11 – Specifications

Ratings

■ **Sampling frequencies**

44.1, 48, 88.2, 96, 176.4, 192 kHz

■ **Quantization bit depth**

16/24-bit

Input/output ratings

Analog inputs

■ **Mic inputs (balanced, IN1–IN8)**

Connector: XLR-3-31 equivalent (1: GND, 2: HOT, 3: COLD)
Input impedance: 2.4 kΩ
Nominal input level (gain knob at MAX): −68 dBu (0.0003 Vrms)
Nominal input level (gain knob at MIN): −12 dBu (0.195 Vrms)
Maximum input level: +8 dBu (1.947 Vrms)
Gain range: 56 dB

■ **Instrument inputs (unbalanced, IN1–IN2)**

Connectors: 6.3mm (1/4") standard TS jacks (Tip: HOT, Sleeve: GND)
Input impedance: 1 MΩ or more
Nominal input level (gain knob at MAX): −68 dBV (0.0004 Vrms)
Nominal input level (gain knob at MIN): −12 dBV (0.251 Vrms)
Maximum input level: +8 dBV (2.512 Vrms)
Gain range: 56 dB

■ **Line inputs (balanced, IN3–IN8)**

Connectors: 6.3mm (1/4") standard TRS jacks (Tip: HOT, Ring: COLD, Sleeve: GND)
Input impedance: 10 kΩ
Nominal input level (gain knob at MAX): −52 dBu (0.0019 Vrms)
Nominal input level (gain knob at MIN): +4 dBu (1.228 Vrms)
Maximum input level: +24 dBu (12.282 Vrms)
Gain range: 56 dB

■ **Line inputs (unbalanced, LINE IN 9–10)**

When **LEVEL** switch set to **−10dBV**

Connectors: 6.3mm (1/4") standard TS jacks (Tip: HOT, Sleeve: GND)
Input impedance: 10 kΩ
Nominal input level: −10 dBV (0.3162 Vrms)
Maximum input level: +10 dBV (3.162 Vrms)

■ **Line inputs (balanced, LINE IN 9–10)**

When **LEVEL** switch set to +4dBu

Connectors: 6.3mm (1/4") standard TRS jacks (Tip: HOT, Ring: COLD, Sleeve: GND)
Input impedance: 10 kΩ
Nominal input level: +4 dBu (1.228 Vrms)
Maximum input level: +24 dBu (12.282 Vrms)

Analog outputs

■ **Line outputs (balanced, LINE OUT 1–10)**

Connectors: 6.3mm (1/4") standard TRS jacks
(Tip: HOT, Ring: COLD, Sleeve: GND)
Output impedance: 100 Ω
Nominal output level: +4 dBu (1.228 Vrms)
Maximum output level: +24 dBu (12.277 Vrms)

■ **Headphone outputs (PHONES 1/2)**

Connectors: 6.3mm (1/4") standard stereo jacks
Maximum output: 70mW + 70mW (THD+N 0.1% or less, into 32 Ω load)
Frequency response (input → PHONES 1/2 output)

At 44.1 kHz and 48 kHz
20 Hz – 20 kHz: ±1.0 dB (JEITA)
At 176.4 kHz and 192 kHz
20 Hz – 80 kHz: ±5.0 dB (JEITA)

Digital audio input/output ratings

■ **COAXIAL IN**

Connectors: RCA pin jacks
Signal format: IEC60958-3 (S/PDIF)
Input impedance: 75 Ω
Input level: 0.5 Vp−p/75 Ω

■ **COAXIAL OUT**

Connectors: RCA pin jacks
Signal formats: IEC 60958-3 (S/PDIF)/IEC 60958-4 (AES/EBU)
• Changeable on the Settings Panel INTERFACE page
Output impedance: 75 Ω
Output level: 0.5 Vp−p/75 Ω

■ **OPTICAL (S/MUX) IN/OUT**

Connectors: OPTICAL (JEITA RC-5720C)
Signal format: Multi-channel optical (supports S/MUX when 88.2/96/176.4/192kHz)

