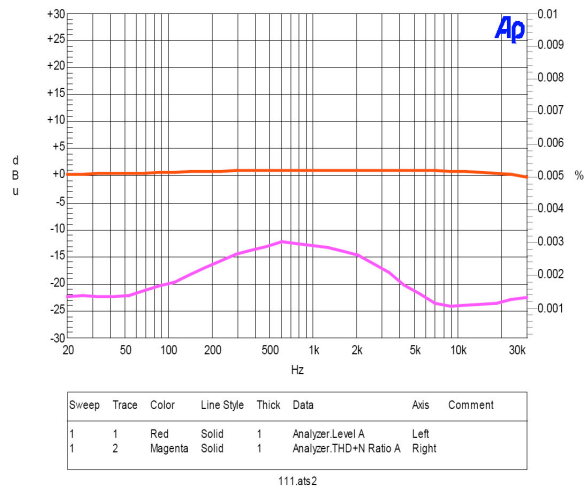
MAIN MAX LEVEL set in “0”.

All other slide LEVEL set in minimum (∞)

Output signal to ALT3-4.

Equipment setting same as that in previous page (the measurement of output is 0dBu).

Adjust ALT 3-4 knob to verify that there is +15dBu gain.



ALT 3-4 TO MAIN MIX OUTPUT TEST ON LINE 1~8

Keys setting: *MUTE ALT3-4 ON of input channel, ALT 3-4 TO MAIN MIX ON*

Other keys set at OFF, DSP MUTE ON

Knobs setting: the slide LEVEL of input channel set in “0”, all EQ controls set in center (0).

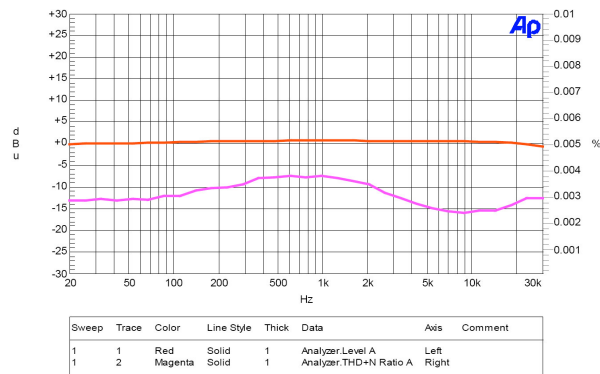
MAIN MAX LEVEL set in “0”.

All other slide LEVEL in minimum (∞).

Connect output signal to MAIN MIX OUTPUT.

Equipment setting same as that in previous page (the measurement of output is 0dBu).

The frequency response as following (Tolerance: ± 2 dBu, distortion: less than 0.005%):



CTRL ROOM OUTPUT TEST ON LINE 1~8

Keys setting: set “*MAIN MIX*” of TO CTRL ROOM ON, others OFF , DSP MUTE ON

Keys setting on input channel: MUTE ALT 3-4 OFF, SOLO OFF.

Knobs setting: set LEVEL of input channel in “0”, all EQ controls set in center (0).

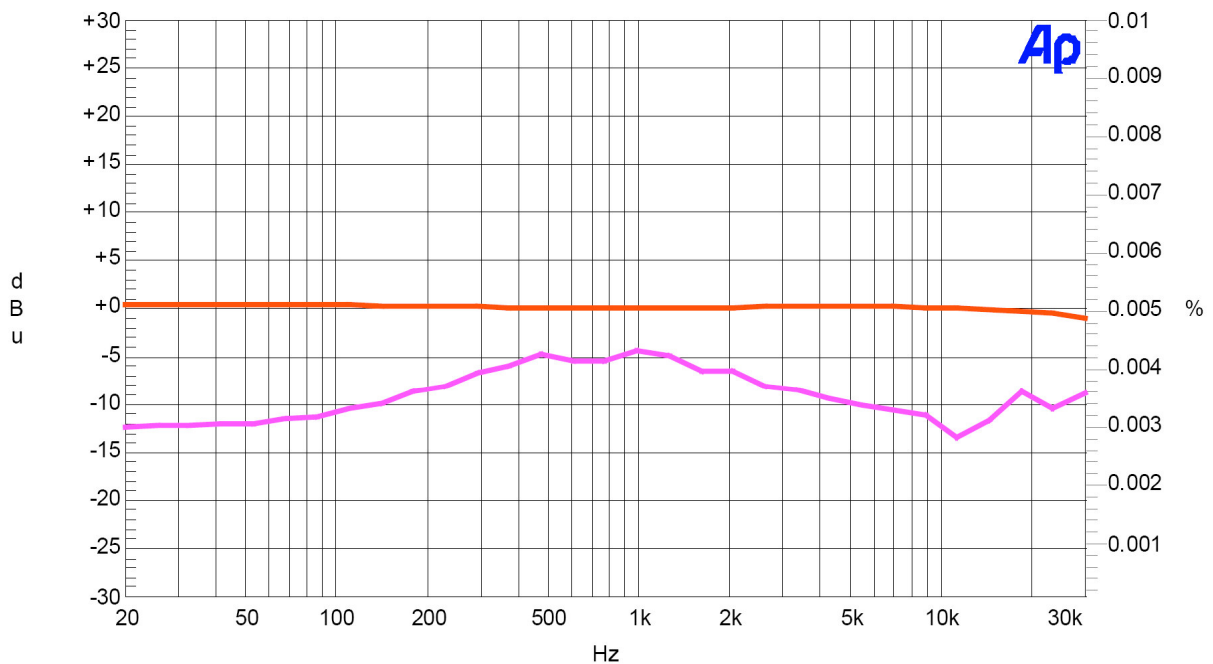
MAIN MAX LEVEL set in “0”, CONTRLO ROOM LEVEL in “0”.

All other LEVEL set in minimum(∞).

Connect output to CTRL ROOM OUTPUT.

Equipment setting same as that in previous page (the measurement of output is 0dBu).

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

111.ats2

CTRL ROOM ALT 3-4 OUT TEST ON LINE 1~8

Keys setting: set "MUTE ALT 3-4" of TO CTRL ROOM ON, others OFF.

Set ATL3-4 on input channel ON, SOLO OFF.

Knobs setting: set LEVEL of input channel in "0", all EQ controls set in center.

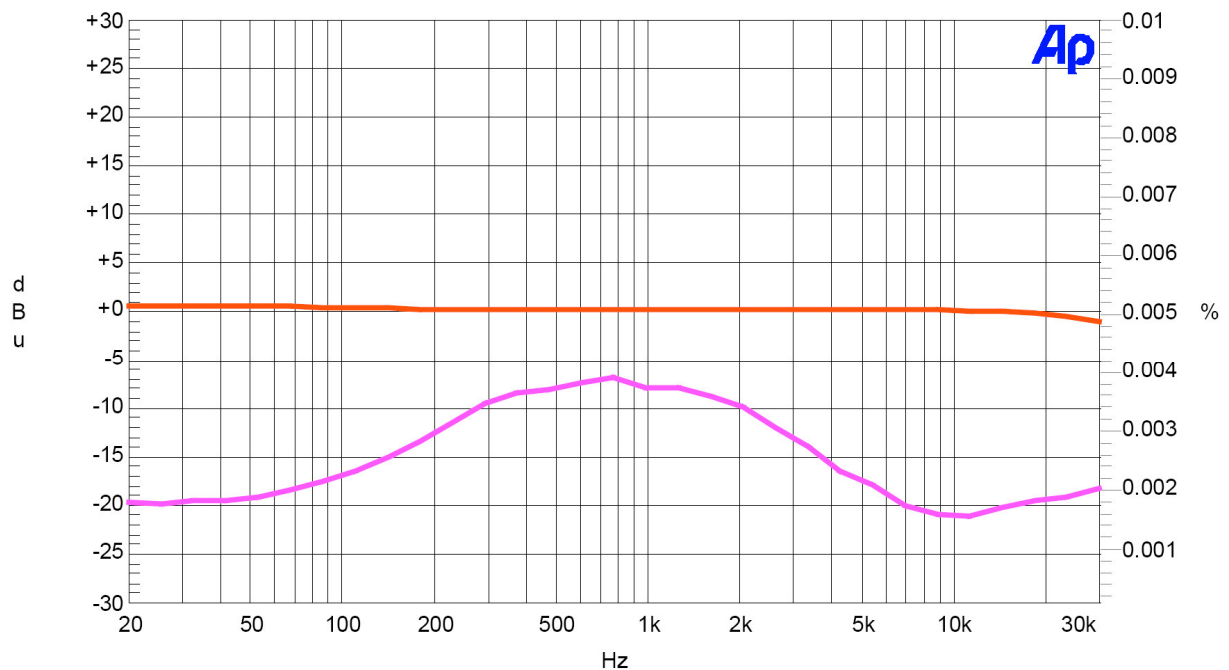
MAIN MAX LEVEL set in "0", CONTRLO ROOM LEVEL set in "0".

All other LEVEL set in minimum(∞)

Connect output to CTRL ROOM OUTPUT.

Equipment setting same as that in previous page (the measurement of output is 0dBu).

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

111.ats2

PHONES OUT TEST ON LINE 1~8

Keys setting: set "MAIN MIX" of TO CTRL ROOM ON, others OFF.

Set ATL3-4 of input channel OFF, SOLO OFF

Knobs setting: set the LEVEL of input channel in "0", all EQ controls in center (0).

MAIN MIX LEVEL set in "0", CONTROL ROOM LEVEL set in "0".

All other LEVEL set in minimum(∞).

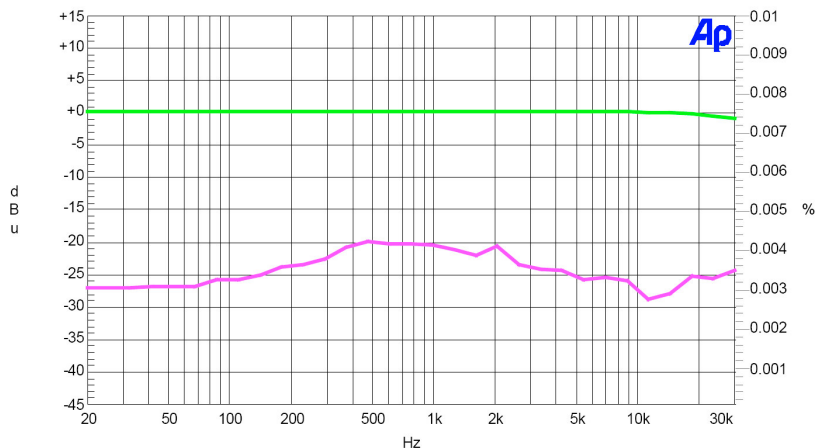
Output signal to PNONES OUTPUT.

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):

The screenshot displays the Audio Precision software interface with four main windows:

- Analog Generator:** Shows a sine wave at 1.00000 kHz with an amplitude of +20.000 dBu. Configuration is set to UnBal BNC/XLR with a 20 Ohm Z-Out.
- Analog Input:** Shows Channel A (BNC-Unbal) at +0.227 dBu and Channel B (GenMon) at +19.985 dBu. The converter and sample rate are HiRes@65536.
- Analyzer:** Shows Level A at +0.195 dBu and THD+N Ratio A at 1.00406%. The measurement function is THD+N Ratio.
- Sweep:** Shows two data points: Analyzer.Level A (Level) and Analyzer.TH+N Ratio A (THD+N Ratio). The sweep range is from 20.0000 Hz to 30.0000 kHz with 30 steps.

Audio Precision 07/01/04 17:07:32



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

CTRL ROOM OUT TEST ON TAPE IN

Keys setting: set **“2TK IN” of TO CTRL ROOM ON, others OFF.**

Knobs setting: set **CONTRLO ROOM LEVEL** in “0”, turn **2TK IN LEVEL** to maximum.

All other **LEVEL** set in minimum (∞)

Input signal from **TAPE IN** socket

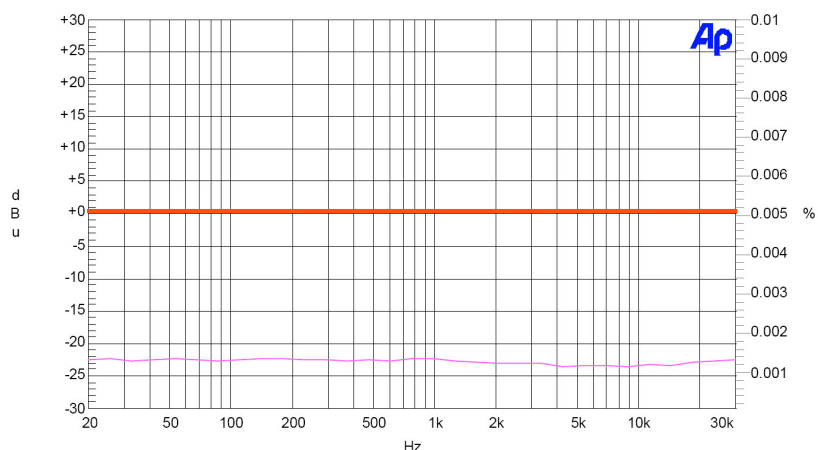
Output signal to **CTRL ROOM OUTPUT** ◦

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):

The screenshot displays four windows from an audio software interface:

- Analog Generator:** Shows a sine wave source at 1.00000 kHz. Amplitude is set to +0.000 dBu. Configuration includes UnBal BNC/XLR and Z-Out (Ohms) set to 20.
- Analog Input:** Shows Channel A (BNC-Unbal) at +0.506 dBu and Channel B (GenMon) at -0.032 dBu. DC is checked for both channels.
- Sweep:** Data 1 is Analyzer.Level A (range: -30.000 dBu to +30.000 dBu). Data 2 is Analyzer.THd+N Ratio A (range: 0.00010 % to 0.01000 %). Source 1 is Analog Generator.Frequency (range: 20.0000 Hz to 30.0000 kHz, 30 steps).
- Analyzer:** Shows Level A at +0.476 dBu and Level B at -0.032 dBu. Frequency is 1.00000 kHz. THD+N Ratio is 0.00130 %.

Audio Precision 07/01/04 13:23:22



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Red	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.THd+N Ratio A	Right	

MAIN MIX OUTPUT TEST ON TAPE IN

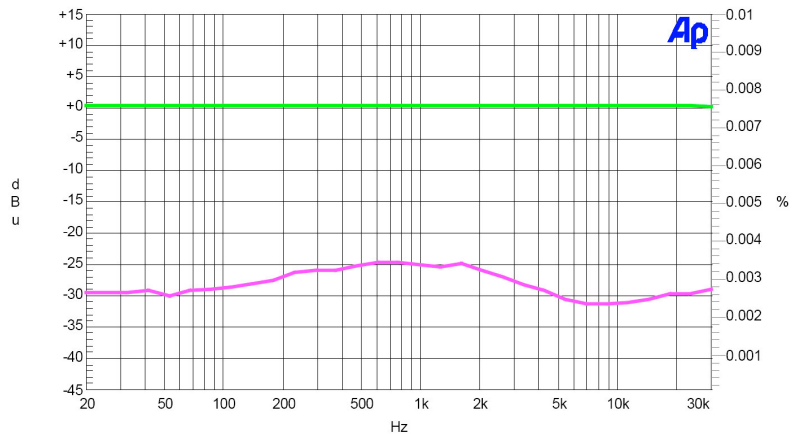
Keys setting: set "2TK TO MAIN MIX" ON, others OFF , DSP MUTE ON.

Knobs setting: turn 2TK IN LEVEL to maximum, and MAIN MAX LEVEL in "0".

Input signal from TAPE IN socket, output signal to MAIN MIX OUTPUT.

The frequency response as following(Tolerance:±2dBu, distortion: less than 0.005%):

Audio Precision 07/01/04 16:58:28



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

111.ats2

MAIN MIX OUTPUT LOW CUT TEST ON LINE 1~8

Keys setting: *LOW CUT ON*, MUTE ALT3-4 OFF, SOLO OFF, others OFF
 DSP MUTE ON.

Knobs setting: set the LEVEL of input channel in "0", all EQ controls set in center.
 MAIN MAX LEVEL set in "0".

All other LEVEL set in minimum (∞).

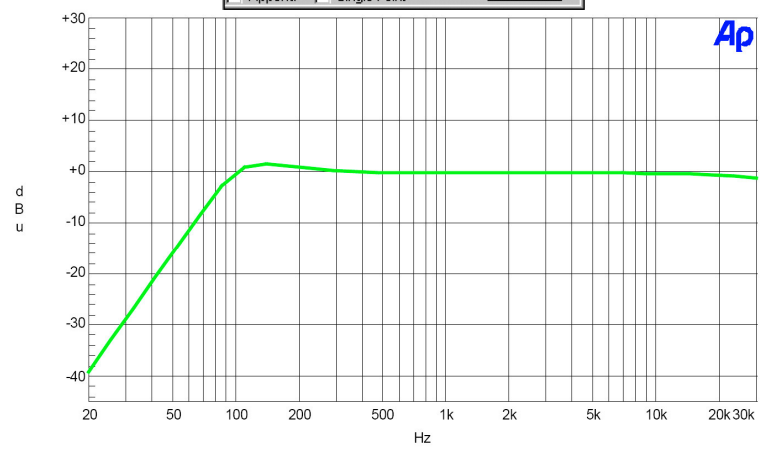
Output signal to MAX MIX OUTPUT

The frequency response as following(Tolerance: ± 2 dBu):

The image shows three software control panels. The 'Analog Generator' panel is set to a sine wave at 1.00000 kHz with an amplitude of +20.000 dBu. The 'Analog Input' panel shows Channel A at +0.012 dBu and Channel B at +19.985 dBu. The 'Analyzer' panel is configured for THD+N Ratio measurement at 1.00000 kHz with a level of +19.983 dBu. The 'Sweep' panel shows a frequency range from 20.0000 Hz to 30.0000 kHz with 30 steps.

Audio Precision

07/01/04 17:19:43



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	

MAIN MIX OUTPUT TEST ON TAPE IN

Keys setting: "2TK TO MAIN MIX" ON, others OFF, DSP MUTE ON.

Knobs setting: turn 2TK IN LEVEL to maximum, and MAIN MAX LEVEL in "0".

