



HARRIS CORPORATION

Broadcast Communications Division
3200 Wismann Lane
Post Office Box 4290
Quincy, IL USA 62305-4290
telephone 1-217-222-8200

www.harris.com

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Compliance Certification Services
47174 Benicia Street
Fremont, CA 94538

Attn: Mr. Mike Kuo

Dear Mike,

This letter and the accompanying test report and documents are in application for FCC Certification of a series of Digital Television transmitters to be operated under the requirements of FCC Part 27.53 (j).

Eight models of the CoolPlay 1670 DVM series of transmitters are included in this application, with power output ratings from 25 watts to 400 watts, after the output filter. All models use identical sub-assemblies, with the only significant difference between them being that the 400W system uses a combiner and the other system could have single or dual outputs to achieve the desired power levels. The other significant difference being the number of output amplifier modules used to produce the required power.

The CoolPlay 1670, DVM series of transmitters are an advanced modular design, using the same components and assemblies in a building-block approach to create transmitters with output power ratings from 25 watts to 400 watts at the cabinet output connection or connections. The unit has two variants one with a single output with output levels of 50, 100, 200, 400 watts and the second variant has two outputs each with output powers of 25, 50, 100, 200. The number of PA (Power Amplifier) modules and filters used is governed by the power output of each model. For the single output system, 1 PA module and 1 filter is used in the DVM50, DVM100 transmitter, 2 PA modules and 1 filter are used in the DVM200 and 4 PA modules and two filters are used in the 400 watt DVM400. For the dual output system, 2 PA module and 2 filters are used in the DVM50D (two outputs of 25W ea.), DVM100D (two outputs of 50W ea.) transmitters, 2 PA modules and 2 filters are used in the DVM200D (two outputs of 100W ea.) and 4 PA modules and 2 filters are used in the DVM400D (two outputs of 200W ea.).

A single cabinet houses each model. Our test report intends to show that however many PA modules are used, the performance of the transmitter is well within the limits imposed by Part 27.53 (j).

Tests were conducted on a single 400 watt model, the DVM400. This is the highest output power level offered in this series of transmitters. These tests are also asserted to be typical of the performance to be had from lower power versions of the same transmitter.

A front and rear photo on page 7 of the test report give details of the various parts of the transmitter.

Justification for Certifying these eight transmitter models as a group

Modern solid-state transmitters are highly modular in design. Where parallel output amplifier modules are used to arrive at the desired output power, the principal emission characteristics are established by the amplifier modules themselves.

If the overall transmitter structure is identical for several different power levels, in which the only change is to alter the number of modules combined together, performance of the various models at the various power levels will be consistent.

Harris Broadcast Communications has obtained confirmation in previous years from FCC contacts that this is a valid concept, and recently we received the following eMail in response to an inquiry about the current designs:

From: Joe Dichoso [<mailto:Joe.Dichoso@fcc.gov>]
Sent: Thursday, October 12, 2006 8:59 AM
To: Hanna, Tania
Cc: Rashmi Doshi; Steven Dayhoff; Andrew Leimer; Joe Dichoso
Subject: RE:

Hello Tania,

Below is our reply to your inquiry. Please let us know if you have any issues with it or not.

Thanks,
Joe

Rack mounted transmitters with stacked amplifier modules under one FCC identifier is allowed under the following conditions.

- 1) The amplifier modules are identical in design.
- 2) The addition or deletion of the modules changes only the output power.
- 3) The frequency range of different models with different modules is identical. There are no changes in the frequency operational range or determining circuitry between the different models with different installed modules.
- 4) For Certification submittals, each rack is tested with the maximum number of modules installed. While only the full rack is tested and submitted, the grantee is responsible for compliance for all configurations. Also, a separate line item should be added for each combination (e.g.: 1, 2, or 3 identical "stacked" power amplifiers would have 3 line items).

Additional info:

Section 2.1043 does not allow a change in maximum output power, therefore a C2PC would not be allowed to add modules to increase output power beyond the configurations in the original application.

Also, Section 2.1403 does not allow a change in frequency determining or output power circuitry, therefore non-identical plug-in modules other than the original module cannot be added with a C2PC.

We believe these current DVM series CoolPlay 1670 transmitters meet the above requirements.

- All of the amplifier modules used are identical.
- Adding or deleting modules does change only the output power.
- The frequency range of all will be identical. The service for which the CoolPlay 1670 transmitters have been designed to operate on a single TV channel everywhere, as Single Frequency Networks of transmitters to supply TV signals to mobile devices such as cellular telephones.
- Therefore, we have tested at the maximum power possible in this service, by using the DVM400.
- The output power circuitry (PA Modules) and the frequency determining circuitry in the exciter) all models of this transmitter series.

Therefore, these data are submitted in support of the application for FCC authorization of these eight models of the CoolPlay 1670 product, under the required Certification method. We respectfully request these products be certified.

Yours sincerely,



Karl Black
Compliance Engineer

Harris Broadcast Communications
(217) 221-7543