Control input/output ratings

■ **USB**

Connector: USB 3.0 B type

Transfer rate: USB 3.0 Super Speed (5 Gbps)

■ **MIDI IN connector**

Connector: 5-pin DIN

Format: standard MIDI

■ **MIDI OUT connector**

Connector: 5-pin DIN

Format: standard MIDI

■ **WORD IN connector**

Connector: BNC

Input voltage: 2.0 Vp-p – 5.0 Vp-p

Input impedance: 75 Ω ±10%

Permitted frequency deviation during external synchronization: ±100 ppm

Terminal on/off switch

■ **WORD OUT connector**

Connector: BNC

Input voltage: 2.0 Vp-p (into 75 Ω)

Output impedance: 75 Ω ±10%

Sampling frequencies: 44.1, 48, 88.2, 96, 176.4 and 192 kHz

OUT/THRU switch

Audio performance

■ **Mic amp EIN (equivalent input noise)**

−125 dBu or lower

■ **Frequency response**

Input → LINE OUT (BALANCED)

At 44.1/48 kHz and 20 Hz – 20 kHz: ±0.5 dB (JEITA)

At 176.4/192 kHz and 20 Hz – 80 kHz: ±5 dB (JEITA)

■ **S/N ratio**

104 dB or higher (MIC/LINE IN → LINE OUT, gain knob at MIN, JEITA)

■ **Distortion**

0.005% or less (MIC/LINE IN → LINE OUT, 1kHz sine wave, at nominal input level and maximum output level)

■ **Crosstalk**

100 dB or more (MIC/LINE IN → LINE OUT, 1 kHz)

Computer system requirements

Check the TEAC Global Site   for the latest information about supported operating systems.

Windows

■ **Supported operating systems**

Windows 10 32-bit

Windows 10 64-bit

Windows 8.1 32-bit

Windows 8.1 64-bit

Windows 7 32-bit SP1 or later

Windows 7 64-bit SP1 or later

■ **Computer hardware requirements**

Windows computer with a USB 3.0 or USB 2.0 port

■ **CPU/processor speed**

2 GHz or faster dual core processor (x86)

■ **Memory**

2 GB or more

■ **Display resolution**

1280×800 or greater

CAUTION

• *The included USB cable (USB 2.0 or USB 3.0) and the USB specification that can be used depends on the computer and OS you are using.*

Supported operating systems	USB standard		USB cable connected
	USB 2.0	USB 3.0	
Windows 10 32-bit	✓	✓*	USB 3.0 cable*
Windows 10 64-bit	✓	✓*	USB 2.0 cable
Windows 8.1 32-bit	✓	-	USB 2.0 cable
Windows 8.1 64-bit	✓	-	
Windows 7 32-bit SP1 or later	✓	-	USB 2.0 cable
Windows 7 64-bit SP1 or later	✓	-	

* Connect with the included USB 3.0 cable to use the USB 3.0 standard.

• *Operation of this unit was confirmed using standard computers that meet the above requirements. This does not guarantee operation with all computers that meet the above requirements. Even computers that meet the same system requirements might have processing capabilities that differ according to their settings and other operating conditions*

11 – Specifications

Mac OS X

■ **Supported operating systems**

OS X El Capitan (10.11.2 or later)
OS X Yosemite (10.10.1 or later)
OS X Mavericks (10.9.5)
OS X Mountain Lion (10.8.5)

■ **Computer hardware requirements**

Mac with a USB 3.0 or USB 2.0 port

■ **CPU/processor speed**

2 GHz or faster dual core processor

■ **Memory**

2 GB or more

■ **Display resolution**

1280×800 or greater

CAUTION

The included USB cable (USB 2.0 or USB 3.0) and the USB specification that can be used depends on the computer and OS you are using.