All other LEVEL set in minimum (∞)

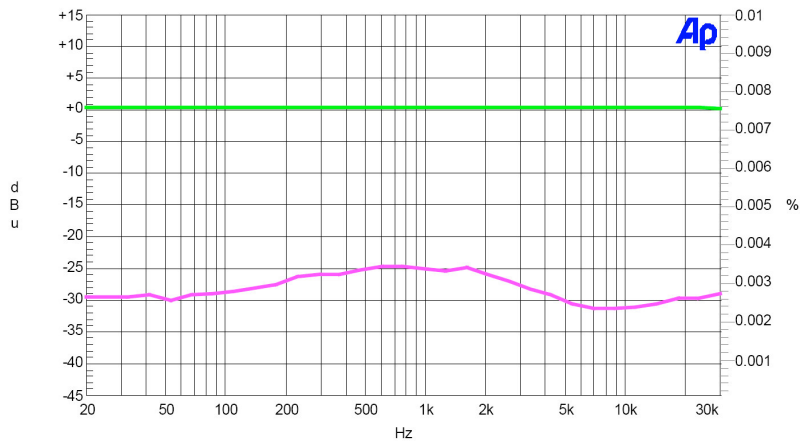
Input signal from TAPE IN, output signal to MAIN MIX OUTPUT.

The frequency response as following (Tolerance: ± 2 dBu, distortion: less than 0.005%):

The screenshot displays four windows from an audio software interface:

- Analog Generator:** Shows a sine wave source at 1.00000 kHz with an amplitude of +4.998 dBu. The configuration is set to UnBal BNC/XLR with a Z-Out of 20 Ohms.
- Analog Input:** Shows Channel A (BNC-Unbal) at 48.312 dBu and Channel B (GenMon) at -0.029 dBu. The converter and sample rate are HiRes@65536.
- Sweep:** Configured for a frequency sweep from 20.0000 Hz to 30.0000 kHz in 30 steps. It includes two data series: Analyzer.Level A (left axis) and Analyzer.TH+N Ratio A (right axis).
- Analyzer:** Shows the THD+N Ratio measurement function. The left channel (Ch A) is at +0.369 dBu and the right channel (Ch B) is at +4.964 dBu. The THD+N ratio is 0.00343%.

Audio Precision 07/01/04 16:58:28



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

111.ats2

MAIN MIX OUTPUT AND BAL TEST ON LINE 9~16

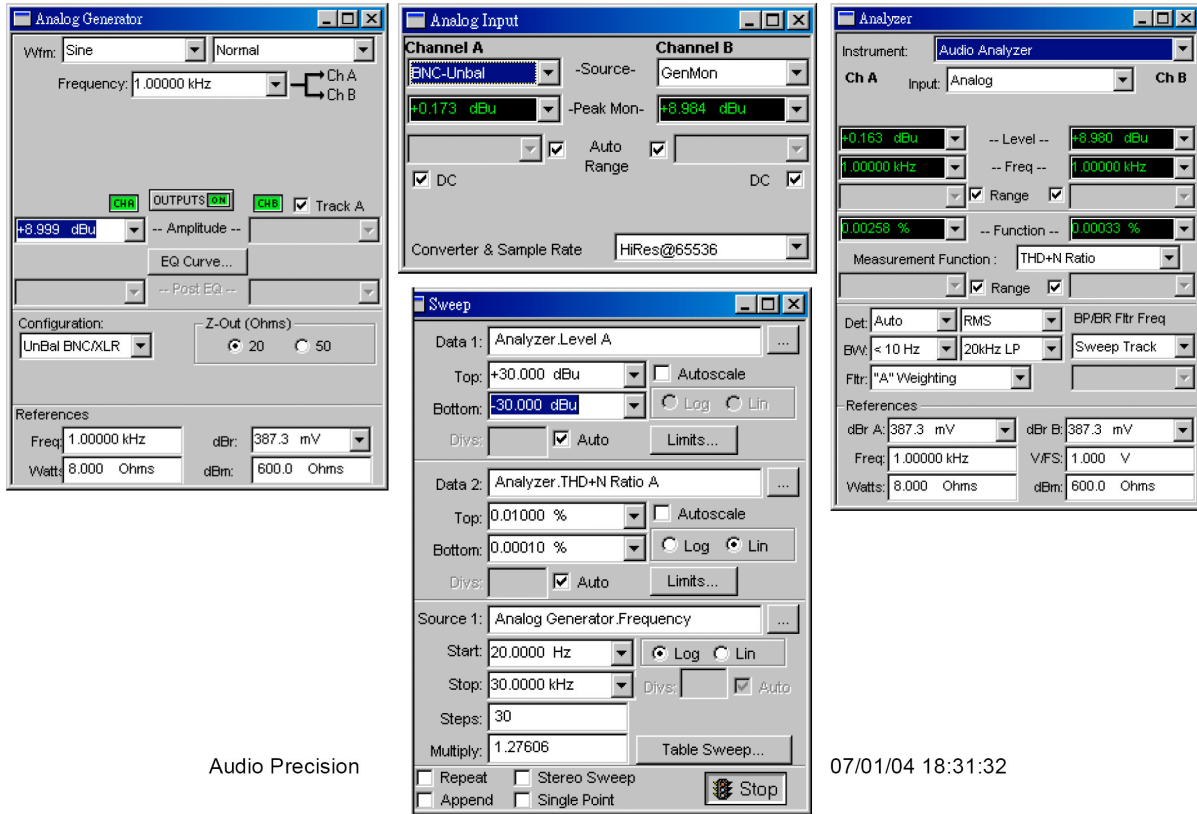
Keys setting: all keys OFF, DSP MUTE ON.

Knobs setting: set the LEVEL of input channel in "0", all EQ controls in center (0).

Set MAIN MAX LEVEL in "0", others LEVEL set in minimum (∞).

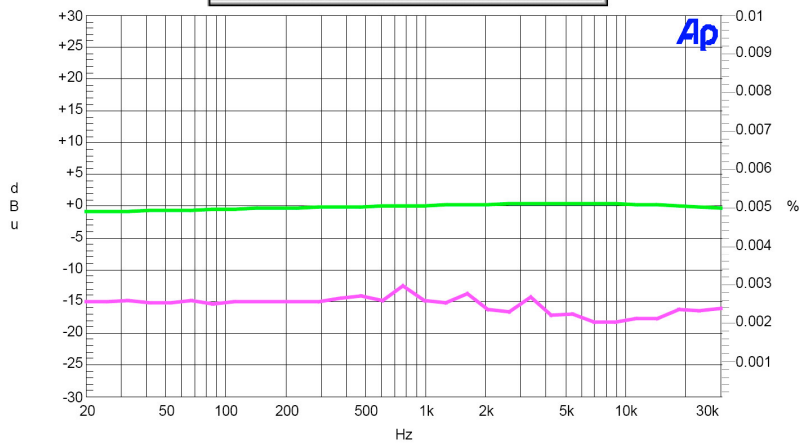
Output signal to MAX MIX OUTPUT, and test BAL function (left and right channel).

The frequency response as following (Tolerance: ± 2 dBu, distortion: less than 0.005%):



Audio Precision

07/01/04 18:31:32



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

111.ats2

ALT 3-4 OUTPUT TEST ON LINE 9~16

Keys setting: **MUTE ALT3-4 ON**, others OFF, DSP MUTE ON.

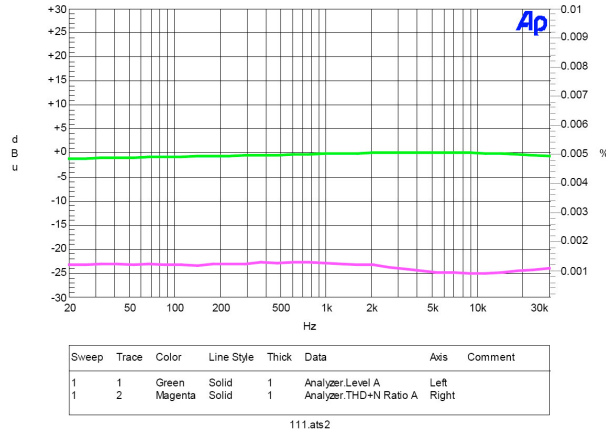
Knobs setting: set the LEVEL of input channel in “0”, all EQ controls in center (0).

Set MAIN MAX LEVEL in “0”, others LEVEL set in minimum (∞).

Output signal to ALT3-4.

Equipment setting same as that in previous page (the measurement of output is 0dBu).

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):



ALT 3-4 TO MAIN MIX OUTPUT TEST ON LINE 9~16

Keys setting: **MUTE ALT3-4 ON**, SOLO OFF, **ALT 3-4 TO MAIN MIX ON**

All other keys OFF, DSP MUTE ON.

Knob setting: set the LEVEL of input channel in “0”, all EQ controls in center (0).

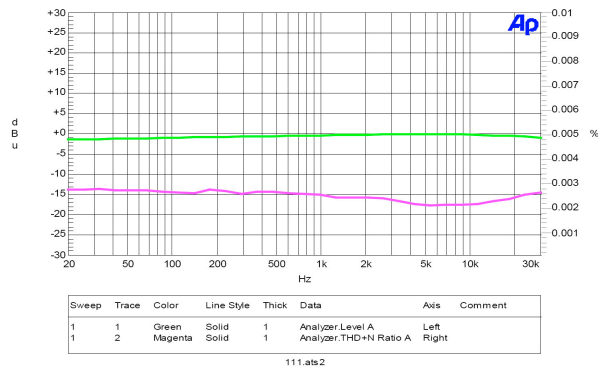
MAIN MAX LEVEL set in “0”.

Other LEVEL set in minimum (∞).

Output signal to MAIN MIX OUTPUT.

Equipment setting same as that in previous page (the measurement of output is 0dBu).

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):



LEVEL +4DBU/-10DBV TEST ON LINE 9~16

Signal input: any a channel of LINE 9~16.

Signal output: unbalanced MAX MIX OUTPUT.

Keys setting: all keys OFF, **LEVEL +4DBU/-10DBV ON**, DSP MUTE ON.

Knobs setting: set the LEVEL of input channel in "0", all EQ controls in center.

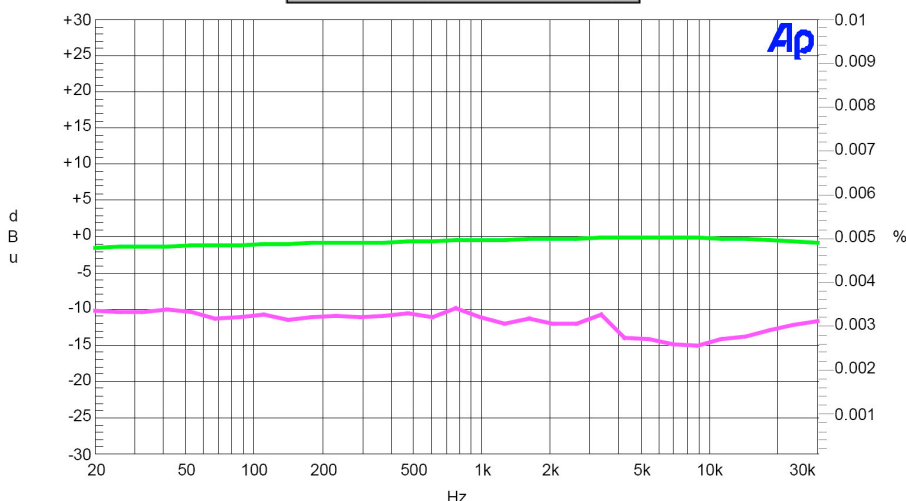
MAIN MAX LEVEL set in "0", other LEVEL set in minimum.

The frequency response as following(Tolerance:±2dBu, distortion: less than 0.005%):

The screenshot displays three windows from an audio software interface:

- Analog Generator:** Wfm: Sine, Normal. Frequency: 1.00000 kHz. Amplitude: -5.000 dBV. Configuration: UnBal BNC/XLR. Z-Out (Ohms): 20. References: Freq: 1.00000 kHz, dBr: 387.3 mV, Watts: 8.000 Ohms, dBm: 600.0 Ohms.
- Analog Input:** Channel A: BNC-Unbal, Level: -0.415 dBu. Channel B: BNC-Unbal, Level: -34.195 dBu. Converter & Sample Rate: HiRes@65536.
- Analyzer:** Instrument: Audio Analyzer. Ch A Input: Analog, Ch B Input: Analog. Level A: -0.425 dBu, Level B: -31.198 dBu. Freq: 1.00000 kHz, Freq B: 296.875 mHz. Function: 0.00317 %, Function B: 0.51144 %. Measurement Function: THD+N Ratio. Det: Auto, RMS, BP/BR Filtr Freq: < 10 Hz, 20kHz LP, Sweep Track. References: dBr A: 387.3 mV, dBr B: 387.3 mV, Freq: 1.00000 kHz, V/Fs: 1.000 V, Watts: 8.000 Ohms, dBm: 600.0 Ohms.

Audio Precision 07/02/04 09:01:23



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

MAIN OUTPUT LEVEL +4dBu TEST

Signal input: any a channel of LINE 1~8.

Signal output: balanced MAX MIX OUTPUT.

Keys setting: all keys OFF, **MAIN OUTPUT LEVEL “MIC +4dBu” OFF**, DSP MUTE ON.

Knobs setting: set the LEVEL of input channel in “0”, all EQ controls in center.

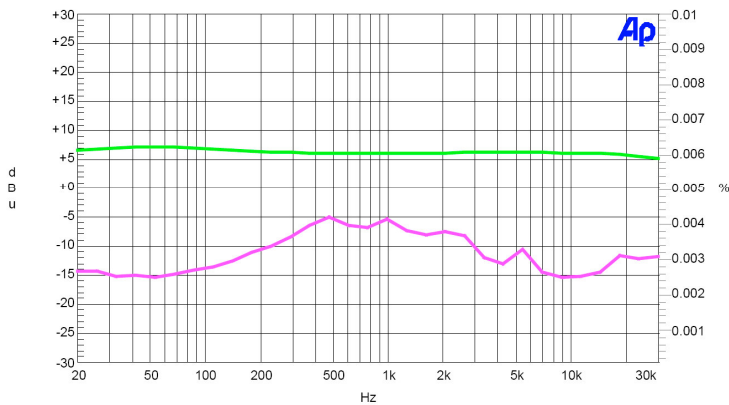
MAIN MAX LEVEL set in “0”, all other LEVEL set in minimum.

The frequency response as following(Tolerance:±2dBu, distortion: less than 0.005%):

The screenshot shows four software windows:

- Analog Generator:** Wfm: Sine, Normal. Frequency: 1.00000 kHz. Outputs: Ch A, Ch B. Amplitude: +20.000 dBu. EQ Curve: Normal. Configuration: UnBal BNC/XLR. Z-Out (Ohms): 20. References: Freq: 1.00000 kHz, dBr: 387.3 mV, Watts: 8.000 Ohms, dBm: 600.0 Ohms.
- Analog Input:** Channel A: XLR-Bal, -Source-. Channel B: BNC-Unbal. Levels: +6.188 dBu, -34.164 dBu. -Peak Mon: [checked]. Auto Range: [checked]. Converter & Sample Rate: HiRes@65536.
- Analyzer:** Instrument: Audio Analyzer. Ch A Input: Analog. Ch B. Levels: +6.188 dBu, -31.175 dBu. Freq: 1.00000 kHz, 296.875 mHz. Range: [checked]. Function: 0.04797 %. Measurement Function: THD+N Ratio. Det: Auto, RMS, BP/BR Fitr Freq. BW: < 10 Hz, 20kHz LP, Sweep Track. Fitr: "A" Weighting. References: dBr A: 387.3 mV, dBr B: 387.3 mV, Freq: 1.00000 kHz, V/Fs: 1.000 V, Watts: 8.000 Ohms, dBm: 600.0 Ohms.
- Sweep:** Data 1: Analyzer.Level A. Top: +30.000 dBu, Bottom: -30.000 dBu, Divs: Auto. Data 2: Analyzer.TH+N Ratio A. Top: 0.01000 %, Bottom: 0.00010 %, Divs: Auto. Source 1: Analog Generator.Frequency. Start: 20.0000 Hz, Stop: 30.0000 kHz, Steps: 30, Multiply: 1.27606. Repeat: [checked], Stereo Sweep: [checked], Append: [checked], Single Point: [checked]. Go button.

Audio Precision 07/02/04 08:43:40



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

111.ats2

Signal input: any a channel of LINE 1~8.

Signal output: balanced MAX MIX OUTPUT.

Keys setting: all keys OFF, **MAIN OUTPUT LEVEL “MIC +4dBu” ON**, DSP MUTE ON.

Knobs setting: set the LEVEL of input channel in “0”, all EQ controls in center.

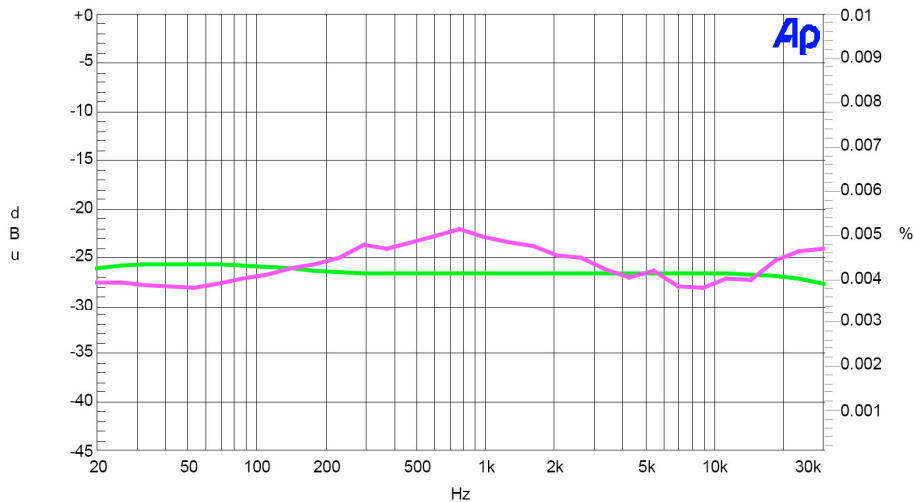
MAIN MAX LEVEL set in “0”, other LEVEL in minimum(∞)

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):

The screenshot displays four software windows for audio analysis:

- Analog Generator:** Set to Sine wave, 1.00000 kHz, +20.000 dBu amplitude.
- Analog Input:** Channel A: XLR-Bal, -26.584 dBu; Channel B: BNC-Unbal, -34.193 dBu.
- Sweep:** Data 1: Analyzer.Level A (-0.000 dBu to -45.000 dBu); Data 2: Analyzer.TH+N Ratio A (0.01000 % to 0.00010 %); Source: Analog Generator.Frequency (20.0000 Hz to 30.0000 kHz).
- Analyzer:** Instrument: Audio Analyzer; Ch A: -26.601 dBu; Ch B: -31.194 dBu; Freq: 999996 kHz; THD+N Ratio: 0.00501 %.

