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January 13, 2000

Federal Communications Commission
Equipment Authorization Division
7435 Oakland Mills Rd.
Columbia, MD 21046

Dear Review Personnel:

The purpose of this letter is to comment on the attached filing which requests a Grant of Authorization for an RF module. Since there are no officially stated rules governing the approval of a module we are relying on the FCC's stated opinion which has been uniformly applied to products of this type. I have attached one example of that opinion which defines six points which must be satisfied in order to receive approval as a modular RF device. The module in the attached filing meets those points as follows:

- The module incorporates extensive spurious and harmonic suppression techniques including a differential LO topology and SAW output filter.
- The module uses a precision on-board regulator and fully buffered and bypassed inputs. There is no known external effect that voltage or data can have to adversely affect intentional or unintentional emissions.
- The module is submitted with an antenna which is attached with a unique connector not available to the general public and therefore meeting the requirements of 15.203.
- The module is labeled externally as specified by the above referenced opinions and the module integrator will receive labeling instructions to maintain compliance in instances where the module's own label will not be visible.

As a leading manufacturer of RF products, Linx is particularly grateful to the agency for its practicality in allowing modular approvals. This reduces the burden on the agency and the industry while insuring airwaves that are appropriately utilized.

Best Regards,

Paul True
Linx Engineering



HYBRID MODULAR CIRCUIT SOLUTIONS



FEDERAL COMMUNICATIONS COMMISSION
Equipment Authorization Division, Application Processing Branch
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DATE: June 11, 1998
FROM: Gregory M. Czumak
REFERENCE: your fax dated May 20, 1998
NO. OF PAGES: one
TO: Scott McCutchan
ORGANIZATION: Compatible Electronics

Dear Scott :

This is in response to your fax dated May 20, 1998. There are no official FCC Rules that permit authorization of a transmitter as a module but the following standards have been uniformly applied as a Commission policy in support of industry needs. For a module to be approved, it must satisfy the following requirements:

- (1) a modular transmitter must have its own RF shielding
- (2) a modular transmitter must have buffered modulation/data inputs (if such inputs are provided)
- (3) a modular transmitter must have its own power supply regulation
- (4) a modular transmitter must have an antenna which complies with the requirements of Section 15.203 (permanently attached or employs a "unique" antenna coupler)
- (5) a modular transmitter must be tested in a stand-alone configuration, i.e., the antenna, AC or DC power and data input/output lines must be connected to the module but, the module must not be inside another case during testing
- (6) a modular transmitter must be labelled with its own FCC ID number, and if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains TXFCC ID: XYZMODEL1." The exact wording is not specified in our Rules (since modules are not specifically addressed), so you may use similar wording which expresses the same meaning.

The only other issue that may need to be addressed is the RF exposure limit mentioned in Section 15.247(b)(4) of the rules for spread spectrum transmitter operation. All other sections of Part 15 do not possess enough power to present a problem with the RF exposure limits. However, a spread spectrum transmitter operated at permissible power levels may pose a threat to RF safety, therefore, compliance with the RF exposure limits must be addressed for spread spectrum transmitter modules.

Please note that if modular approval is granted for a device, the grant of authorization will specifically use the term "module."

If you have additional questions on this subject, please do not hesitate to contact me.