Supported operating systems	USB standard		USB cable connected
	USB 2.0	USB 3.0	
OS X El Capitan (10.11.2 or later)	✓	✓*	USB 3.0 cable* USB 2.0 cable
OS X Yosemite (10.10.1 or later)	✓	-	USB 2.0 cable
OS X Mavericks (10.9.5)	✓	-	USB 2.0 cable
OS X Mountain Lion (10.8.5)	✓	-	USB 2.0 cable

*   Connect with the included USB 3.0 cable to use the USB 3.0 standard.

iOS devices

Device made by Apple Inc. running iOS 7 or later

Supported audio drivers

■ **Windows**

USB Audio Class 2.0, ASIO 2.0, WDM (MME), MIDI

■ **Mac**

Core Audio, Core MIDI

General

■ **Power**

DC12V AC adapter (GPE248-120200-Z)

■ **Power consumption**

20W

■ **Dimensions**

With standard frame attached
445 × 59 × 222 mm (W × H × D)
With rack mount adapters attached
482.6 × 44 × 222.4 mm (W × H × D)

■ **Weight**

2.7kg

■ **Operating temperature range**

5–35 °C (32–104 °F)

Dimensional drawings

■ **With standard frame attached (as shipped from the factory)**
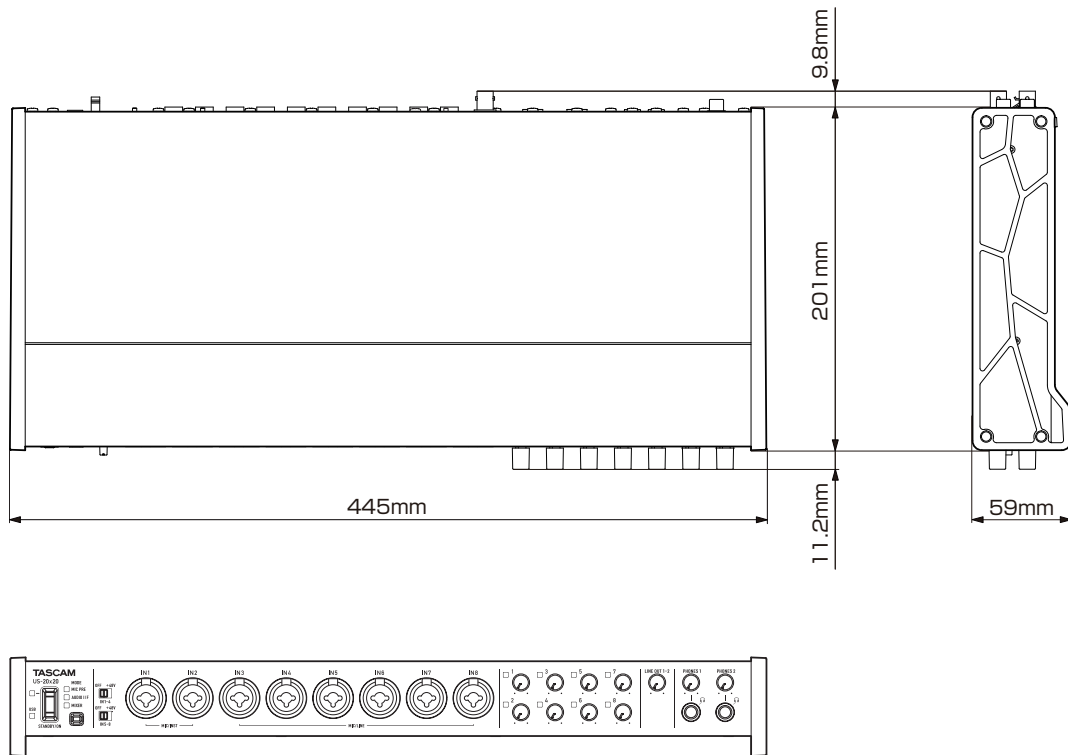
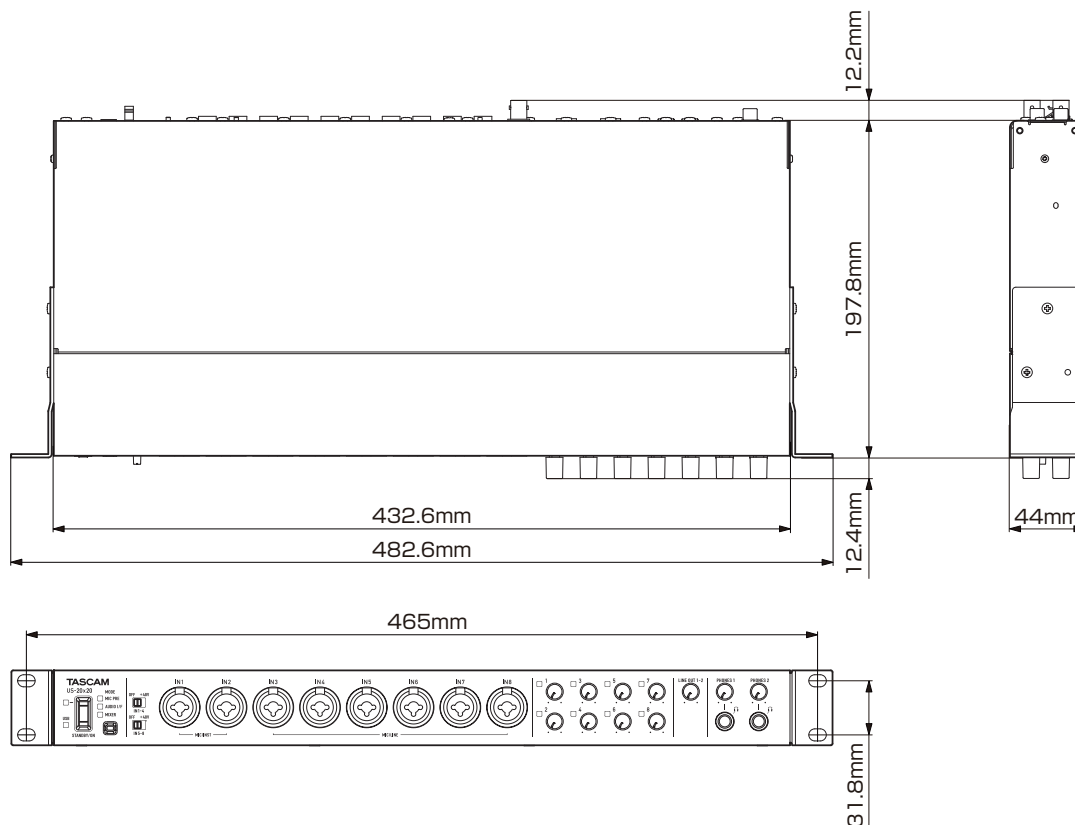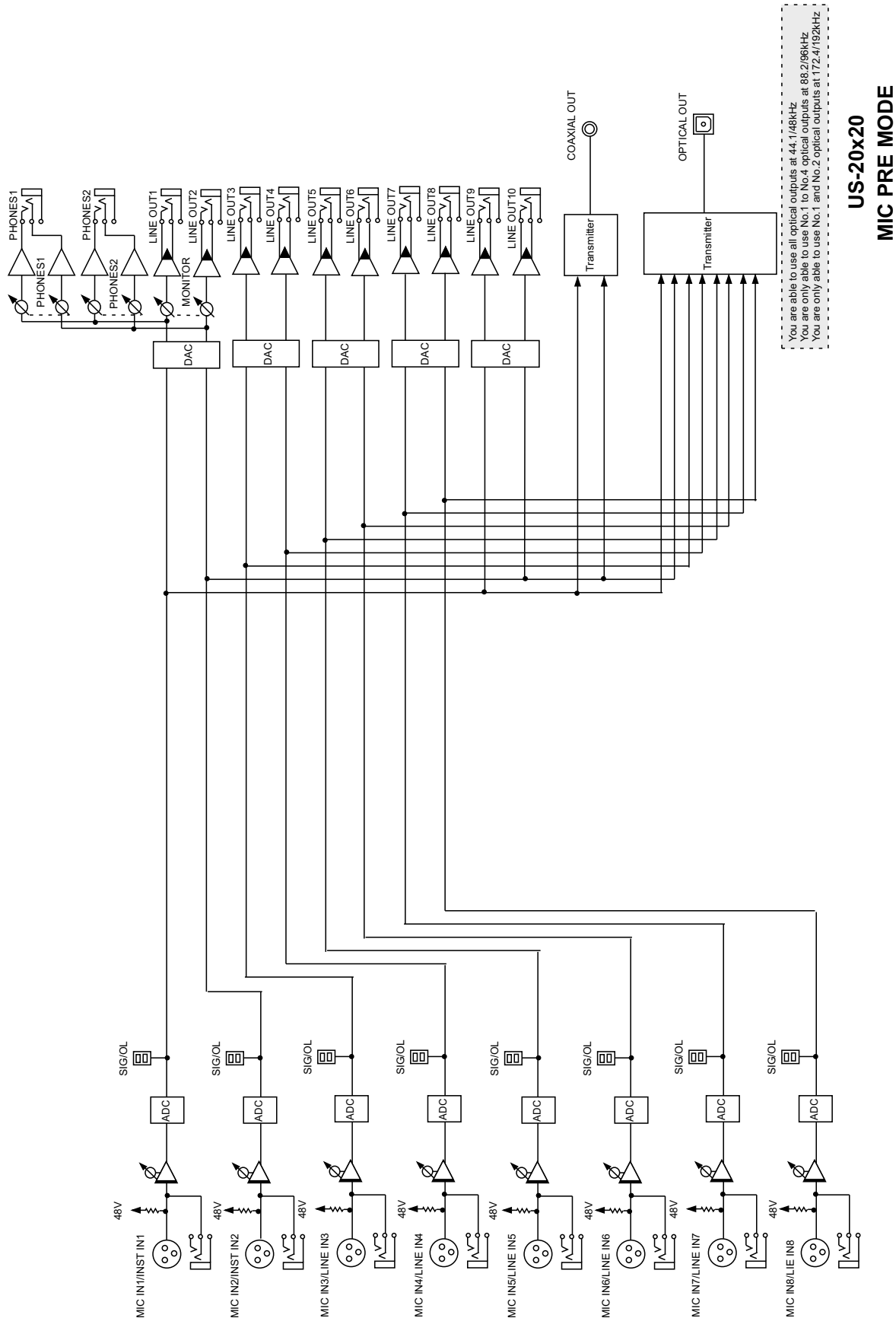■ **With rack mount adapters attached**