Audio Precision 07/02/04 08:50:39



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	
1	2	Magenta	Solid	1	Analyzer.TH+N Ratio A	Right	

SOLO TEST OF CTRL ROOM OUT

Keys setting: set **“MAIN MIX”** of TO CTRL ROOM ON, others OFF, DSP MUTE ON.

Set ALT3-4 of input channel OFF, **SOLO ON and SOLO MODE OFF (green)**.

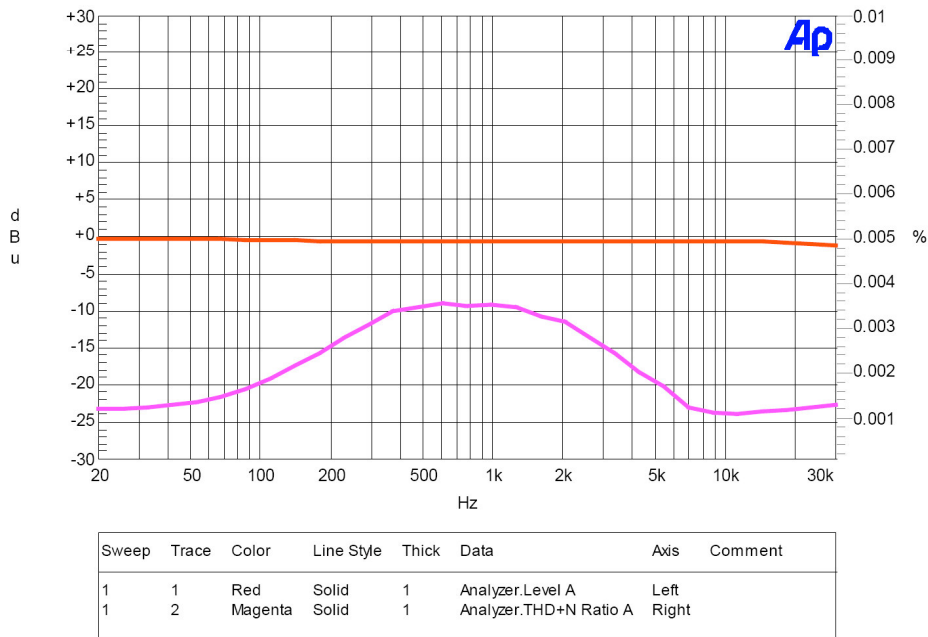
Knobs setting: set the LEVEL of input channel in “0”, all EQ controls in center.

CONTRLO ROOM LEVEL set in “0”, other LEVEL set in minimum(∞)

MAIN MIX LEVEL can't control the output level, and set it minimum(∞)

Output signal to CTRL ROOM OUTPUT.

The frequency response as following(Tolerance: ± 2 dBu, distortion: less than 0.005%):



111.ats2

ANOTHER FUNCTION OF SOLO TEST:

Keys of input channel setting: set **“MAIN MIX”** of TO CTRL ROOM ON, others OFF, DSP MUTE ON, ATL3-4 OFF, **SOLO OFF**

Then set SOLO switch of another channel without signal applied ON, now the original signal of **CTRL ROOM will be OFF**.

EQ HI AND LOW TEST ON CH1~CH8

Keys setting: MUTE ALT3-4 OFF SOLO OFF

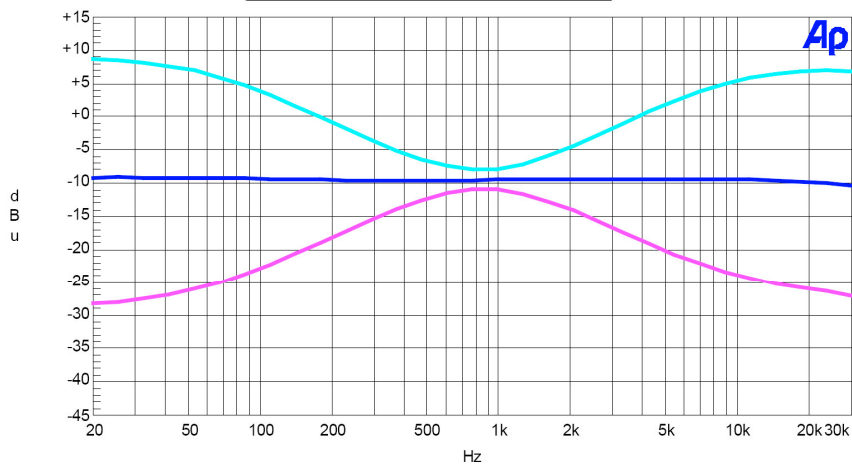
Knobs setting: turn TRIM to minimum counterclockwise, slide potentiometer in "0", MID and FREQ are both set in center.

Set HI and LOW of EQ to maximum (+15), center (0), minimum (-15) respectively.

The frequency of MAIN MIX OUTPUT as following (Tolerance: ± 2 dBu):

Audio Precision

07/01/04 14:16:07



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Magenta	Solid	1	Analyzer.Level A	Left	
2	1	Blue	Solid	1	Analyzer.Level A	Left	
3	1	Cyan	Solid	1	Analyzer.Level A	Left	

111.ats2

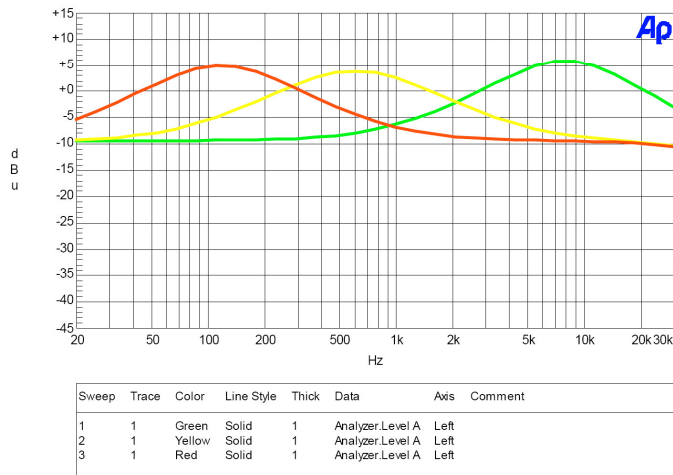
EQ MID AND FREQ TEST ON LINE 1~8

Keys setting: MUTE ALT3-4 OFF SOLO OFF

Knobs setting: turn TRIM to minimum in counterclockwise, slide potentiometer in "0", HI and LOW set in center (0).

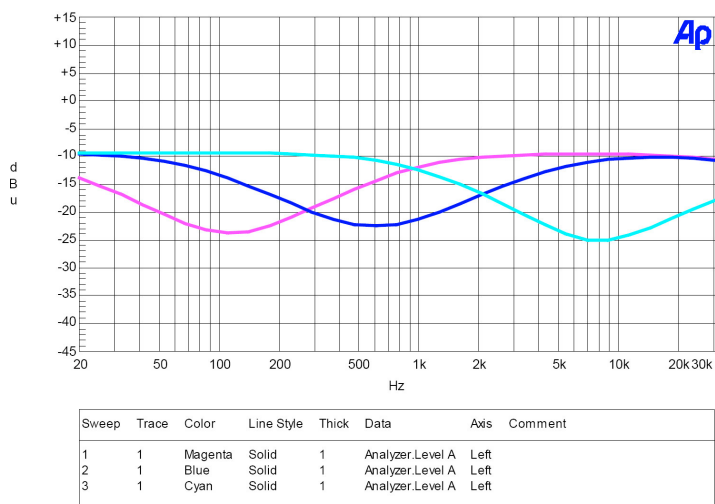
Set MID EQ to +15, and FREQ to 8KHz, 800Hz, 100Hz respectively.

Equipment setting same as that in previous page, the frequency response are shown as following(Tolerance:±2dBu):



Set MID EQ to -15, and FREQ to 8KHz, 800Hz, 100Hz respectively.

Equipment setting same as that in previous page, the frequency response are shown as following(Tolerance:±2dBu):



111.ats2

EQ HI AND LOW TEST ON LINE 9~16

Keys setting: MUTE ALT3-4 OFF SOLO OFF

Knobs setting: slide potentiometer in "0", HI-MID and MID-LOW in center.

Set HI and LOW of EQ to maximum (+15), center (0), minimum (-15) respectively.

The frequency of MAIN MIX OUTPUT as following (Tolerance: ± 2 dBu):

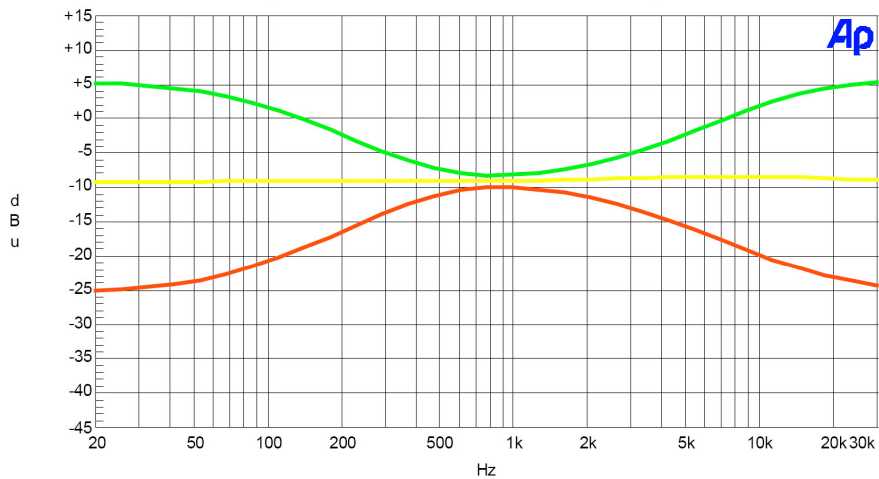
The screenshot displays three windows from an audio software interface:

- Analog Generator:** Shows a sine wave at 1.00000 kHz with an amplitude of +0.000 dBu. It includes options for outputs (Ch A, Ch B) and EQ curves.
- Analog Input:** Shows Channel A (BNC-Unibal) at -8.990 dBu and Channel B (GenMon) at -0.014 dBu. It includes an Auto Range checkbox and a converter/sample rate setting of HIRes@65536.
- Analyzer:** Shows a THD+N Ratio measurement of 0.00750% at 1.00000 kHz. It includes various measurement parameters like level, frequency, and function.

Additional text in the screenshot includes "Audio Precision" and a timestamp "07/01/04 14:38:48".

Audio Precision

07/01/04 14:38:48



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Green	Solid	1	Analyzer.Level A	Left	
2	1	Yellow	Solid	1	Analyzer.Level A	Left	
3	1	Red	Solid	1	Analyzer.Level A	Left	

111.ats2

EQ HI-MID AND MID-LOW TEST ON LINE 9~16

Keys setting: MUTE ALT3-4 OFF SOLO OFF

Knobs setting: potentiometer in "0", HI and LOW in center.

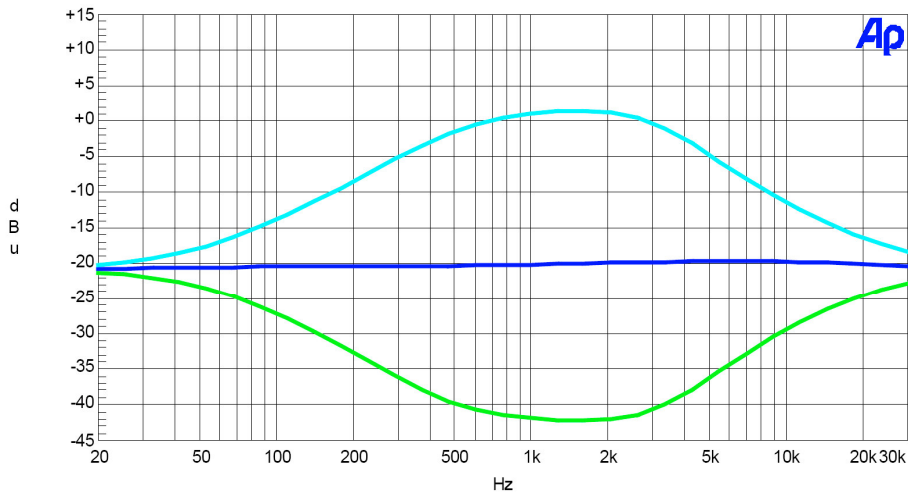
Set HI-MID and MID-LOW EQ to maximum (+15), center (0), minimum (-15) respectively.

The frequency response of MAIN MIX OUTPUT as following (Tolerance: ± 2 dBu):

The screenshot displays four software panels for audio analysis:

- Analog Generator:** Set to Sine wave, 1.00000 kHz, -10.002 dBu amplitude.
- Analog Input:** Channel A (BNC-Unbal) at +2.505 dBu, Channel B (GenMon) at -10.018 dBu.
- Analyzer:** Instrument: Audio Analyzer, Ch A Input: Analog, Ch B. Measurements: Level A: -20.159 dBu, Level B: -10.024 dBu, Freq: 1.00000 kHz, THD+N Ratio: 1.02702%.
- Sweep:** Data 1: Analyzer Level A, Top: +15.000 dBu, Bottom: -45.000 dBu. Source 1: Analog Generator.Frequency, Start: 20.0000 Hz, Stop: 30.0000 kHz, Steps: 30, Multiply: 1.27606.

Audio Precision 07/01/04 15:00:35



Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Blue	Solid	1	Analyzer.Level A	Left	
2	1	Cyan	Solid	1	Analyzer.Level A	Left	
3	1	Green	Solid	1	Analyzer.Level A	Left	

111.ats2

HUM AND NOISE TEST

Keys setting: all keys OFF(NO PUSH), DSP MUTE ON.

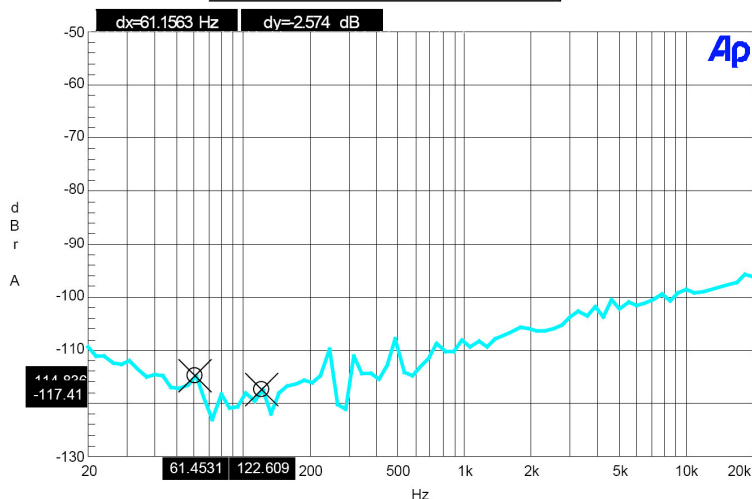
Knobs setting: set MAIN MAX LEVEL in "10"(MAX), other LEVEL to minimum(∞)
turn TRIM to minimum, other knob in center.

Output signal to MAX MIX OUTPUT, and cancel the input signal.

The frequency response as following (it will less than 10dB below 1KHz Band Pass) :

Audio Precision

07/01/04 19:11:39



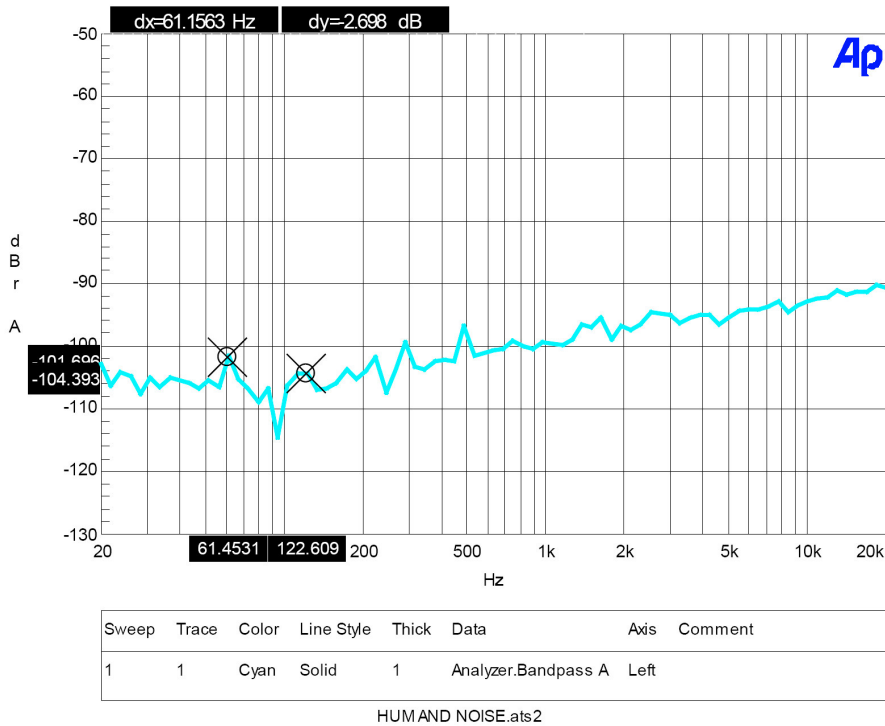
Sweep	Trace	Color	Line Style	Thick	Data	Axis	Comment
1	1	Cyan	Solid	1	Analyzer.Bandpass A	Left	

HUM AND NOISE ats?

Keys setting: all keys OFF(NO PUSH), DSP MUTE ON.

Knob setting: LEVEL at maximum(∞), TRIM at minimum, others knobs in center.

The frequency response as following (it will less than 90dBr below 1KHz Band Pass):



DSP TEST

Keys setting: MUTE ALT3-4 OFF SOLO OFF, others OFF, *DSP MUTE OFF*.

Knobs setting: set LEVEL of input channel in “0”, all EQ controls in center (0).

