

# Tellabs® 1000 Multi-Service Access Series (MSA) Extended Network Power Supply Unit Plug-in Card (ENPSU)

## Overview

The Tellabs Extended Network Power Supply Unit (ENPSU) plug-in card enables express power in the Tellabs 1900-48 cabinet by converting express power into the voltages required by the equipment and batteries. The ENPSU card makes a traditional rectifier/battery charger unnecessary because it charges batteries and powers the equipment cabinets. The ENPSU card operates at a higher-input voltage than the Network Power Supply Unit.

The ENPSU plug-in card generates sine wave ringing voltage for use by subscriber interfaces. Ringing frequency and ringing voltage are software provisionable. The ringing generator provides unbalanced ringing.

The ENPSU plug-in card uses a DC-to-DC switching converter for high efficiency and low thermal dissipation. The Tellabs 1900-48 cabinet requires only one ENPSU card; however, an additional card slot can enable for redundancy.

When equipped redundantly, the ENPSU card uses hot standby to provide uninterrupted service if one unit fails. The ENPSU card draws power from the batteries if the system requires it, and then recharges the batteries during times of non-peak traffic.

### LEDs on the NPSU faceplate indicate the following:

- A red FAIL — plug-in card failure
- A green ACTV — the plug-in card is active
- A green LINE — the unit is receiving input power

The unit sends alarm and status indications to the CPU. Test jacks on the faceplate monitor system voltages.

## Features and Benefits

- High-efficiency switching DC/DC converter
- Reverse polarity protection
- Software provisionable ringing frequency
- Over-voltage / over-current shutdown
- Low voltage alarm
- Low thermal dissipation
- Low voltage disconnect
- Battery charger

## Specifications

### DC-DC Converter

- Input:  $\pm 130$  V Nominal,  $\pm 65$  V to  $\pm 140$  V
- Output:  $+5.15$  V  $\pm 1.5\%$ ;  $-5.15$  V  $\pm 10.0\%$
- Long line talk battery:  $-49.0$  Vdc to  $-57.0$  Vdc
- Short line talk battery:  $-32.0$  Vdc line battery  $\pm 10\%$
- Battery: V DC: 50.5, 52.5, 54.5, 56.5 (under CPU control)
- Fan: Battery less 1 diode; only present when input is present
- Low voltage alarm (battery):  $-44$  V DC
- Low voltage disconnect:  $-38$  V DC

### Regulation

- $+5.15$  V:  $<1.5\%$  load;  $<1.5\%$  line;  $<0.2\%$  per specified temp range
- $-52$  V DC:  $<250$  mV peak-to-peak
- Ripple and Noise (DC - 20 MHz): 1.0% peak-to-peak

### Output Current

- Total power including fan: 100 W
- $+5$  V DC: 6 A
- $-5$  V DC: 1 A
- $-52$  V DC or battery: 2 A
- $-32$  V DC: 0.5 A



### *Isolation*

- Internal converter: 500 V input to output

### *Ringling Generator*

- Pedestal voltage: -48.0 V
- Output voltage range: 60, 65, 85, 95 V AC
- Voltage tolerance:  $\pm 5\%$
- Output frequency (provisionable): 16.7, 17.7, 18.7, 20.0, 21.0, 22.3, 23.5, 25.0, 26.4, 28.0, 29.8, 31.6, 33.3, 35.4, 37.6, 40.0, 42.2, 44.4, 47.4, 50.0 Hz
- Frequency tolerance:  $\pm 2.5\%$
- Power (continuous): 15 REN

### *Environmental*

- Operating temperature: -40 to +149° F (-40 to +65° C)
- Humidity: 5–90% (not to exceed 0.024 kg water/kg of dry air)

### *Dimensions*

- Height: 5.125 in (13.018 cm)
- Width: 1.0 in (2.54 cm)
- Depth: 10.5 in (26.67 cm)
- Weight: 1.0 lb (0.45 kg)

### *Compliance*

- Conducted noise: TR-TSY-000057
- Emissions: GR-1089-CORE
- Lightning: GR-1089-CORE

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