Information Sheet IS16007

VS1 IPA Output Power Configuration

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IS16007: VS1 IPA Output Power Configuration
INFORMATION SHEET

1 INTRODUCTION
This document describes changes that may increase IPA amplifier reliability by reducing its output power in FM mode.

1.1 Equipment Affected
This procedure applies to all VS1 transmitters. This procedure is written based on the current nomenclature (NARF65H or NARF65H/01) and current software release (VS SW4.3). Earlier versions of VS1 transmitters may have minor differences in hardware and front panel menu structure. If your VS1 does not have the current software, Nautel recommends updating the transmitter software. Contact Nautel Customer Service for guidance.

1.2 Responsibility for Implementation of Procedure
Only qualified station maintenance personnel who are familiar with VS1 transmitters should perform this procedure.

1.3 Scheduling
Implement this procedure at the earliest convenience.

1.4 Manpower Requirements
Completing this procedure requires approximately 10 minutes (excluding any SW upgrades) of off-air time and can only be performed using the transmitter's front panel graphic user interface (GUI).

1.5 Special Tools/Test Equipment
No special tools are needed for this procedure.

1.6 Materials
No parts or test equipment is needed to complete this procedure.

1.7 Identifying Modified Assemblies/Parts
Identifying modified assemblies informs future maintainers of the current configuration. Mark the rear of the transmitter near the serial number label with "IS16007" using indelible ink to indicate it has been modified.

1.8 Publications Affected
Implementing this procedure will affect alarm information found in the VS1 Troubleshooting Manual and will need to be updated accordingly:

Table 1.1: Troubleshooting Alarms

- IPA Output High alarm, change the threshold from 80 W to 130%.
- IPA Output Low alarm, change the threshold from 60 W to 70%.

2 Reducing the IPA Power

NOTE

Transmitters that normally operate in HD or FM+HD mode should complete the IPA power tests below, when convenient. The IPA power in HD or FM+HD mode is very low and thus unaffected.

(a) If possible, operate at normal output power in FM mode. From the front panel GUI, navigate to the **View Meters** screen (**Main Menu -> View Status -> View Meters**). Record the following meter readings:

- IPA Power (IPA Fwd)
- IPA Dc Current (IPA Curr)
- Average PA Voltage (PA Volts A)
- Forward Power (RMS Fwd)
- (Exciter) DAC Gain

(b) Select **RF Off**.

(c) Navigate to the front panel GUI's **Thresholds** screen (**Main Menu -> System Settings -> Factory Settings -> Thresholds**). NOTE: A prompt will appear when entering the **Factory Settings** menu. Press the accept (checkmark) button to continue to the **Thresholds** screen.

(d) Verify the IPA Low threshold is set to 70 %. In older software, the "%" will be displayed as "W". Ignore the "W" symbol.

(e) Verify the IPA High threshold is set to 130 %. In older software, the "%" will be displayed as "W". Ignore the "W" symbol.

(f) Set the IPA Power to 37.5 W. The software will automatically adjust the IPA output level by several watts based on the Preset's operating frequency.

3 Returning the Transmitter to Service

(a) Press **RF On** and ensure the transmitter returns to normal output power.

(b) Navigate to the front panel GUI's **View Meters** screen (**Main Menu -> View Status -> View Meters**).

(c) Verify the IPA dc current is between the Min Limit and Max Limit shown in Figure 1.

(d) If the IPA dc current is too low, press **RF Off** first, increase the IPA Power [see step 2 (f)] by the smallest increment size, turn **RF On** and re-check the IPA dc current. Continue to increase IPA Power as necessary. You should not have to exceed the original IPA power level recorded in Step 2 (a); contact Nautel if problems exist.

(e) If the IPA dc current exceeds the maximum limit, stop making changes.

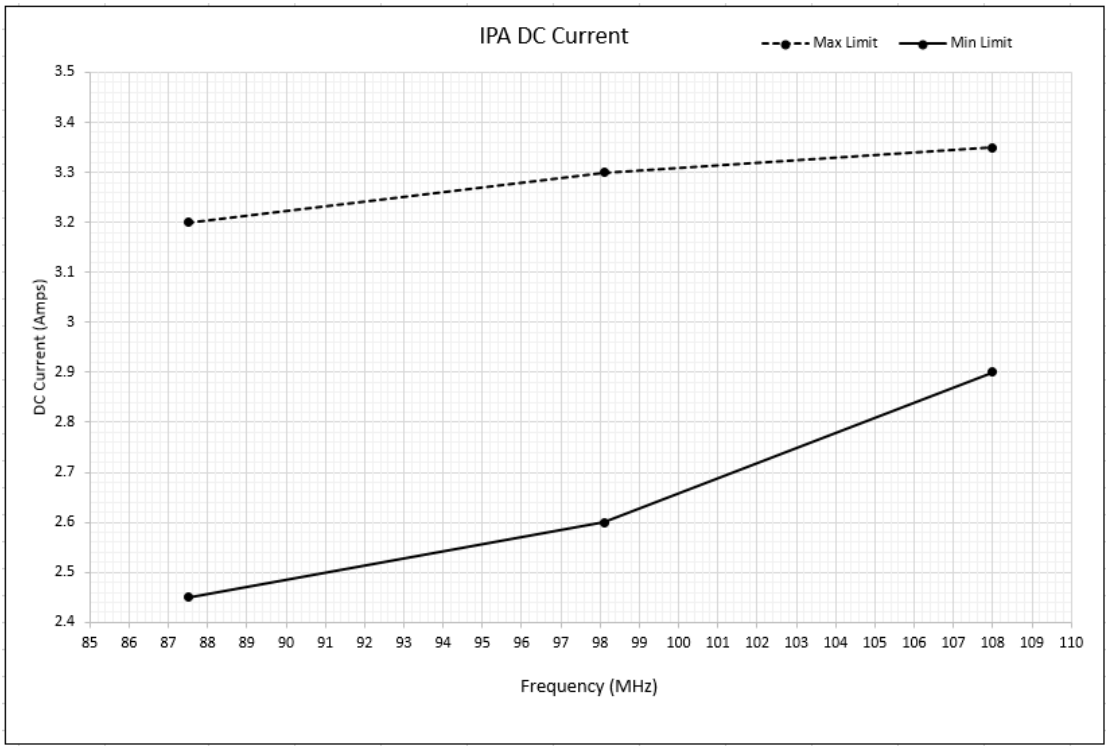

Figure 1: IPA Dc Current Limits (FM mode only)

(f) Record the following meter readings and email along with the transmitter serial number to Nautel Customer Service (support@nautel.com):

- Forward Power (RMS Fwd)
- IPA Power (IPA Fwd)
- IPA Dc Current (IPA Curr)
- Average PA Voltage (PA Volts A)
- (Exciter) DAC Gain

(g) The modification is complete.

IMPORTANT!

Retain this document and include it with station service protocol. It will be necessary to repeat this procedure after any of the following changes occur:

- Replacement of the NAPA28B Pre-Amp/IPA PWB
- Replacement of the NAPE87A Exciter/Control PWB
- Replacement of the NAPH02A Combiner PWB
- Reloading of the Operating System (OS) software.

  NOTE: Firmware upgrades using *.tgz files do not require the procedure to be performed.