The PRESETS of DSP set in “15”, VARIATIONS set in “1”.

Turn *AUX SEND 2 and AUX RTN2 (DFX) both to maximum (+15)*

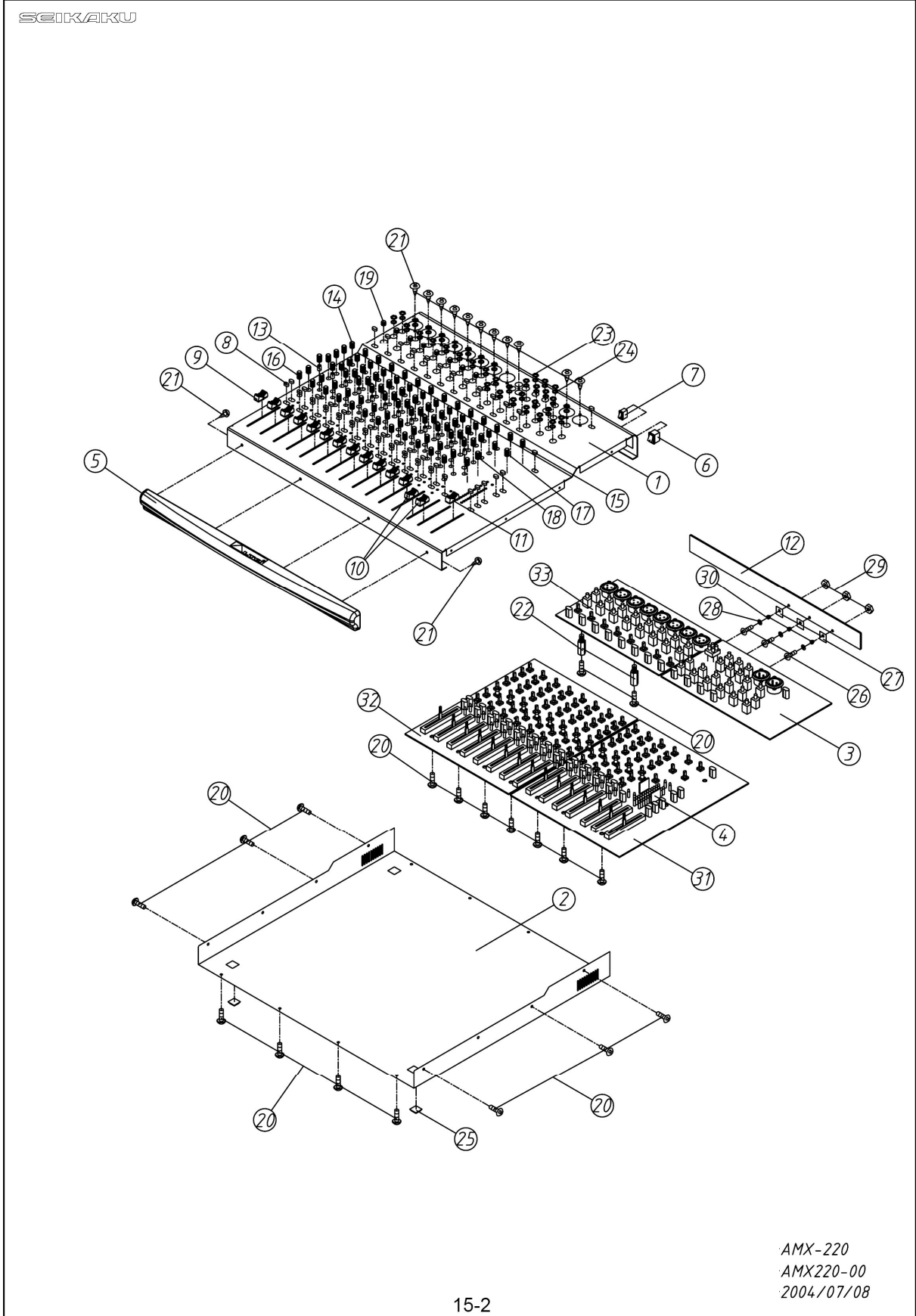
MAIN MAX LEVEL set in “0”.

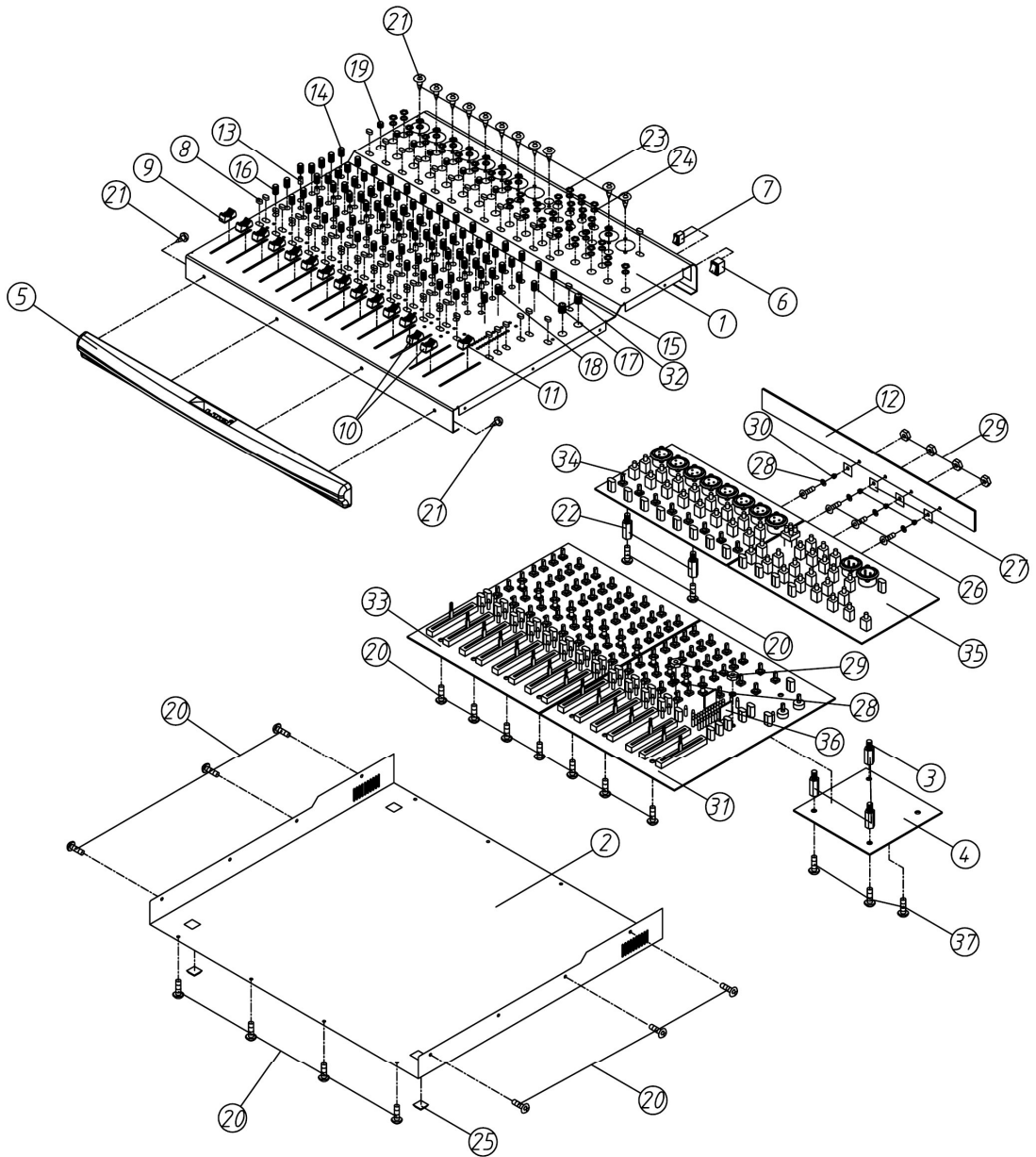
Other LEVEL set in minimum(∞).

Output signal to MAIN MIX OUTPUT.

Using oscilloscope to check that the frequency response curve shall contract quickly.

8. Exploded Views & Mechanical Parts List





AMX-220FX
AMX220FX-00
2004/08/05

Mechanical Parts List (for AMX-220)

No.	Item Number	Description	Specification	Quantify
1	MA04751	Panel	AMX-220 ALTO	1
2	MB03216	chassis	AMX-220	1
3	HB01288	PCB-FR-1	AMX-220PU1_VER040508	1
4	HB01285	PCB-FR4/2L	12VMETER(2*5)_VER040611	1
5	NI01947	handle	AMX-220;220FX_V1.0	1
6	HI00026	Power switch	RA12KKATOF 2P	1
7	HI00171	Power switch	R612KKAT0F1	1
8	NI01863	Button	φ 5.5*W10*7.5 black	44
9	NI02309	Slide switch	24*11.5*11(outer grey 8C inner black)	12
10	NI02352	Slide switch	24*11.5*11(outer red 187C inner black)	2
11	NI02353	Slide switch	24*11.5*11(outer blue 282C inner white)	1
12	MJ00312	Heat sink	AMX-220_V1.0	1
13	NI02377	Button	φ 5.5*7.5mm(inner 3.3*3.3mm)	12
14	NI02083	Plastical knob	φ 10.5*18 dual color	40
15	NI02633	Plastical knob	φ 10.5*18mm dual color	14
16	NI02082	Plastical knob	φ 10.5*18 dual color	20
17	NI02817	Plastical knob	φ 10.5*18mm dual color	2
18	NI02081	Plastical knob	φ 10.5*18 dual color	14
19	NI02714	Plastical knob	φ 10*13.5mm dual color	8
20	MG0004	Black plated screw	M3*6	41
21	MG00061	Black plated screw	M3*10	25
22	MG00247	Copper post	M3*10*0.5PH	2
23	ME00060	MIC socket nut	For hexagon JY-6351G-02-250	37
24	MF00061	T-MIC socket washer	For round JY-6351G-02-250	37
25	NI00501	Adhesive foot cushion	12.7*9*3t(SF-004)	4
26	MG00166	Nickel screw	M3*10	3
27	NC00005	Silicon insulator	TO-220 square	3
28	MF00037	Spring washer	φ 3* φ 5*1t	3
29	ME00015	Color nut	3mm	3
30	NI00863	Insulation bean	TO220B	3
31	HB01286	PCB-FR-1	AMX-220MN1_VER040610	1
32	HB01287	PCB-FR-1	AMX-220MN2_VER040605	1
33	HB01289	PCB-FR-1	AMX-220PU2_VER040508	1

Mechanical Parts List (for AMX-220FX)

No.	Item Number	Description	Specification	Quantify
1	MA04750	Panel	AMX-220FX ALTO	1
2	MB03216	Chassis	AMX-220	1
3	MG00243	Copper post	M3*5*0.5PH	3
4	HB00895	PCB-FR4/4L	313123/2(1*6)	1
5	NI01947	Handle	AMX-220;220FX_V1.0	1
6	HI00026	Power switch	RA12KKATOF 2P	1
7	HI00171	Power switch	R612KKATOF1	1
8	NI01863	Button	φ 5.5*W10*7.5 BLACK	45
9	NI02309	Slide switch	24*11.5*11(outer grey 8C inner black)	12
10	NI02352	Slide switch	24*11.5*11(outer red 187C inner black)	2
11	NI02353	Slide switch	24*11.5*11(outer blue 282C inner white)	1
12	MJ00312	Heat sink	AMX-220_V1.0	1
13	NI02377	Button	φ 5.5*7.5mm(inner 3.3*3.3mm) BLACK	12
14	NI02083	Plastical knob	φ 10.5*18 dual color	40
15	NI02633	Plastical knob	φ 10.5*18mm dual color	14
16	NI02082	Plastical knob	φ 10.5*18 dual color	20
17	NI02817	Plastical knob	φ 10.5*18mm dual color	2
18	NI02081	Plastical knob	φ 10.5*18 dual color	14
19	NI02714	Plastical knob	φ 10*13.5mm dual color	8
20	MG00041	Black plated screw	M3*6	38
21	MG00061	Black plated screw	M3*10	25
22	MG00247	Copper post	M3*10*0.5PH	2
23	ME00060	MIC socket nut	For hexagon JY-6351G-02-250	38
24	MF00061	T-MIC socket washer	For round JY-6351G-02-250	38
25	NI00501	Adhesive foot cushion	12.7*9*3t(SF-004)	4
26	MG00166	Nickel screw	M3*10	4
27	NC00005	Silicon insulator	TO-220 square	4
28	MF00037	Spring washer	φ 3* φ 5*1T	6
29	ME00015	Color nut	3mm	6
30	NI00863	Insulator bean	TO220B	4
31	HB01286	PCB-FR-1	AMX-220MN1_VER040610	1
32	NI02386	Plastical knob	φ 14*13mm dual color	2
33	HB01287	PCB-FR-1	AMX-220MN2_VER040605	1
34	HB01289	PCB-FR-1	AMX-220PU2_VER040508	1
35	HB01288	PCB-FR-1	AMX-220PU1_VER040508	1
36	HB01285	PCB-FR-4/2L	12VMETER(2*5)_VER040611	1
37	MG00036	Black plated screw	M3*4	3

9. BOM

AMX-220 Parts List

No.	Part No.	Description	Specification	Remark
1	MA04751	panel	AMX-220 ALTO_V1.1	
2	MA04746	panel	AMX-220	
3	MA04747	panel	AMX-220 1.0t*439.5*402*42mm_V1.3	
4	ME00113	iron pillar	M3*13.8*0.5PH_V1.1	
5	MJ00061	Zn-plated board	1*2135*1220 20.45kg	
6	MB03216	rear board	AMX-220	
7	MB03217	bottom board	AMX-220 1.2t*442*402*43mm	
8	MJ00063	Zn-plated board	1.2*2135*1220 24.54kg	
9	HI00026	power switch	RA12KKATOF 2P	
10	HI00171	power switch	R612KKATOF1	
11	NI01863	key	ϕ 5.5*W10*7.5	
12	NI01862	key	5.5*5.5*14.5	
13	NI02377	knob	ϕ 5.5*7.5mm(内3.3*3.3mm)	
14	NI02083	knob	ϕ 10.5*18mm	
15	NI02082	knob	ϕ 10.5*18mm	
16	NI02817	knob	ϕ 10.5*18mm	
17	NI02081	knob	ϕ 10.5*18mm	
18	NI02714	knob	ϕ 10*13.5mm	
19	NI02309	knob	24*11.5*11	
20	NI02352	knob	24*11.5*11	
21	NI02353	knob	24*11.5*11	
22	MG00041	screw	M3*6	
23	MG00061	screw	M3*10	
24	MG00247	copper pillar	M3*10*0.5PHsingle length16	
25	ME00060	nut	JY-6351G-02-250	
26	MF00061	washer	JY-6351G-02-250	
27	TG00123	adapter	120V/60Hz_AC18V/2000mA_EI-57_UL CSA	
28	NI00252	sleeve	ϕ 4*20mm	
29	NI00248	sleeve	ϕ 4*1000mm	
30	NI00498	foot cushion	12.7*7*6mm(SF-005)	
31	NA00136	PE bag	0.05t*820*540mm	
32	HJ00006	desiccant	30g	
33	NE05004	label	ALTO	
34	NH00334	cone paper	0.040*1m	
35	NE13198	label	AMX-220_V1.0	

AMX-220 Parts List

No.	Part No.	Description	Specification	Remark
36	NH00012	bond paper	0.04*1M	
37	NI00014	membrane	0.035*1M	
38	NI00218	cable tie-black	ALT-102SB	
39	HA01388	row-wire connector wiring	2P 100	
40	HA01442	row-wire connector wiring	2P 200	
41	NI01947	handle	AMX-220;220FX_V1.0	
42	NI02960	handle	442*33*26mm AMX-220 black	
43	NF00061	assurance card	ALTO	
44	NB03028	box	AMX-220 ALTO_V1.0	
45	NB03029	paper outer case 6 hole	AMX-220/220FX ALTO_V1.0	
46	HK04363	PC board	P-AMX-220MN1-DIP	
47	SA00052	L.E.D high intensity	3m/m round(green)long foot 26	LD16,LD17,LD18,LD19,LD20,LD21,LD22,LD23,LD24,LD25,LD26,LD27,LD28,LD29,LD30,LD31,LD32,LD33,LD34,LD35,LD36
48	SA00053	L.E.D high intensity	3m/m round(red)long foot 26mm	LD1,LD2,LD3,LD4,LD5,LD6,LD7,LD8,LD37,LD38,LD39,LD40
49	SA00054	L.E.D high intensity	3m/m round(yellow)long foot 26	LD9,LD10,LD11,LD12,LD13,LD14,LD15
50	NI01782	LED spacer support	LEDS-11 11mm	
51	RC00359	potentiometer	W50KΩ RD09F113A224-50K4BT(SAS1);30F-C	VR4,VR5,VR89,VR90,VR91,VR92,VR93,VR94,VR95,VR96
52	RC00360	potentiometer	B50KΩ RD12L12CA23A-50K3BT*2(SAS1);30F-C	VR33,VR34,VR35,VR36,VR37,VR38,VR39,VR40,VR41,VR42,VR43,VR45,VR46,VR47,VR48,VR52
53	RC00361	potentiometer	W50KΩ RD12L12CA60B-50K4BT*2(SAS1);30F-C	VR3,VR6,VR7,VR97
54	HC00261	row-wire header(male)	12P 2.0mm 180°	CN1,CN3,CN5,CN7
55	HC00505	row-wire header(male)	16P 2.0mm 180°	CN4
56	RC00285	potentiometer	D10KΩ RF60112P600G-10KD*2(SAS1)	VR49,VR50,VR51,VR56,VR64
57	RC00284	potentiometer	D10KΩ RF6011YP600F-10KD(SAS1)	VR1,VR2
58	HI00236	push-button switch	2-stage 6P PS-9226A(SELF-LOCK)	SW1,SW2,SW3,SW4,SW5,SW6,SW8,SW9,SW10,SW11
59	HI00237	push-button switch	2stage 12P PS-13422R(SELF-LOCK)	SW12,SW13,SW14,SW15,SW16,SW17,SW18,SW19,SW20
60	HK04364	PC board	P-AMX-220MN1-AI	
61	RA01260	fixed resistor 1/4W	120Ω	R317,R320,R346
62	CF00146	metal-film capacitor	0.001uF/63V 5% CASE01	C177,C178,C179,C180,C181,C182,C183,C184
63	CF00138	metal-film capacitor MSC	0.012uF/63V ±5% CASE01	C161,C162,C163,C164,C165,C166,C167,C168,C169,C170,C171,C172,C173,C174,C175,C176
64	CF00148	metal-film capacitor	0.0033uF/100V 5% CASE01	C205,C206,C207,C208,C209,C210,C211,C212,C213,C214,C215,C216,C217,C218,C219,C220
65	CF00147	metal-film capacitor	0.047uF/100V 5% CASE01	C221,C222,C223,C224,C225,C226,C227,C228
66	CB00248	electrolytic capacitor	2.2uF/50V φ 4*5mm	C229,C230,C231,C232,C233
67	CB00194	electrolytic capacitor	47uF/25V φ 5*11mm	C34,C35,C36,C37,C41,C42,C43,C44,C45,C46,C47,C48,C49,C50,C51,C56,C57,C63,C64,C65,C66,C67,C68,C69,C70,C71,C72,C73,C74,C75,C76,C77,C78,C79,C80,C81,C82,C83,C84,C85,C86,C87,C88,C89,C90,C91,C92,C93,C94,C97,C98,C99,C100,C101,C102,C243,C244
68	HK04365	PC board	P-AMX-220MN1-SMD	
69	HB01286	PCB	AMX-220MN1_VER040828	
70	RD00059	SMD fixed resistor 1/10W	0.0Ω ±5% 0603	R325,R326