- Illustrations in this reference manual might differ in part from the actual product.
- The external appearance might be changed without notification to improve the product.
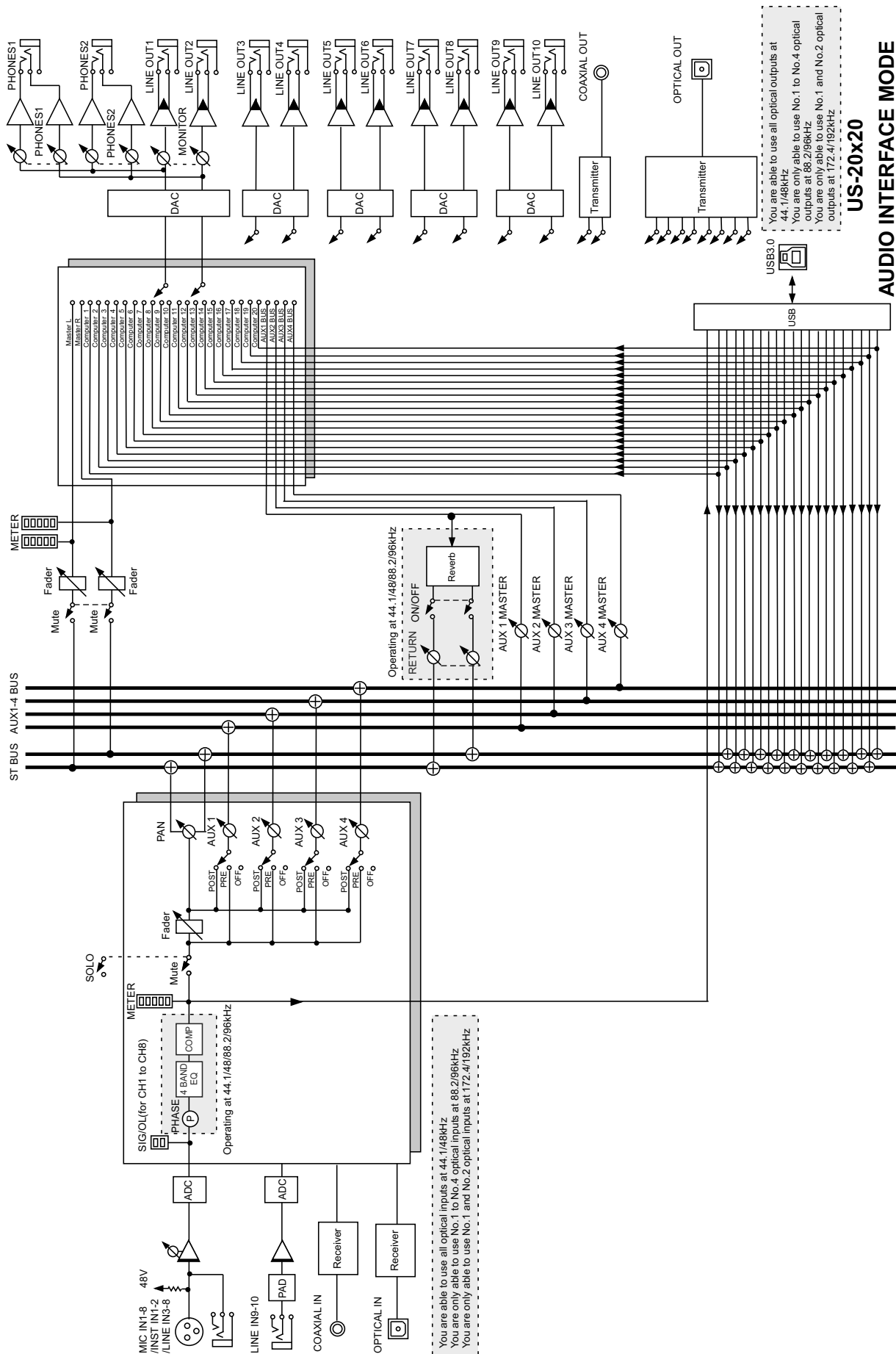
Block diagrams

