

MODEL A6000-E1
10 MHz – 2048 kHz Frequency Converter
USER'S HANDBOOK

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Safety Considerations

General

This product and related documentation must be reviewed for familiarisation before operation. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the instrument may be impaired.

Before Applying Power

Verify that the product is set to match the available line voltage and the correct fuse is installed.

Before Cleaning

Disconnect the product from operating power before cleaning.

WARNING

Bodily injury or death may result from failure to heed a warning. Do not proceed beyond a warning until the indicated conditions are fully understood and met.

CAUTION

Damage to equipment, or incorrect measurement data, may result from failure to heed a caution. Do not proceed beyond a caution until the indicated conditions are fully understood and met.

This equipment must be earthed

An uninterruptible safety earth ground must be maintained from the mains power source to the product's ground circuitry.

WARNING

When measuring power line signals, be extremely careful and use a step down isolation transformer whose output is compatible with the input measurement capabilities of this product. The product's front and rear panels are typically at earth ground. Thus, never try to measure AC power line signals without an isolation transformer.

WARNING

Instructions for adjustments when covers are removed and for servicing are for use by service-trained personnel only. To avoid dangerous electrical shock, do not perform such adjustments or servicing unless qualified to do so.

WARNING

Any interruption of the protective grounding conductor (inside or outside the instrument) or disconnecting of the protective earth terminal will cause a potential shock hazard that could result in personal injury. Grounding one conductor of a two conductor out-let is not sufficient protection.

Whenever it is likely that the protection has been impaired, the instrument must be made inoperative and be secured against any unintended operation.

If the instrument is to be energised via an autotransformer (for voltage reduction) make sure the common terminal is connected to the earthed pole terminal (neutral) of the power source.

Instructions for adjustments while the covers are removed and for servicing are for use by service-trained personnel only. To avoid dangerous electrical shock, do not perform such adjustments or servicing unless qualified to do so.

For continued protections against fire, replace the line fuse(s) with fuses of the same current rating and type (for example, normal blow time delay). Do not use repaired fuses of short-circuited fuse holders.

Voltage, Frequency and Power Characteristics

Voltage 220-240V AC

Frequency 40-50Hz

Power characteristics 500mA Max

Environmental Conditions

Temperature

Operating (ambient)	-10°C to +55°C (-65 to +65 op)
Storage	-40°C to +85°C

Magnetic Field

Sensitivity	$\leq 2 \times 10^{-11}$ / Gauss
Atmospheric Pressure	-60m to 4000m
	$< 1 \times 10^{-13}$ / mbar

Replaceable Fusing Characteristics

800mA time lag HBC

Cleaning Instructions

To ensure long and trouble operation, keep the unit free from dust and use care with liquids around the unit.

Be careful not to spill liquids onto the unit. If the unit does get wet, turn the power off immediately and let the unit dry completely before turning it on again.

Clean with a damp (with water) cloth.

Never spray cleaner directly onto the unit or let liquid run into any part of it. Never use harsh or caustic products to clean the unit.

Frequency Converter A6000-E1

Operating Procedure

Introduction

The Quartzlock model A6000-E1 is a frequency converter for use with frequency standards such as Rubidium, Cesium, or Hydrogen maser standards. Sine wave outputs are provided at frequencies of 2,048 kHz.

Inputs

The primary input is a sine wave at 10MHz from the frequency standard. This should be at a level between +5 dBm and +15 dBm. The input impedance of the model A6000-E1 is 50Ω.

Outputs

The 2,048 kHz outputs are obtained from 3 channels of a 4-way distribution amplifier. The output levels will follow the input levels, as the distribution amplifier is a wide band linear amplifier.

Specification

- 1) **Inputs:**
 - a) 10 MHz sine wave, 10 dBm nom into 50Ω nom.
- 2) **Outputs:**
 - a) 1 off 2048 kHz sine wave
- 3) **Input characteristics:**
 - a) **Sine wave Impedance:** 50Ω nominal
 - Level: +5 dBm to +13 dBm adjustable
 - Input SWR: <1.2: 1
- 4) **Output characteristics:**
 - a) **Sine wave:**
 - impedance: 50Ω nominal
 - Level: 13 dBm nominal into 50Ω (1 volt RMS)
 - Output SWR: <1.2:1