AMX-220 Parts List

No.	Part No.	Description	Specification	Remark
71	RD00065	SMD fixed resistor 1/10W	47Ω ±5% 0603	R343,R344
72	RD00069	SMD fixed resistor 1/10W	120Ω ±5% 0603	R176,R177
73	RD00347	SMD fixed resistor 1/10W	510Ω ±5% 0603	R321,R322,R345
74	RD00085	SMD fixed resistor 1/10W	1.5KΩ ±5% 0603	R295,R296,R297,R298
75	RD00086	SMD fixed resistor 1/10W	1.8KΩ ±5% 0603	R180,R181,R182,R183,R184,R185,R186,R187,R188, R189,R190,R191,R192,R193,R194,R195,R196,R197, R198,R199,R200,R201,R202,R203,R204,R205,R206, R207,R208,R209,R210,R211
76	RD00087	SMD fixed resistor 1/10W	2.0KΩ ±5% 0603	R342
77	RD00088	SMD fixed resistor 1/10W	2.2KΩ ±5% 0603	R291,R292,R293,R294
78	RD00093	SMD fixed resistor 1/10W	4.7KΩ ±5% 0603	R66,R71,R75,R76,R77
79	RD00094	SMD fixed resistor 1/10W	5.1KΩ ±5% 0603	R5,R6,R7,R8,R9,R10,R11,R12,R13,R17,R18,R23,R24,R25, R26,R27,R28,R29,R30,R34,R35,R36,R37,R38,R41,R42,R 43,R46,R331,R333,R341,R348,R350,R353,R354,R355,R35 6,R335,R337,R339
80	RD00095	SMD fixed resistor 1/10W	5.6KΩ ±5% 0603	R330,R332,R334,R336,R338,R340,R347,R349
81	RD00096	SMD fixed resistor 1/10W	6.2KΩ ±5% 0603	R137
82	RD00097	SMD fixed resistor 1/10W	6.8KΩ ±5% 0603	R241,R242,R243,R244,R245,R246,R247,R248,R2 49,R250,R251,R252,R253,R254,R255,R256,R257, R258,R259,R260
83	RD00099	SMD fixed resistor 1/10W	8.2KΩ ±5% 0603	R2,R3,R49,R50
84	RD00101	SMD fixed resistor 1/10W	10KΩ ±5% 0603	R66,R67,R68,R69,R99,R90,R91,R92,R93,R94,R95,R96,R97,R98,R104 R105,R106,R107,R108,R109,R110,R111,R112,R113,R114,R115,R116, R117,R118,R119,R120,R121,R122,R123,R124,R125,R126,R127,R128, R129,R130,R131,R132,R133,R134,R178,R179,R328,R329,R431,R432, R433,R434,R435,R436
85	RD00102	SMD fixed resistor 1/10W	12KΩ ±5% 0603	R47,R48,R156,R157,R158,R163,R164,R165 ,R166,R167,R168,R169
86	RD00103	SMD fixed resistor 1/10W	15KΩ ±5% 0603	R82,R83,R313,R314,R136,R135
87	RD00104	SMD fixed resistor 1/10W	18KΩ ±5% 0603	R1,R4,R44,R45,R51,R52,R53,R57
88	RD00306	SMD fixed resistor 1/10W	20KΩ ±5% 0603	R14,R15,R16,R31,R32,R33,R39,R40,R138,R139,R140 R141,R142,R143,R144,R145,R146,R147,R148,R149, R150,R151,R152,R154
89	RD00105	SMD fixed resistor 1/10W	22KΩ ±5% 0603	R63,R64,R65,R70,R221,R222,R223,R224,R227,R 228,R229,R230,R231,R232,R351,R352,R19,R20, R21,R22,R153,R155,R311,R312,R315,R316
90	RD00106	SMD fixed resistor 1/10W	27KΩ ±5% 0603	R299,R300,R301,R302,R303,R304,R305,R306
91	RD00353	SMD fixed resistor 1/10W	36KΩ ±5% 0603	R318,R319
92	RD00110	SMD fixed resistor 1/10W	43KΩ ±5% 0603	R54,R55,R56,R58,R59,R60,R61,R62
93	RD00111	SMD fixed resistor 1/10W	47KΩ ±5% 0603	R277,R278,R279,R280,R281,R282,R283,R284, R285,R286,R287,R288,R289,R290,R80,R81
94	RD00112	SMD fixed resistor 1/10W	56KΩ ±5% 0603	R307,R308,R309,R310
95	RD00116	SMD fixed resistor 1/10W	100KΩ ±5% 0603	R170,R171,R172,R173,R174,R175,R323,R324
96	RD00263	SMD fixed resistor 1/10W	200KΩ ±5% 0603	R233,R234,R235,R236,R237,R238,R239,R240
97	RD00119	SMD fixed resistor 1/10W	220KΩ ±5% 0603	R212,R213,R214,R215,R216,R217,R218,R219,R220
98	RD00125	SMD fixed resistor 1/10W	1.0MΩ ±5% 0603	R261,R262,R263,R264,R265,R266,R267,R268, R269,R270,R271,R272,R273,R274,R275,R276
99	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C103,C104,C105,C106,C107,C108,C109,C110,C111,C112,C113,C114, C115,C116,C117,C122,C123,C124,C125,C126,C127,C128,C129,C130, C131,C132,C133,C134,C135,C136,C137,C138,C139,C140,C141,C142, C143,C144,C145,C146,C147,C148,C149,C150,C151,C152,C153,C154, C155,C156,C157,C158,C159,C160,C238,C248,C249,C250,C251
100	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,C17,C 18,C23,C24,C25,C26,C27,C28,C29,C30,C31,C32,C33,C35,C36,C185, C186,C187,C188,C189,C190,C191,C192,C193,C194,C195,C196,C197, C198,C199,C200,C201,C202,C203,C204,C245,C246,C247
101	CI00055	SMD ceramic capacitor 0603	47PF/50V NPO ±5%	C239,C240
102	CI00059	SMD ceramic capacitor 0603	100PF/50V NPO ±5%	C241,C242
103	SE00011	SMD rectifier diode	RLS4148 0.5A (LL-34)	D3,D4,D5,D6,D7,D8
104	SE00028	diode	BAS316,115	D1,D2,D9,D10,D11,D12
105	SF00039	SMD field effect transistor	MMBFJ112(SOT-23)/(FAIRCHILD)	TR11,TR12,TR13,TR14,TR15

AMX-220 Parts List

No.	Part No.	Description	Specification	Remark
106	SF00056	transistor	MMBT3904(SOT-23)/(PHI)	TR1,TR2,TR3,TR4,TR5,TR6,TR7,TR8
107	SF00053	transistor	MMBT3906(SOT-23)/(PHI)	TR9,TR10,TR16
108	SG00122	SMD integrated circuit	NJM4580M-TE3	U1,U2,U3,U4,U5,U6,U7,U10,U11,U12,U13,U14,U15,U16,U17,U24,U25,U26,U27,U28,U29,U30,U31,U32,U33,U34,U35,U8,U9
109	RD00089	SMD fixed resistor 1/10W	2.7K Ω \pm 5% 0603	R67,R69,R73,R74,R78,R79,R68,R72
110	RD00303	SMD precise resistor 1/10W	57.6K Ω \pm 1% 0603	R85,R84
111	HK04376	PC board	P-12VMETER-DIP(AMX-220)	CN8,CN9
112	HC00698	row pin (single)#5100	2.0 90° 17P(gold-plated)2.5/9.5mm 2mm	CN6
113	HK04377	PC board	P-12VMETER-SMD(AMX-220)	
114	HB01285	PCB	12VMETER(2*5)_VER040611	
115	RD00304	SMD fixed resistor 1/10W	33 Ω \pm 5% 0603	R1
116	RD00069	SMD fixed resistor 1/10W	120 Ω \pm 5% 0603	R2
117	RD00076	SMD fixed resistor 1/10W	330 Ω \pm 5% 0603	R4,R6
118	RD00078	SMD fixed resistor 1/10W	470 Ω \pm 5% 0603	R3,R5,R7
119	RD00347	SMD fixed resistor 1/10W	510 Ω \pm 5% 0603	R8
120	RD00348	SMD fixed resistor 1/10W	620 Ω \pm 5% 0603	R9
121	RD00351	SMD fixed resistor 1/10W	1.3K Ω \pm 5% 0603	R10
122	RD00087	SMD fixed resistor 1/10W	2.0K Ω \pm 5% 0603	R11
123	RD00101	SMD fixed resistor 1/10W	10K Ω \pm 5% 0603	R12
124	RD00115	SMD fixed resistor 1/10W	82K Ω \pm 5% 0603	R13
125	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C1,C2
126	SG00210	SMD integrated circuit	LM339DT/(ST)	U1,U2,U3
127	RC00465	potentiometer	B5K Ω RD09F113A225-5K2BT(SAS1);30F-C	VR69,VR70,VR71,VR72
128	HK04367	PC board	P-AMX-220MN2-DIP	
129	SA00053	L.E.D high intensity	3m/m round(red)long foot 26mm	LD9,LD10,LD11,LD12,LD13,LD14,LD15,LD16,LD17,LD18,LD19,LD20,LD21,LD22,LD23,LD24
130	SA00054	L.E.D high intensity	3m/m round(yellow)long foot 26	LD1,LD2,LD3,LD4,LD5,LD6,LD7,LD8
131	NI01782	LED spacer support	LEDS-11 11mm	
132	RC00358	potentiometer	B50K Ω -RD09F113A223-50K2BT(SAS1);30F-C	VR9,VR10,VR11,VR12,VR13,VR14,VR15,VR16,VR17,VR18,VR19,VR20,VR21,VR22,VR23,VR24,VR25,VR26,VR27,VR28,VR29,VR30,VR31,VR32
133	RC00359	potentiometer	W50K Ω RD09F113A224-50K4BT(SAS1);30F-C	VR73,VR74,VR75,VR76,VR77,VR78,VR79,VR80,VR81,VR82,VR83,VR84,VR85,VR86,VR87,VR88
134	RC00284	potentiometer	D10K Ω RF6011YP600F-10KD(SAS1)	VR53,VR54,VR55,VR56,VR57,VR58,VR59,VR60
135	HC00259	row-wire header(male)	8P 2.0mm 180°	CN3,CN6
136	HC00261	row-wire header(male)	12P 2.0mm 180°	CN1
137	HA03123	wire	16P-16P 230mm UL1007 28AWG	CN2
138	HI00236	push-button switch	2-stage 6P PS-9226A(SELF-LOCK)	SW1,SW4,SW7,SW10,SW32,SW35,SW38,SW41
139	HI00237	push-button switch	2stage 12P PS-13422R(SELF-LOCK)	SW2,SW3,SW5,SW6,SW8,SW9,SW11,SW12,SW33,SW34,SW36,SW37,SW39,SW40,SW42,SW43
140	RC00366	potentiometer	C500K Ω RD12L123A43D-500K15C*2(SAS1)30F-C	VR1,VR2,VR3,VR4,VR5,VR6,VR7,VR8

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No.	Part No.	Description	Specification	Remark
141	HK04368	PC board	P-AMX-220MN2-AI	
142	RA01260	fixed resistor 1/4W	120 Ω	R57
143	CB00248	electrolytic capacitor	2.2uF/50V ϕ 4*5mm	C249,C250,C251,C252,C253,C254,C255,C256
144	CB00194	electrolytic capacitor	47uF/25V ϕ 5*11mm	C201,C202,C203,C204,C205,C206,C207,C208,C209,C210,C211,C212,C213,C214,C215,C216,C217,C218,C219,C220,C221,C222,C223,C224
145	CF00143	metal-film capacitor MSC	0.0015uF/100V 5% CASE01	C57,C58,C59,C60,C61,C62,C63,C64
146	CF00137	metal-film capacitor MSC	0.033uF/63V 5% CASE01	C65,C66,C67,C68,C69,C70,C71,C72,C73,C74,C75,C76,C77,C78,C79,C80
147	CF00141	metal-film capacitor MSC	0.0068uF/100V 5% CASE01	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,C17,C18,C19,C20,C21,C22,C23,C24
148	HK04369	PC board	P-AMX-220MN2-SMD	
149	HB01287	PCB	AMX-220MN2_VER040828	
150	RD00347	SMD fixed resistor 1/10W	510 Ω \pm 5% 0603	R58
151	RD00085	SMD fixed resistor 1/10W	1.5K Ω \pm 5% 0603	R317,R318,R319,R320,R321,R322,R323,R324
152	RD00088	SMD fixed resistor 1/10W	2.2K Ω \pm 5% 0603	R181,R182,R183,R184,R185,R186,R187,R188,R249,R250,R251,R252,R253,R254,R255,R256,R267,R261,R262,R263,R264,R265,R266,R268
153	RD00090	SMD fixed resistor 1/10W	3.0K Ω \pm 5% 0603	R1,R2,R3,R4,R5,R6,R7,R8
154	RD00092	SMD fixed resistor 1/10W	3.9K Ω \pm 5% 0603	R85,R86,R87,R88,R89,R90,R91,R92
155	RD00093	SMD fixed resistor 1/10W	4.7K Ω \pm 5% 0603	R245,R246,R247,R248,R258,R259,R260,R257
156	RD00094	SMD fixed resistor 1/10W	5.1K Ω \pm 5% 0603	R60,R62,R64,R66,R68,R70,R72,R74,R93,R94,R95,R96,R97,R98,R99,R100,R103,R104,R107,R108,R111,R112,R115,R116,R117,R118,R119,R120,R121,R122,R123,R124,R127,R128,R131,R132,R135,R136,R139,R140
157	RD00095	SMD fixed resistor 1/10W	5.6K Ω \pm 5% 0603	R59,R61,R63,R65,R67,R69,R71,R73,R165,R166,R167,R168,R169,R170,R171,R172,R173,R174,R175,R176,R177,R178,R179,R180
158	RD00096	SMD fixed resistor 1/10W	6.2K Ω \pm 5% 0603	R9,R10,R11,R12,R13,R14,R15,R16,R17,R18,R19,R20,R21,R22,R23,R24
159	RD00097	SMD fixed resistor 1/10W	6.8K Ω \pm 5% 0603	R217,R218,R219,R220,R221,R222,R223,R224
160	RD00101	SMD fixed resistor 1/10W	10K Ω \pm 5% 0603	R25,R26,R27,R28,R29,R30,R31,R32,R33,R34,R35,R36,R37,R38,R39,R40,R41,R42,R43,R44,R45,R46,R47,R48,R49,R50,R51,R52,R53,R54,R55,R56
161	RD00306	SMD fixed resistor 1/10W	20K Ω \pm 5% 0603	R101,R102,R105,R106,R109,R110,R113,R114,R125,R126,R129,R130,R133,R134,R137,R138
162	RD00106	SMD fixed resistor 1/10W	27K Ω \pm 5% 0603	R329,R330,R331,R332,R333,R334,R335,R336,R337,R338,R339,R340,R341,R342,R343,R344
163	RD00111	SMD fixed resistor 1/10W	47K Ω \pm 5% 0603	R281,R282,R283,R284,R285,R286,R287,R288
164	RD00114	SMD fixed resistor 1/10W	68K Ω \pm 5% 0603	R301,R302,R303,R304,R305,R306,R307,R308
165	RD00125	SMD fixed resistor 1/10W	1.0M Ω \pm 5% 0603	R193,R194,R195,R196,R197,R198,R199,R200
166	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C81,C82,C83,C84,C85,C86,C87,C88,C89,C90,C91,C92,C93,C94,C95,C96,C97,C98,C99,C100,C101,C102,C103,C104,C105,C106,C107,C108,C109,C110,C111,C112
167	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO \pm 5%	C25,C26,C27,C28,C29,C30,C31,C32,C33,C34,C35,C36,C37,C38,C39,C40,C137,C138,C139,C140,C141,C142,C143,C144
168	SE00028	diode	BAS316,115	D1,D2,D3,D4,D5,D6,D7,D8
169	SF00056	transistor	MMBT3904(SOT-23)/(PHI)	TR1,TR2,TR3,TR4,TR5,TR6,TR7,TR8,TR9,TR10,TR11,TR12,TR13,TR14,TR15,TR16
170	SF00053	transistor	MMBT3906(SOT-23)/(PHI)	TR17
171	SG00122	SMD integrated circuit	NJM4580M-TE3	U1,U2,U3,U4,U5,U6,U7,U8,U9,U10,U11,U12,U13,U14,U15,U16
172	RC00465	potentiometer	B5K Ω RD09F113A225-5K2BT(SAS1);30F-C	VR61,VR62,VR63,VR64,VR65,VR66,VR67,VR68
173	HK04370	PC board	P-AMX-220PU1-DIP	
174	CB00082	electrolytic capacitor	2200uF/25V ϕ 16*21mm	C57,C58,C81,C82
175	CB00052	electrolytic capacitor	100uF/100V ϕ 13*21mm	C61