Mic preamp mode

Audio interface mode

Digital mixer mode

US-20x20
DIGITAL MIXER MODE

Level diagrams

MIC IN 1-8 — dBu: +10, 0, -10, -20, -50, -60, -70 — +8dBu, 20dB, -12dBu, 58dB, -70dBu, 5.6dB — ADC: +2.4dBu, 0dBFs, -17.6dBu, -20dBFs

INST IN 1-2 — dBu: +10, 0, -10, -40, -50, -60, -70 — +8dBV, +4dBu, 20dB, -12dBV, 58dB, -70dBV, 5.3dB — ADC: +2.4dBu, 0dBFs, -17.6dBu, -20dBFs

LINE IN 1-8 — dBu: +24dBu, +20, +10, +4dBu, 0, -10, -50, -60, -62dBu — 20dB, 58dB, 21.6dB — ADC: +2.4dBu, 0dBFs, -17.6dBu, -20dBFs

LINE IN 9-10 — dBu: +24dBu, +20, +10dBV, +10, +4dBu, 0, -10dBV, -10, -20 — 20dB, 21.6dB — ADC: +2.4dBu, 0dBFs, -17.6dBu, -20dBFs

LINE OUT 1-2 — DAC: 0dBFs, +3.8dBu, -20dBFs, -16.2dBu — +24dBu, 20dB, +4dBu, 20.2dB — dBu: +20, +10, 0, -10, -20

LINE OUT 3-8 — DAC: 0dBFs, +3.8dBu, -20dBFs, -16.2dBu — +24dBu, 20dB, +4dBu, 20.2dB — dBu: +20, +10, 0, -10, -20

PHONE OUT — 70mW + 70mW @ 0.1% THD — DAC: 0dBFs, +3.8dBu, -20dBFs, -16.2dBu — 20dB, +6.3dBu, 12.7dB — dBu: +20, +10, 0, -10, -20

US-20x20 LEVEL DIAGRAM