

# Universal Audio

## LITTLE DIPPER

### FILTER SET

MODELS  
565  
565T



The Universal Audio Model 565 "Little Dipper" filter set combines computer aided active filter design with space-age integrated circuitry. Only 5¼" high, the Model 565 provides FOUR separate, continuously tunable cascaded filters:

- An 18 dB per octave Low Cutoff Filter, tunable from 20 Hz to 200 Hz.
- **TWO** band reject (dip) filters, with 50 dB minimum rejection and variable notch width to as sharp as 5% of center frequency; each continuously tunable from 20 Hz to 20 kHz. Or,
- Both band filters may be optionally switched to become band PASS filters—each continuously tunable 20 Hz to 20 kHz.
- An 18 dB per octave High Cutoff Filter, tunable from 2 kHz to 20 kHz.

The 565 is completely self-contained (operates from 110-120 V.A.C. or 220-240 V.A.C., 50/60 Hz and is designed for no-loss insertion in program circuits. A switch is provided to optimize performance in either -20 dBm or 0 dBm nominal level environments.

While the Little Dipper's versatility makes it an ideal tool for many signal processing tasks, its primary function is to remove undesirable "coherent" or "semi-coherent" noise components from audible range recorded tapes, film or records. For example, AC hum, oscillations, heterodyne "whistles," etc., can be rendered completely inaudible with no apparent effect on the sound quality of music or voice, because of the extreme sharpness of the band reject characteristic. Semi-coherent sounds, such as camera noise or fluorescent fixture "buzz" can be greatly reduced. Sounds of an incoherent nature such as jet aircraft, amplifier noise, and general background noise can be effectively reduced using the Low Cutoff and High Cutoff filters with or without the band reject filters. A silent-operating "bypass" switch is provided on the front panel to add or remove all filter action instantly at will.

The Model 565 can be used effectively for:

- **SPECIAL EFFECTS.** The notch filters can be used to produce "Phasing" effects. A double phasing effect may be achieved by using both notch filters simultaneously.
- **ENHANCEMENT.** Extremely sharp enhancement of any frequency or any two frequencies in the audio spectrum is possible in this mode. Combinations of high cutoff, low cutoff, band pass and notch with variable frequency can be used for imaginative creative effects.
- **HARMONIC DISTORTION FILTER.** The very low distortion of the Model 565 and its deep notch allows its use as a distortion measurement filter. The fundamental of any frequency from 20 Hz to 20 kHz may be removed for total harmonic measurement.
- **HARMONIC WAVE ANALYSIS.** The individual harmonics of complex audio waves may be selected using the bandpass filter, allowing exact harmonic structure analysis.



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# GENERAL CHARACTERISTICS

## LOW CUTOFF FILTER

**SLOPE:** 18 dB per octave or 60 dB per decade.  
**FREQ. RANGE:** 3 dB point continuously tunable 20 Hz to 200 Hz.  
**CONTROLS:** Tuning dial.

## HIGH CUTOFF FILTER

**SLOPE:** 18 dB per octave or 60 dB per decade.  
**FREQ. RANGE:** 3 dB point continuously tunable 2 kHz to 20 kHz.  
**CONTROLS:** Tuning Dial.

## NOTCH FILTERS (two in set)

**NOTCH DEPTH:** 50 dB minimum.  
**FREQ. RANGE:** Continuously tunable 20 Hz to 20 kHz.  
**NOTCH WIDTH:** Selectable 5%, 10%, or 50% of center frequency at 3 dB points.  
**CONTROLS:** Frequency dial, frequency decade multiplier, notch balance, fine frequency vernier, notch width, bypass (in/out) switch.

## BAND PASS FILTERS

**BANDPASS Q:** Switch selectable 1.2, 5 or 10.  
**BANDPASS GAIN:** Unity at peak frequency.  
**FREQ. RANGE:** Continuously tunable 20 Hz to 20 kHz.

# SPECIFICATIONS

**INPUT IMPEDANCE:** 10K ohms unbalanced (may bridge low imp. lines) or 600 ohms (term. switch on rear of chassis)  
**LOAD IMPEDANCE:** May be operated into any load 600 ohms or greater.  
**GAIN:** Unity ( $\pm 1$  dB)  
**MAX. INPUT LEVEL:** +20 dBm or 0 dBm switch selectable  
**HUM AND NOISE:** Equivalent to an input signal of:  
High Level input, -70 dBm  
Low Level input, -90 dBm  
**FREQ. RESPONSE:**  $\pm .5$  dB 30 Hz to 15 kHz  
(-3 dB at 20 Hz 20 kHz)  
**DISTORTION:** .15% maximum 20 Hz to 20 kHz at maximum input. (.5% maximum with output transformer—Model 565T)  
**POWER SOURCE:** 110-120 V.A.C. 50/60 Hz, or 220-240 V.A.C. 50/60 Hz—rear panel switchable.  
**CONNECTORS:** Front Panel TRS jacks, normalled to rear panel barrier strip.  
**OPTIONS:** Unbalanced output: Specify Model 565  
Output repeat coil: Specify Model 565T  
**FINISH:** Black anodized panel, horizontally brushed.  
**SIZE:** 19" standard rack width, 5¼" high, 9" deep.  
**WEIGHT:** 13 lbs.  
**SHIPPING WEIGHT:** Approx. 17 lbs.

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