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No.	Part No.	Description	Specification	Remark
176	SB00043	transistor	TIP122(ST)	TR3
177	SD00077	integrated circuit	L7815CV(TO-220)(ST)	TR1
178	SD00079	integrated circuit	L7915CV(TO-220)(ST)	TR2
179	SD00007	integrated circuit	BA15218N (M5218L substitute)	U5,U6
180	HI00236	push-button switch	2-stage 6P PS-9226A(SELF-LOCK)	SW1,SW2,SW3,SW4
181	HI00237	push-button switch	2stage 12P PS-13422R(SELF-LOCK)	SW5
182	HC00183	DC power jack	KJ-36-S ϕ 3.5	CN6
183	HC00403	RCA jack	SCP6873NS3232T2 4P	X3
184	HC00125	MIC jack	JY-6351G-02-250	X4,X5,X6,X7,X8,X9,X10,X11,X12,X13,X14,X15, X16,X17,X18,X19,X20,X21,X22,X23,X24
185	HC00392	XLR MIC jack	JY-5030-030G 180°	X1,X2
186	HC00065	row-wire header(male)	2P 2.5mm 90°	SW9
187	HA03124	wire	8P/8P-8P 120/200mm UL1007 28AWG	CN4
188	HA03128	wire	12P(male)-12P(female) 60mm UL1007 28AWG	CN1,CN2,CN3
189	HA03129	wire	12P(male)-12P(female) 280mm UL1007 28AW	CN5
190	MG00166	screw	M3*10	TR1,TR2,TR3
191	NC00005	silicone insulator	TO-220 square type	TR1,TR2,TR3
192	MF00037	washer	ϕ 3* ϕ 5*1t	TR1,TR2,TR3
193	ME00015	nut	3m/m	TR1,TR2,TR3
194	NI00863	insulate bean	TO220B	TR1,TR2,TR3
195	HK04371	PC board	P-AMX-220PU1-AI	
196	RA01258	fixed resistor 1/4W	10 Ω	R89
197	RA01115	fixed resistor 1/4W	20K Ω	R90
198	CB00253	electrolytic capacitor	1000uF/16V ϕ 10*16mm 5mm	C62
199	CB00256	electrolytic capacitor	1000uF/25V ϕ 10*20mm 5mm	C59,C60
200	CB00194	electrolytic capacitor	47uF/25V ϕ 5*11mm	C43,C44,C45,C46,C47,C48,C49,C50,C51,C 52,C65,C66,C67,C68,C69,C70,C71,C72
201	CB00254	electrolytic capacitor	47uF/100V ϕ 10*12mm 5mm	C53,C54,C55,C56
202	SA00094	rectifier diode	1N4002/100V	D1,D2,D3,D4
203	SA00127	zener diode	1/2W 47V 1N5261	ZD1
204	HK04372	PC board	P-AMX-220PU1-SMD	
205	HB01288	PCB	AMX-220PU1_VER040828	
206	RD00059	SMD fixed resistor 1/10W	0.0 Ω \pm 5% 0603	R91
207	RD00065	SMD fixed resistor 1/10W	47 Ω \pm 5% 0603	R79,R80
208	RD00069	SMD fixed resistor 1/10W	120 Ω \pm 5% 0603	R43,R44,R45,R46,R47,R48,R49,R50,R51,R52,R5 3,R54,R55,R56,R57,R58,R59,R60,R61,R62,R63,R 64,R65,R66,R67,R68,R69,R70
209	RD00083	SMD fixed resistor 1/10W	1.0K Ω \pm 5% 0603	R81,R82
210	RD00087	SMD fixed resistor 1/10W	2.0K Ω \pm 5% 0603	R35,R36,R37,R38,R39,R40,R41,R42

AMX-220 Parts List

No.	Part No.	Description	Specification	Remark
211	RD00094	SMD fixed resistor 1/10W	5.1KΩ ±5% 0603	R83,R84,R85,R86
212	RD00097	SMD fixed resistor 1/10W	6.8KΩ ±5% 0603	R160,R161
213	RD00101	SMD fixed resistor 1/10W	10KΩ ±5% 0603	R1,R2,R3,R4,R5,R6,R7,R8,R9,R10,R11,R12,R13,R14,R15, R16,R17,R18,R19,R20,R21,R22,R23,R24,R25,R26,R27,R28, R29,R30,R31,R32,R33,R34,R88,R100,R101,R102,R103
214	RD00102	SMD fixed resistor 1/10W	12KΩ ±5% 0603	R159,R162
215	RD00306	SMD fixed resistor 1/10W	20KΩ ±5% 0603	R71,R72,R73,R74,R75,R76,R77,R78
216	RD00345	SMD fixed resistor 1/10W	390KΩ ±5% 0603	R87
217	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13, C14,C15,C16,C63,C64,C78,C79,C77,C80
218	CI00059	SMD ceramic capacitor 0603	100PF/50V NPO ±5%	C17,C18,C19,C20,C21,C22,C23,C24,C25,C26,C27, C28,C29,C30,C31,C32,C234,C235,C236,C237
219	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C33,C34,C35,C36,C37,C38,C39,C40,C41,C42, C73,C74,C75,C76
220	SE00011	SMD rectifier diode	RLS4148 0.5A (LL-34)	D5,D6
221	SG00122	SMD integrated circuit	NJM4580M-TE3	U1,U2,U3,U4,U8,U9
222	MJ00312	heat sink	AMX-220_V1.0	
223	MJ00055	AL board	2*2000*1000 10.88kg	
224	HK04373	PC board	P-AMX-220PU2-DIP	
225	HI00236	push-button switch	2-stage 6P PS-9226A(SELF-LOCK)	SW1,SW2,SW3,SW4,SW5,SW6,SW7,SW8
226	RC00356	potentiometer	Z10KΩ RD09F1130042-10KZ(SAS1);30F	VR1,VR2,VR3,VR4,VR5,VR6,VR7,VR8
227	HC00125	MIC jack	JY-6351G-02-250	X9,X10,X11,X12,X13,X14,X15,X16,X17,X18, X19,X20,X21,X22,X23,X24
228	HC00126	XLR MIC jack	JY-5042-030G female plug 180°	X1,X2,X3,X4,X5,X6,X7,X8
229	HC00259	row-wire header(male)	8P 2.0mm 180°	CN2
230	HA03128	wire	12P(male)-12P(female) 60mm UL1007 28AWG	CN1
231	HK04374	PC board	P-AMX-220PU2-AI	
232	RA01262	precise resistor 1/4W	6.81KΩ	R65,R66,R67,R68,R69,R70,R71,R72,R73,R74, R75,R76,R77,R78,R79,R80
233	CB00238	electrolytic capacitor	0.22uF/50V φ 5*11mm	C137,C138,C139,C140,C141,C142,C143,C144,C145, C146,C147,C148,C149,C150,C151,C152,C153, C154,C155,C156,C157,C158,C159,C160
234	CB00255	electrolytic capacitor	1000uF/10V φ 8*11mm 5mm	C129,C130,C131,C132,C133,C134,C135,C136
235	CB00242	electrolytic capacitor	22uF/35V φ 5*11mm	C97,C98,C99,C100,C101,C102,C103,C104,C105, C106,C107,C108,C109,C110,C111,C112
236	CB00194	electrolytic capacitor	47uF/25V φ 5*11mm	C161,C162,C163,C164,C165,C166,C167,C168,C169, C170,C171,C172,C173,C174,C175,C176,C177, C178,C179,C180,C181,C182,C183,C184
237	SA00093	rectifier diode	1N4148 0.5A	D1
238	HK04375	PC board	P-AMX-220PU2-SMD	
239	HB01289	PCB	AMX-220PU2_VER040828	
240	RD00355	SMD fixed resistor 1/10W	4.7Ω ±5% 0603	R1,R2,R3,R4,R5,R6,R7,R8,R9,R10,R11,R12, R13,R14,R15,R16
241	RD00265	SMD fixed resistor 1/10W	27Ω ±5% 0603	R81,R82,R83,R84,R85,R86,R87,R88
242	RD00351	SMD fixed resistor 1/10W	1.3KΩ ±5% 0603	R137,R138,R139,R140,R141,R142,R143,R144
243	RD00306	SMD fixed resistor 1/10W	20KΩ ±5% 0603	R153,R154,R155,R156,R157,R158,R159,R160,R161, R169,R170,R171,R172,R173,R174,R175,R176
244	RD00113	SMD fixed resistor 1/10W	62KΩ ±5% 0603	R145,R146,R147,R148,R149,R150,R151,R152
245	RD00406	SMD precise resistor 1/10W	3.60KΩ ±1% 0603	R49,R50,R51,R52,R53,R54,R55,R56,R57,R58, R59,R60,R61,R62,R63,R64

AMX-220 Parts List

No.	Part No.	Description	Specification	Remark
246	RD00210	SMD precise resistor 1/10W	5.11KΩ ±1% 0603	R105,R106,R107,R108,R109,R110,R111,R112,R113,R114, R115,R116,R117,R118,R119,R120,R121,R122,R123,R124, R125,R126,R127,R128,R129,R130,R131,R132,R133,R134, R135,R136
247	RD00097	SMD fixed resistor 1/10W	6.8KΩ ±5% 0603	R161,R162,R163,R164,R165,R166,R167,R168
248	RD00214	SMD precise resistor 1/10W	10.0KΩ ±1% 0603	R89,R90,R91,R92,R93,R94,R95,R96,R97,R98, R99,R100,R101,R102,R103,R104
249	RD00334	SMD precise resistor 1/10W	11.0KΩ ±1% 0603	R33,R34,R35,R36,R37,R38,R39,R40,R41,R42, R43,R44,R45,R46,R47,R48
250	RD00371	SMD precise resistor 1/10W	51.1KΩ ±1% 0603	R17,R18,R19,R20,R21,R22,R23,R24,R25,R26, R27,R28,R29,R30,R31,R32
251	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C33,C34,C35,C36,C37,C38,C39,C40,C41,C42,C43, C44,C45,C46,C47,C48,C49,C50,C51,C52,C53,C54, C55,C56,C57,C58,C59,C60,C61,C62,C63,C64
252	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%	C65,C66,C67,C68,C69,C70,C71,C72,C73,C74,C75, C76,C77,C78,C79,C80,C81,C82,C83,C84,C85,C86, C87,C88,C89,C90,C91,C92,C93,C94,C95,C96
253	CI00055	SMD ceramic capacitor 0603	47PF/50V NPO ±5%	C25,C26,C27,C28,C29,C30,C31,C32
254	CI00063	SMD ceramic capacitor 0603	470PF/50V NPO ±5%	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14, C15,C16,C17,C18,C19,C20,C21,C22,C23,C24
255	SG00122	SMD integrated circuit	NJM4580M-TE3	U1,U2,U3,U4,U5,U6,U7,U8,U9,U10,U11,U12,U13, U14,U15,U16
256	CB00249	electrolytic capacitor	47uF/50V φ 6.3*11mm 2.5mm	C113,C114,C115,C116,C117,C118,C119,C120,C121, C122,C123,C124,C125,C126,C127,C128
257	NE02717	label	MADE IN CHINA	
258	NH00038	paper	0.115*1M	
259	NI00028	membrane	0.110*1M	
260	AD00012	twin adhesive	90*120mm_V1.0	
261	NA00279	clip-chain bag	0.04t*100*150mm_V1.0	
262	NB03168	cushion	AMX-220 left_V1.0	
263	NB03167	cushion	AMX-220 right_V1.0	
264	NF01910	instruction	AMX-220/220FX ALTO_V1.1	
265	NH00149	paper	889*640mm	
266	ND00233	non woven	0.35t*402*79mm	
267	NA00127	PE bag	0.1t*610*200mm	
268	MI02097	fixed bracket	AMX-220 left_V1.0	
269	MI02096	fixed bracket	AMX-220 left_V1.0	
270	MJ00088	iron board	1.5*2135*1220 30.67kg	
271	MI02099	fixed bracket	AMX-220 right_V1.0	
272	MI02098	fixed bracket	AMX-220 right_V1.0	
273	MJ00088	iron board	1.5*2135*1220 30.67kg	
274	NI02911	handle	ALTO 072C	

AMX-220FX Parts List

No.	Part No.	Description	Specification	Remark
1	MA04750	panel	AMX-220FX ALTO_V1.1	
2	MA04748	panel	AMX-220FX	
3	MA04749	panel	AMX-220FX 1.0t*439.5*402*42mm_V1.1	
4	ME00113	iron pillar	M3*13.8*0.5PH_V1.1	
5	MJ00061	Zn-plated board	1*2135*1220 20.45kg	
6	MB03216	rear board	AMX-220	
7	MB03217	bottom board	AMX-220 1.2t*442*402*43mm	
8	MJ00063	Zn-plated board	1.2*2135*1220 24.54kg	
9	HI00026	power switch	RA12KKATOF 2P	
10	HI00171	power switch	R612KKATOF1	
11	NI01863	key	φ 5.5*W10*7.5	
12	NI01862	key	5.5*5.5*14.5	
13	NI02377	knob	φ 5.5*7.5mm(inner 3.3*3.3mm)	
14	NI02083	knob	φ 10.5*18mm	
15	NI02633	knob	φ 10.5*18	
16	NI02082	knob	φ 10.5*18mm	
17	NI02817	knob	φ 10.5*18mm	
18	NI02081	knob	φ 10.5*18mm	
19	NI02714	knob	φ 10*13.5mm	
20	NI02309	knob	24*11.5*11	
21	NI02352	knob	24*11.5*11	
22	NI02353	knob	24*11.5*11	
23	MG00041	screw	M3*6	
24	MG00061	screw	M3*10	
25	MG00243	copper pillar	M3*5*0.5PH	
26	MG00036	screw	M3*4	
27	ME00060	nut	JY-6351G-02-250	
28	MF00061	washer	JY-6351G-02-250	
29	TG00123	adapter	120V/60Hz_AC18V/2000mA_EI-57_UL CSA	
30	NI00252	sleeve	φ 4*20mm	
31	NI00248	sleeve	φ 4*1000mm	
32	NI00498	foot cushion	12.7*7*6mm(SF-005)	
33	NA00136	PE bag	0.05t*820*540mm	
34	HJ00006	desiccant	30g	
35	NE05004	label	ALTO	

AMX-220FX Parts List

No.	Part No.	Description	Specification	Remark
36	NH00334	cone paper	0.040*1m	
37	NE13199	label	AMX-220FX_V1.0	
38	NH00012	bond paper	0.04*1M	
39	NI00014	membrane	0.035*1M	
40	NI01947	handle	AMX-220;220FX_V1.0	
41	NI02960	handle	442*33*26mm AMX-220 black	
42	NI00218	cable tie-black	ALT-102SB	
43	HA01388	row-wire connector wiring	2P 100	
44	HA01442	row-wire connector wiring	2P 200	
45	HA01746	PVC wire black UL1015 1.8ΔW/C	300 black	
46	NF00061	assurance card	ALTO	
47	NB03030	box	AMX-220FX ALTO_V1.0	
48	NB03029	paper outer case 6 hole	AMX-220/220FX ALTO_V1.0	
49	HK04378	PC board	P-AMX-220FXMN1-DIP	
50	SA00052	L.E.D high intensity	3m/m round(green)long foot 26	LD16,LD17,LD18,LD19,LD20,LD21,LD22,LD23,LD24,LD25,LD26,LD27,LD28,LD29,LD30,LD31,LD32,LD33,LD34,LD35,LD36
51	SA00053	L.E.D high intensity	3m/m round(red)long foot 26mm	LD1,LD2,LD3,LD4,LD5,LD6,LD7,LD8,LD37,LD38,LD39,LD40,LD54
52	SA00054	L.E.D high intensity	3m/m round(yellow)long foot 26	LD9,LD10,LD11,LD12,LD13,LD14,LD15
53	NI01782	LED spacer support	LEDS-11 11mm	
54	RC00359	potentiometer	W50KΩ RD09F113A224-50K4BT(SAS1);30F-C	VR4,VR5,VR89,VR90,VR91,VR92,VR93,VR94,VR95,VR96
55	RC00360	potentiometer	B50KΩ RD12L12CA23A-50K3BT*2(SAS1);30F-C	VR33,VR34,VR35,VR36,VR37,VR38,VR39,VR40,VR41,VR42,VR43,VR45,VR46,VR47,VR48,VR52
56	RC00361	potentiometer	W50KΩ RD12L12CA60B-50K4BT*2(SAS1);30F-C	VR3,VR6,VR7,VR97
57	HC00261	row-wire header(male)	12P 2.0mm 180°	CN1,CN3,CN5,CN7
58	HC00505	row-wire header(male)	16P 2.0mm 180°	CN4
59	RC00285	potentiometer	D10KΩ RF60112P600G-10KD*2(SAS1)	VR49,VR50,VR51,VR56,VR64
60	RC00284	potentiometer	D10KΩ RF6011YP600F-10KD(SAS1)	VR1,VR2
61	HI00236	push-button switch	2-stage 6P PS-9226A(SELF-LOCK)	SW1,SW2,SW3,SW4,SW5,SW6,SW8,SW9,SW10,SW11
62	HI00237	push-button switch	2stage 12P PS-13422R(SELF-LOCK)	SW12,SW13,SW14,SW15,SW16,SW17,SW18,SW19,SW20
63	HI00161	relay	RY-5W-K,5V	RL1
64	HC00473	row pin header(double)	2.45mm 180° 2*8P B25-2*8BG1(B)H=5mm	CN6
65	HI00195	rotary encode	SDB161PVB15.5F-1-4-16-16PC	EN1,EN2
66	HI00238	push-button switch	2 stage 6P PS-9226A(NON-LOCK)	SW7
67	HK04379	PC board	P-AMX-220FXMN1-AI	
68	RA01260	fixed resistor 1/4W	120Ω	R317,R320,R346
69	CF00146	metal-film capacitor	0.001uF/63V 5% CASE01	C177,C178,C179,C180,C181,C182,C183,C184
70	CF00138	metal-film capacitor MSC	0.012uF/63V ±5% CASE01	C161,C162,C163,C164,C165,C166,C167,C168,C169,C170,C171,C172,C173,C174,C175,C176

AMX-220FX Parts List

No.	Part No.	Description	Specification	Remark
71	CF00148	metal-film capacitor	0.0033uF/100V 5% CASE01	C205,C206,C207,C208,C209,C210,C211,C212,C213,C214,C215,C216,C217,C218,C219,C220
72	CF00147	metal-film capacitor	0.047uF/100V 5% CASE01	C221,C222,C223,C224,C225,C226,C227,C228
73	CB00248	electrolytic capacitor	2.2uF/50V ϕ 4*5mm	C229,C230,C231,C232,C233
74	CB00190	electrolytic capacitor	4.7uF/25V ϕ 4*7mm	C342,C343,C344
75	CB00194	electrolytic capacitor	47uF/25V ϕ 5*11mm	C34,C35,C36,C37,C41,C42,C43,C44,C45,C46,C47,C48,C49,C50,C51,C56,C57,C63,C64,C65,C66,C67,C68,C69,C70,C71,C72,C73,C74,C75,C76,C77,C78,C79,C80,C81,C82,C83,C84,C85,C86,C87,C88,C89,C90,C91,C92,C93,C94,C97,C98,C99,C100,C101,C102,C243,C244
76	HK04380	PC board	P-AMX-220FXMN1-SMD	
77	HB01286	PCB	AMX-220MN1_VER040828	
78	RD00059	SMD fixed resistor 1/10W	0.0 Ω \pm 5% 0603	R325,R326
79	RD00065	SMD fixed resistor 1/10W	47 Ω \pm 5% 0603	R343,R344
80	RD00069	SMD fixed resistor 1/10W	120 Ω \pm 5% 0603	R176,R177
81	RD00073	SMD fixed resistor 1/10W	220 Ω \pm 5% 0603	R429,R430
82	RD00347	SMD fixed resistor 1/10W	510 Ω \pm 5% 0603	R321,R322,R345
83	RD00085	SMD fixed resistor 1/10W	1.5K Ω \pm 5% 0603	R295,R296,R297,R298
84	RD00086	SMD fixed resistor 1/10W	1.8K Ω \pm 5% 0603	R180,R181,R182,R183,R184,R185,R186,R187,R188,R189,R190,R191,R192,R193,R194,R195,R196,R197,R198,R199,R200,R201,R202,R203,R204,R205,R206,R207,R208,R209,R210,R211
85	RD00087	SMD fixed resistor 1/10W	2.0K Ω \pm 5% 0603	R342
86	RD00088	SMD fixed resistor 1/10W	2.2K Ω \pm 5% 0603	R291,R292,R293,R294
87	RD00093	SMD fixed resistor 1/10W	4.7K Ω \pm 5% 0603	R66,R71,R75,R76,R77
88	RD00094	SMD fixed resistor 1/10W	5.1K Ω \pm 5% 0603	R5,R6,R7,R8,R9,R10,R11,R12,R13,R17,R18,R23,R24,R25,R26,R27,R28,R29,R30,R34,R35,R36,R37,R38,R41,R42,R43,R46,R331,R333,R341,R348,R350,R353,R354,R355,R356,R335,R337,R339
89	RD00095	SMD fixed resistor 1/10W	5.6K Ω \pm 5% 0603	R330,R332,R334,R336,R338,R340,R347,R349
90	RD00096	SMD fixed resistor 1/10W	6.2K Ω \pm 5% 0603	R137
91	RD00097	SMD fixed resistor 1/10W	6.8K Ω \pm 5% 0603	R241,R242,R243,R244,R245,R246,R247,R248,R249,R250,R251,R252,R253,R254,R255,R256,R257,R258,R259,R260
92	RD00099	SMD fixed resistor 1/10W	8.2K Ω \pm 5% 0603	R2,R3,R49,R50
93	RD00101	SMD fixed resistor 1/10W	10K Ω \pm 5% 0603	R86,R87,R88,R89,R99,R90,R91,R92,R93,R94,R95,R96,R97,R98,R104,R105,R106,R107,R108,R109,R110,R111,R112,R113,R114,R115,R116,R117,R118,R119,R120,R121,R122,R123,R124,R125,R126,R127,R128,R129,R130,R131,R132,R133,R134,R178,R179,R328,R329,R431,R432,R433,R434,R435,R436
94	RD00102	SMD fixed resistor 1/10W	12K Ω \pm 5% 0603	R47,R48,R156,R157,R158,R163,R164,R165,R166,R167,R168,R169
95	RD00103	SMD fixed resistor 1/10W	15K Ω \pm 5% 0603	R82,R83,R313,R314,R136,R135
96	RD00104	SMD fixed resistor 1/10W	18K Ω \pm 5% 0603	R1,R4,R44,R45,R51,R52,R53,R57
97	RD00306	SMD fixed resistor 1/10W	20K Ω \pm 5% 0603	R14,R15,R16,R31,R32,R33,R39,R40,R138,R139,R140,R141,R142,R143,R144,R145,R146,R147,R148,R149,R150,R151,R152,R154
98	RD00105	SMD fixed resistor 1/10W	22K Ω \pm 5% 0603	R63,R64,R65,R70,R221,R222,R223,R224,R227,R228,R229,R230,R231,R232,R351,R352,R19,R20,R21,R22,R153,R155,R311,R312,R315,R316
99	RD00106	SMD fixed resistor 1/10W	27K Ω \pm 5% 0603	R299,R300,R301,R302,R303,R304,R305,R306
100	RD00353	SMD fixed resistor 1/10W	36K Ω \pm 5% 0603	R318,R319
101	RD00110	SMD fixed resistor 1/10W	43K Ω \pm 5% 0603	R54,R55,R56,R58,R59,R60,R61,R62
102	RD00111	SMD fixed resistor 1/10W	47K Ω \pm 5% 0603	R277,R278,R279,R280,R281,R282,R283,R284,R285,R286,R287,R288,R289,R290,R80,R81
103	RD00112	SMD fixed resistor 1/10W	56K Ω \pm 5% 0603	R307,R308,R309,R310
104	RD00116	SMD fixed resistor 1/10W	100K Ω \pm 5% 0603	R170,R171,R172,R173,R174,R175,R323,R324
105	RD00263	SMD fixed resistor 1/10W	200K Ω \pm 5% 0603	R233,R234,R235,R236,R237,R238,R239,R240

AMX-220FX Parts List

No.	Part No.	Description	Specification	Remark
106	RD00119	SMD fixed resistor 1/10W	220K Ω \pm 5% 0603	R212,R213,R214,R215,R216,R217,R218, R219,R220
107	RD00125	SMD fixed resistor 1/10W	1.0M Ω \pm 5% 0603	R261,R262,R263,R264,R265,R266,R267,R268,R2 69,R270,R271,R272,R273,R274,R275,R276
108	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C103,C104,C105,C106,C107,C108,C109,C110,C111,C112,C113,C114,C115,C1 16,C117,C122,C123,C124,C125,C126,C127,C128,C129,C130,C131,C132,C13 3,C134,C135,C136,C137,C138,C139,C140,C141,C142,C143,C144,C145,C146, C147,C148,C149,C150,C151,C152,C153,C154,C155,C156,C157,C158,C159,C 160,C238,C335,C248,C249,C250,C251
109	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO \pm 5%	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,C17,C 18,C23,C24,C25,C26,C27,C28,C29,C30,C31,C32,C33,C35,C36,C185, C186,C187,C188,C189,C190,C191,C192,C193,C194,C195,C196,C197, C198,C199,C200,C201,C202,C203,C204,C245,C246,C247
110	CI00055	SMD ceramic capacitor 0603	47PF/50V NPO \pm 5%	C239,C240
111	CI00059	SMD ceramic capacitor 0603	100PF/50V NPO \pm 5%	C241,C242
112	SE00011	SMD rectifier diode	RLS4148 0.5A (LL-34)	D3,D4,D5,D6,D7,D8,D13
113	SE00028	diode	BAS316,115	D1,D2,D9,D10,D11,D12
114	SF00039	SMD field effect transistor	MMBFJ112(SOT-23)/(FAIRCHILD)	TR11,TR12,TR13,TR14,TR15
115	SF00056	transistor	MMBT3904(SOT-23)/(PHI)	TR1,TR2,TR3,TR4,TR5,TR6,TR7,TR8
116	SF00053	transistor	MMBT3906(SOT-23)/(PHI)	TR9,TR10,TR16
117	SG00122	SMD integrated circuit	NJM4580M-TE3	U1,U2,U3,U4,U5,U6,U7,U10,U11,U12,U13,U14,U1 5,U16,U17,U24,U25,U26,U27,U28,U29,U30,U31,U 32,U33,U34,U35,U8,U9
118	RE00011	resistor	680 Ω *4 \pm 5% 8P 0603	AR1,AR2
119	RD00089	SMD fixed resistor 1/10W	2.7K Ω \pm 5% 0603	R67,R69,R73,R74,R78,R79,R68,R72
120	RD00303	SMD precise resistor 1/10W	57.6K Ω \pm 1% 0603	R85,R84
121	HK04376	PC board	P-12VMETER-DIP(AMX-220)	CN8,CN9
122	HC00698	row pin (single)#5100	2.0 90° 17P(gold-plated)2.5/9.5mm 2mm	CN6
123	HK04377	PC board	P-12VMETER-SMD(AMX-220)	
124	HB01285	PCB	12VMETER(2*5)_VER040611	
125	RD00304	SMD fixed resistor 1/10W	33 Ω \pm 5% 0603	R1
126	RD00069	SMD fixed resistor 1/10W	120 Ω \pm 5% 0603	R2
127	RD00076	SMD fixed resistor 1/10W	330 Ω \pm 5% 0603	R4,R6
128	RD00078	SMD fixed resistor 1/10W	470 Ω \pm 5% 0603	R3,R5,R7
129	RD00347	SMD fixed resistor 1/10W	510 Ω \pm 5% 0603	R8
130	RD00348	SMD fixed resistor 1/10W	620 Ω \pm 5% 0603	R9
131	RD00351	SMD fixed resistor 1/10W	1.3K Ω \pm 5% 0603	R10
132	RD00087	SMD fixed resistor 1/10W	2.0K Ω \pm 5% 0603	R11
133	RD00101	SMD fixed resistor 1/10W	10K Ω \pm 5% 0603	R12
134	RD00115	SMD fixed resistor 1/10W	82K Ω \pm 5% 0603	R13
135	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C1,C2
136	SG00210	SMD integrated circuit	LM339DT/(ST)	U1,U2,U3
137	HK00832	PC board	P-FX-DSP-DIP	CN2
138	HC00697	row pin (single)#5100	2.0 90° 16P(gold-plated)2.5/9.5mm 2mm	CN1
139	HK00833	PC board	P-FX-DSP-SMD	
140	HB01109	PCB	FX-DSP(1*10)_VER031014	

AMX-220FX Parts List

No.	Part No.	Description	Specification	Remark
141	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%	C329,C330,C331,C332
142	CI00053	SMD ceramic capacitor 0603	33PF/50V NPO ±5%	C348,C349
143	CI00129	SMD ceramic capacitor 0603	0.0015uF/-50V X7R ±10%	C345,C346,C347
144	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C333,C334,C336,C337,C338,C339,C340,C341
145	CL00002	SMD tantalum capacitor	1.0uF/16V case A	C352,C353
146	CL00006	SMD tantalum capacitor	10uF/16V case B2	C350,C351
147	RD00068	SMD fixed resistor 1/10W	100Ω ±5% 0603	R420,R421
148	RD00073	SMD fixed resistor 1/10W	220Ω ±5% 0603	R426
149	RD00083	SMD fixed resistor 1/10W	1.0KΩ ±5% 0603	R418
150	RD00088	SMD fixed resistor 1/10W	2.2KΩ ±5% 0603	R424
151	RD00091	SMD fixed resistor 1/10W	3.3KΩ ±5% 0603	R422,R423
152	RD00093	SMD fixed resistor 1/10W	4.7KΩ ±5% 0603	R416
153	RD00098	SMD fixed resistor 1/10W	7.5KΩ ±5% 0603	R419
154	RD00101	SMD fixed resistor 1/10W	10KΩ ±5% 0603	R397,R398,R399,R400,R401,R402,R403,R404,R405, R406,R407,R408,R409,R410,R411,R412,R413,R414
155	RD00111	SMD fixed resistor 1/10W	47KΩ ±5% 0603	R415
156	RD00124	SMD fixed resistor 1/10W	820KΩ ±5% 0603	R431
157	RD00125	SMD fixed resistor 1/10W	1.0MΩ ±5% 0603	R417
158	RD00126	SMD fixed resistor 1/10W	2.2MΩ ±5% 0603	R425
159	SG00122	SMD integrated circuit	NJM4580M-TE3	U44,U45,U46
160	SG00094	SMD integrated circuit	NE555DT/(ST)	U43
161	SG00005	SMD integrated circuit	BA10393F/(FOHM)	U47
162	SG00068	SMD integrated circuit	74HC14DT	U49
163	SG00164	SMD integrated circuit	74HC109D	U48
164	SE00028	diode	BAS316,115	D7,D15
165	SE00009	SMD rectifier diode	DAN202K/T-146	D16
166	SE00007	SMD rectifier diode	RB400D(D3A)	D10
167	SF00010	SMD transistor	2SC2412K(SOT-23)/(R)	TR16,TR17
168	RC00465	potentiometer	B5KΩ RD09F113A225-5K2BT(SAS1);30F-C	VR69,VR70,VR71,VR72
169	HK04367	PC board	P-AMX-220MN2-DIP	
170	SA00053	L.E.D high intensity	3m/m round(red)long foot 26mm	LD9,LD10,LD11,LD12,LD13,LD14,LD15,LD16,LD17, LD18,LD19,LD20,LD21,LD22,LD23,LD24
171	SA00054	L.E.D high intensity	3m/m round(yellow)long foot 26	LD1,LD2,LD3,LD4,LD5,LD6,LD7,LD8
172	NI01782	LED spacer support	LEDS-11 11mm	
173	RC00358	potentiometer	B50KΩ -RD09F113A223-50K2BT(SAS1);30F-C	VR9,VR10,VR11,VR12,VR13,VR14,VR15,VR16,VR17, VR18,VR19,VR20,VR21,VR22,VR23,VR24,VR25, VR26,VR27,VR28,VR29,VR30,VR31,VR32
174	RC00359	potentiometer	W50KΩ RD09F113A224-50K4BT(SAS1);30F-C	VR73,VR74,VR75,VR76,VR77,VR78,VR79,VR80, VR81,VR82,VR83,VR84,VR85,VR86,VR87,VR88
175	RC00284	potentiometer	D10KΩ RF6011YP600F-10KD(SAS1)	VR53,VR54,VR55,VR56,VR57,VR58,VR59,VR60

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No.	Part No.	Description	Specification	Remark
176	HC00259	row-wire header(male)	8P 2.0mm 180°	CN3,CN6
177	HC00261	row-wire header(male)	12P 2.0mm 180°	CN1
178	HA03123	wire	16P-16P 230mm UL1007 28AWG	CN2
179	HI00236	push-button switch	2-stage 6P PS-9226A(SELF-LOCK)	SW1,SW4,SW7,SW10,SW32,SW35,SW38,SW41
180	HI00237	push-button switch	2stage 12P PS-13422R(SELF-LOCK)	SW2,SW3,SW5,SW6,SW8,SW9,SW11,SW12,SW33,SW34,SW36,SW37,SW39,SW40,SW42,SW43
181	RC00366	potentiometer	C500K Ω RD12L123A43D-500K15C*2(SAS1)30F-C	VR1,VR2,VR3,VR4,VR5,VR6,VR7,VR8
182	HK04368	PC board	P-AMX-220MN2-AI	
183	RA01260	fixed resistor 1/4W	120 Ω	R57
184	CB00248	electrolytic capacitor	2.2uF/50V φ 4*5mm	C249,C250,C251,C252,C253,C254,C255,C256
185	CB00194	electrolytic capacitor	47uF/25V φ 5*11mm	C201,C202,C203,C204,C205,C206,C207,C208,C209,C210,C211,C212,C213,C214,C215,C216,C217,C218,C219,C220,C221,C222,C223,C224
186	CF00143	metal-film capacitor MSC	0.0015uF/100V 5% CASE01	C57,C58,C59,C60,C61,C62,C63,C64
187	CF00137	metal-film capacitor MSC	0.033uF/63V 5% CASE01	C65,C66,C67,C68,C69,C70,C71,C72,C73,C74,C75,C76,C77,C78,C79,C80
188	CF00141	metal-film capacitor MSC	0.0068uF/100V 5% CASE01	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,C17,C18,C19,C20,C21,C22,C23,C24
189	HK04369	PC board	P-AMX-220MN2-SMD	
190	HB01287	PCB	AMX-220MN2_VER040828	
191	RD00347	SMD fixed resistor 1/10W	510 Ω ±5% 0603	R58
192	RD00085	SMD fixed resistor 1/10W	1.5K Ω ±5% 0603	R317,R318,R319,R320,R321,R322,R323,R324
193	RD00088	SMD fixed resistor 1/10W	2.2K Ω ±5% 0603	R181,R182,R183,R184,R185,R186,R187,R188,R249,R250,R251,R252,R253,R254,R255,R256,R267,R261,R262,R263,R264,R265,R266,R268
194	RD00090	SMD fixed resistor 1/10W	3.0K Ω ±5% 0603	R1,R2,R3,R4,R5,R6,R7,R8
195	RD00092	SMD fixed resistor 1/10W	3.9K Ω ±5% 0603	R85,R86,R87,R88,R89,R90,R91,R92
196	RD00093	SMD fixed resistor 1/10W	4.7K Ω ±5% 0603	R245,R246,R247,R248,R258,R259,R260,R257
197	RD00094	SMD fixed resistor 1/10W	5.1K Ω ±5% 0603	R60,R62,R64,R66,R68,R70,R72,R74,R93,R94,R95,R96,R97,R98,R99,R100,R103,R104,R107,R108,R111,R112,R115,R116,R117,R118,R119,R120,R121,R122,R123,R124,R127,R128,R131,R132,R135,R136,R139,R140
198	RD00095	SMD fixed resistor 1/10W	5.6K Ω ±5% 0603	R59,R61,R63,R65,R67,R69,R71,R73,R165,R166,R167,R168,R169,R170,R171,R172,R173,R174,R175,R176,R177,R178,R179,R180
199	RD00096	SMD fixed resistor 1/10W	6.2K Ω ±5% 0603	R9,R10,R11,R12,R13,R14,R15,R16,R17,R18,R19,R20,R21,R22,R23,R24
200	RD00097	SMD fixed resistor 1/10W	6.8K Ω ±5% 0603	R217,R218,R219,R220,R221,R222,R223,R224
201	RD00101	SMD fixed resistor 1/10W	10K Ω ±5% 0603	R25,R26,R27,R28,R29,R30,R31,R32,R33,R34,R35,R36,R37,R38,R39,R40,R41,R42,R43,R44,R45,R46,R47,R48,R49,R50,R51,R52,R53,R54,R55,R56
202	RD00306	SMD fixed resistor 1/10W	20K Ω ±5% 0603	R101,R102,R105,R106,R109,R110,R113,R114,R125,R126,R129,R130,R133,R134,R137,R138
203	RD00106	SMD fixed resistor 1/10W	27K Ω ±5% 0603	R329,R330,R331,R332,R333,R334,R335,R336,R337,R338,R339,R340,R341,R342,R343,R344
204	RD00111	SMD fixed resistor 1/10W	47K Ω ±5% 0603	R281,R282,R283,R284,R285,R286,R287,R288
205	RD00114	SMD fixed resistor 1/10W	68K Ω ±5% 0603	R301,R302,R303,R304,R305,R306,R307,R308
206	RD00125	SMD fixed resistor 1/10W	1.0M Ω ±5% 0603	R193,R194,R195,R196,R197,R198,R199,R200
207	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C81,C82,C83,C84,C85,C86,C87,C88,C89,C90,C91,C92,C93,C94,C95,C96,C97,C98,C99,C100,C101,C102,C103,C104,C105,C106,C107,C108,C109,C110,C111,C112
208	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%	C25,C26,C27,C28,C29,C30,C31,C32,C33,C34,C35,C36,C37,C38,C39,C40,C137,C138,C139,C140,C141,C142,C143,C144
209	SE00028	diode	BAS316,115	D1,D2,D3,D4,D5,D6,D7,D8
210	SF00056	transistor	MMBT3904(SOT-23)/(PHI)	TR1,TR2,TR3,TR4,TR5,TR6,TR7,TR8,TR9,TR10,TR11,TR12,TR13,TR14,TR15,TR16

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No.	Part No.	Description	Specification	Remark
211	SF00053	transistor	MMBT3906(SOT-23)/(PHI)	TR17
212	SG00122	SMD integrated circuit	NJM4580M-TE3	U1,U2,U3,U4,U5,U6,U7,U8,U9,U10,U11,U12 .U13,U14,U15,U16
213	RC00465	potentiometer	B5K Ω RD09F113A225- 5K Ω (CAG4) 205 Ω	VR61,VR62,VR63,VR64,VR65,VR66,VR67,VR68
214	HK04366	PC board	P-AMX-220FXPU1-DIP	
215	CB00082	electrolytic capacitor	2200uF/25V ϕ 16*21mm	C57,C58,C81,C82
216	CB00052	electrolytic capacitor	100uF/100V ϕ 13*21mm	C61
217	SD00074	integrated circuit	L7805CV(TO-220)(ST)	TR4
218	SB00043	transistor	TIP122(ST)	TR3
219	SD00077	integrated circuit	L7815CV(TO-220)(ST)	TR1
220	SD00079	integrated circuit	L7915CV(TO-220)(ST)	TR2
221	SD00007	integrated circuit	BA15218N (M5218L substitute)	U5,U6
222	HI00236	push-button switch	2-stage 6P PS-9226A(SELF- LOCK)	SW1,SW2,SW3,SW4
223	HI00237	push-button switch	2stage 12P PS-13422R(SELF- LOCK)	SW5
224	HC00183	DC power jack	KJ-36-S ϕ 3.5	CN6
225	HC00403	RCA jack	SCP6873NS3232T2 4P	X3
226	HC00125	MIC jack	JY-6351G-02-250	X4,X5,X6,X7,X8,X9,X10,X11,X12,X13,X14,X15,X16, X17,X18,X19,X20,X21,X22,X23,X24,X25
227	HC00392	XLR MIC jack	JY-5030-030G 180°	X1,X2
228	HC00065	row-wire header(male)	2P 2.5mm 90°	SW9
229	HA03124	wire	8P/8P-8P 120/200mm UL1007 28AWG	CN4
230	HA03128	wire	12P(male)-12P(female) 60mm 1007 28AWG	CN1,CN2,CN3
231	HA03129	wire	12P(male)-12P(female) 280mm 1007 28AWG	CN5
232	MG00166	screw	M3*10	TR1,TR2,TR3,TR4
233	NC00005	silicone insulator	TO-220 square type	TR1,TR2,TR3,TR4
234	MF00037	washer	ϕ 3* ϕ 5*1t	TR1,TR2,TR3,TR4
235	ME00015	nut	3m/m	TR1,TR2,TR3,TR4
236	NI00863	insulate bean	TO220B	TR1,TR2,TR3,TR4
237	HK04371	PC board	P-AMX-220PU1-AI	
238	RA01258	fixed resistor 1/4W	10 Ω	R89
239	RA01115	fixed resistor 1/4W	20K Ω	R90
240	CB00253	electrolytic capacitor	1000uF/16V ϕ 10*16mm 5mm	C62
241	CB00256	electrolytic capacitor	1000uF/25V ϕ 10*20mm 5mm	C59,C60
242	CB00194	electrolytic capacitor	47uF/25V ϕ 5*11mm	C43,C44,C45,C46,C47,C48,C49,C50,C51, C52,C65,C66,C67,C68,C69,C70,C71,C72
243	CB00254	electrolytic capacitor	47uF/100V ϕ 10*12mm 5mm	C53,C54,C55,C56
244	SA00094	rectifier diode	1N4002/100V	D1,D2,D3,D4
245	SA00127	zener diode	1/2W 47V 1N5261	ZD1

AMX-220FX Parts List

No.	Part No.	Description	Specification	Remark
246	HK04372	PC board	P-AMX-220PU1-SMD	
247	HB01288	PCB	AMX-220PU1_VER040828	
248	RD00059	SMD fixed resistor 1/10W	0.0Ω ±5% 0603	R91
249	RD00065	SMD fixed resistor 1/10W	47Ω ±5% 0603	R79,R80
250	RD00069	SMD fixed resistor 1/10W	120Ω ±5% 0603	R43,R44,R45,R46,R47,R48,R49,R50,R51,R52,R53,R54,R55,R56,R57,R58,R59,R60,R61,R62,R63,R64,R65,R66,R67,R68,R69,R70
251	RD00083	SMD fixed resistor 1/10W	1.0KΩ ±5% 0603	R81,R82
252	RD00087	SMD fixed resistor 1/10W	2.0KΩ ±5% 0603	R35,R36,R37,R38,R39,R40,R41,R42
253	RD00094	SMD fixed resistor 1/10W	5.1KΩ ±5% 0603	R83,R84,R85,R86
254	RD00097	SMD fixed resistor 1/10W	6.8KΩ ±5% 0603	R160,R161
255	RD00101	SMD fixed resistor 1/10W	10KΩ ±5% 0603	R1,R2,R3,R4,R5,R6,R7,R8,R9,R10,R11,R12,R13,R14,R15,R16,R17,R18,R19,R20,R21,R22,R23,R24,R25,R26,R27,R28,R29,R30,R31,R32,R33,R34,R88,R100,R101,R102,R103
256	RD00102	SMD fixed resistor 1/10W	12KΩ ±5% 0603	R159,R162
257	RD00306	SMD fixed resistor 1/10W	20KΩ ±5% 0603	R71,R72,R73,R74,R75,R76,R77,R78
258	RD00345	SMD fixed resistor 1/10W	390KΩ ±5% 0603	R87
259	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,C63,C64,C78,C79,C77,C80
260	CI00059	SMD ceramic capacitor 0603	100PF/50V NPO ±5%	C17,C18,C19,C20,C21,C22,C23,C24,C25,C26,C27,C28,C29,C30,C31,C32,C234,C235,C236,C237
261	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C33,C34,C35,C36,C37,C38,C39,C40,C41,C42,C73,C74,C75,C76
262	SE00011	SMD rectifier diode	RLS4148 0.5A (LL-34)	D5,D6
263	SG00122	SMD integrated circuit	NJM4580M-TE3	U1,U2,U3,U4,U8,U9
264	MJ00312	heat sink	AMX-220_V1.0	
265	MJ00055	AL board	2*2000*1000 10.88kg	
266	HK04373	PC board	P-AMX-220PU2-DIP	
267	HI00236	push-button switch	2-stage 6P PS-9226A(SELF-LOCK)	SW1,SW2,SW3,SW4,SW5,SW6,SW7,SW8
268	RC00356	potentiometer	Z10KΩ RD09F1130042-10KZ(SAS1);30F	VR1,VR2,VR3,VR4,VR5,VR6,VR7,VR8
269	HC00125	MIC jack	JY-6351G-02-250	X9,X10,X11,X12,X13,X14,X15,X16,X17,X18,X19,X20,X21,X22,X23,X24
270	HC00126	XLR MIC jack	JY-5042-030G female plug 180°	X1,X2,X3,X4,X5,X6,X7,X8
271	HC00259	row-wire header(male)	8P 2.0mm 180°	CN2
272	HA03128	wire	12P(male)-12P(female) 60mm UL1007 28AWG	CN1
273	HK04374	PC board	P-AMX-220PU2-AI	
274	RA01262	precise resistor 1/4W	6.81KΩ	R65,R66,R67,R68,R69,R70,R71,R72,R73,R74,R75,R76,R77,R78,R79,R80
275	CB00238	electrolytic capacitor	0.22uF/50V φ 5*11mm	C137,C138,C139,C140,C141,C142,C143,C144,C145,C146,C147,C148,C149,C150,C151,C152,C153,C154,C155,C156,C157,C158,C159,C160
276	CB00255	electrolytic capacitor	1000uF/10V φ 8*11mm 5mm	C129,C130,C131,C132,C133,C134,C135,C136
277	CB00242	electrolytic capacitor	22uF/35V φ 5*11mm	C97,C98,C99,C100,C101,C102,C103,C104,C105,C106,C107,C108,C109,C110,C111,C112
278	CB00194	electrolytic capacitor	47uF/25V φ 5*11mm	C161,C162,C163,C164,C165,C166,C167,C168,C169,C170,C171,C172,C173,C174,C175,C176,C177,C178,C179,C180,C181,C182,C183,C184
279	SA00093	rectifier diode	1N4148 0.5A	D1
280	HK04375	PC board	P-AMX-220PU2-SMD	

AMX-220FX Parts List

No.	Part No.	Description	Specification	Remark
281	HB01289	PCB	AMX-220PU2_VER040828	
282	RD00355	SMD fixed resistor 1/10W	4.7Ω ±5% 0603	R1,R2,R3,R4,R5,R6,R7,R8,R9,R10,R11,R12,R13,R14,R15,R16
283	RD00265	SMD fixed resistor 1/10W	27Ω ±5% 0603	R81,R82,R83,R84,R85,R86,R87,R88
284	RD00351	SMD fixed resistor 1/10W	1.3KΩ ±5% 0603	R137,R138,R139,R140,R141,R142,R143,R144
285	RD00306	SMD fixed resistor 1/10W	20KΩ ±5% 0603	R153,R154,R155,R156,R157,R158,R159,R160,R169,R170,R171,R172,R173,R174,R175,R176
286	RD00113	SMD fixed resistor 1/10W	62KΩ ±5% 0603	R145,R146,R147,R148,R149,R150,R151,R152
287	RD00406	SMD precise resistor 1/10W	3.60KΩ ±1% 0603	R49,R50,R51,R52,R53,R54,R55,R56,R57,R58,R59,R60,R61,R62,R63,R64
288	RD00210	SMD precise resistor 1/10W	5.11KΩ ±1% 0603	R105,R106,R107,R108,R109,R110,R111,R112,R113,R114,R115,R116,R117,R118,R119,R120,R121,R122,R123,R124,R125,R126,R127,R128,R129,R130,R131,R132,R133,R134,R135,R136
289	RD00097	SMD fixed resistor 1/10W	6.8KΩ ±5% 0603	R161,R162,R163,R164,R165,R166,R167,R168
290	RD00214	SMD precise resistor 1/10W	10.0KΩ ±1% 0603	R89,R90,R91,R92,R93,R94,R95,R96,R97,R98,R99,R100,R101,R102,R103,R104
291	RD00334	SMD precise resistor 1/10W	11.0KΩ ±1% 0603	R33,R34,R35,R36,R37,R38,R39,R40,R41,R42,R43,R44,R45,R46,R47,R48
292	RD00371	SMD precise resistor 1/10W	51.1KΩ ±1% 0603	R17,R18,R19,R20,R21,R22,R23,R24,R25,R26,R27,R28,R29,R30,R31,R32
293	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C33,C34,C35,C36,C37,C38,C39,C40,C41,C42,C43,C44,C45,C46,C47,C48,C49,C50,C51,C52,C53,C54,C55,C56,C57,C58,C59,C60,C61,C62,C63,C64
294	CI00051	SMD ceramic capacitor 0603	22PF/50V NPO ±5%	C65,C66,C67,C68,C69,C70,C71,C72,C73,C74,C75,C76,C77,C78,C79,C80,C81,C82,C83,C84,C85,C86,C87,C88,C89,C90,C91,C92,C93,C94,C95,C96
295	CI00055	SMD ceramic capacitor 0603	47PF/50V NPO ±5%	C25,C26,C27,C28,C29,C30,C31,C32
296	CI00063	SMD ceramic capacitor 0603	470PF/50V NPO ±5%	C1,C2,C3,C4,C5,C6,C7,C8,C9,C10,C11,C12,C13,C14,C15,C16,C17,C18,C19,C20,C21,C22,C23,C24
297	SG00122	SMD integrated circuit	NJM4580M-TE3	U1,U2,U3,U4,U5,U6,U7,U8,U9,U10,U11,U12,U13,U14,U15,U16
298	CB00249	electrolytic capacitor	47uF/50V φ 6.3*11mm 2.5mm	C113,C114,C115,C116,C117,C118,C119,C120,C121,C122,C123,C124,C125,C126,C127,C128
299	HK01409	PC board	P-313123-DIP(AMX-140FX)	
300	SC00004	quartz crystalloid	16.00MHZ LP-3.5S(HC-49US)	XT1
301	HC00484	row pin (single)#2200	2.54 180° 2*8P 13.5/19mm	CN2
302	SG00193	SMD integrated circuit	AT27LV010A-90JC/L-8	IC4
303	SG00139	SMD integrated circuit	AT27LV010A-90JC	
304	HK04041	PC board	P-313123-AI(L-8)	
305	HK03894	PC board	P-313123-SMD(L-8)	
306	HB00895	PCB	313123/2(1*6)	
307	CI00049	SMD ceramic capacitor 0603	15PF/50V NPO ±5%	C8,C9
308	CI00075	SMD ceramic capacitor 0603	0.1uF/50V Y5V +80,-20%	C17,C15,C18,C6,C10,C22,C20,C13,C14,C1,C3,C4,C11
309	RD00061	SMD fixed resistor 1/10W	10Ω ±5% 0603	R22
310	RD00068	SMD fixed resistor 1/10W	100Ω ±5% 0603	R12,R14,R7,R8,R34,R17,R13,R33
311	RD00073	SMD fixed resistor 1/10W	220Ω ±5% 0603	R3
312	RD00085	SMD fixed resistor 1/10W	1.5KΩ ±5% 0603	R16,R15,R21,R20,R4,R19,R10,R18,R9,R5
313	RD00088	SMD fixed resistor 1/10W	2.2KΩ ±5% 0603	R28,R27,R23,R24,R29,R30,R25,R26
314	RD00101	SMD fixed resistor 1/10W	10KΩ ±5% 0603	R32,R31,R1
315	RD00125	SMD fixed resistor 1/10W	1.0MΩ ±5% 0603	R2

AMX-220FX Parts List

No.	Part No.	Description	Specification	Remark
316	RE00006	SMD row resistor1/16W	100Ω*4 ±5% 8P 0603	AR1,AR2
317	SE00011	SMD rectifier diode	RLS4148 0.5A (LL-34)	D1
318	SG00068	SMD integrated circuit	74HC14DT	IC1
319	SG00138	SMD integrated circuit	AS4LC256K16EO-60JC	IC6
320	SG00166	SMD integrated circuit	TY-2 ALTO(GMCODE:105022)	IC3
321	SG00147	SMD integrated circuit	CHEF DSP(GMCODE:105022)	
322	SG00037	SMD integrated circuit	LD1117DT33C(TO-252)	IC2
323	HC00233	IC socket (SMD)	PLCC32 (D03-32T.A.4)	IC4
324	SG00016	SMD integrated circuit	UDA1345TS (Philips)	IC5
325	CB00165	electrolytic capacitor	10uF/16V φ 4*5mm	C7
326	CB00166	electrolytic capacitor	100uF/16V φ 6*5mm	C19,C12,C5,C24,C16,C21,C25,C26,C28,C2
327	NE11475	label	L-8	
328	NH00035	bond paper	0.06*1M	
329	NI00017	membrane	0.055*1M	
330	NE02717	label	MADE IN CHINA	
331	NH00038	paper	0.115*1M	
332	NI00028	membrane	0.110*1M	
333	AD00012	twin adhesive	90*120mm_V1.0	
334	NA00279	clip-chain bag	0.04t*100*150mm_V1.0	
335	NB03168	cushion	AMX-220 left_V1.0	
336	NB03167	cushion	AMX-220 right_V1.0	
337	NF01910	instruction	AMX-220/220FX ALTO_V1.1	
338	NH00149	paper	889*640mm	
339	ND00233	non woven	0.35t*402*79mm	
340	NA00127	PE bag	0.1t*610*200mm	
341	MI02097	fixed bracket	AMX-220 left_V1.0	
342	MI02096	fixed bracket	AMX-220 left_V1.0	
343	MJ00088	iron board	1.5*2135*1220 30.67kg	
344	MI02099	fixed bracket	AMX-220 right_V1.0	
345	MI02098	fixed bracket	AMX-220 right_V1.0	
346	MJ00088	iron board	1.5*2135*1220 30.67kg	
347	MG00247	copper pillar	M3*10*0.5PHsingle length16	
348	NI02386	knob	φ 14*13mm	
349	ME00015	nut	3m/m	
350	NI02911	handle	ALTO 072C	