# Test Data for H25PB3

## I. INFORMATION REQUIRED UNDER PART 2

Para.

2.10033(a) This Application for Certification is filed on form 731 with all questions answered. Confidentiality is being requested for the schematic. An application fee of $475 and a request for confidentiality fee of $135 has been sent.

2.10033(b) N/A

2.10033(c)(1) The full name and address of the applicant and manufacturer for certification is:

DTC Communications Inc.
75 Northeastern Blvd.
Nashua, NH 03062

(2) The FCC Identifier of the device is H25PB3

(3) A copy of the operating instructions is included in the EXHIBITS.

(4) Emission: NBFM Tone – Designator: 12K5F3W

(5) Frequency Range: 148 –174 MHz

(6) Power: Single level of .995 Watts

(7) Maximum Power Rating of 1.0 Watts

(8) All stages including the final radio frequency amplifying device are powered by DC regulated supplies from a stand-alone battery source or external DC power.

(9) A tune-up procedure is included in the EXHIBITS.

(10) A schematic Diagram is included in the EXHIBITS.

(11) A drawing of the equipment identification label is included in the EXHIBITS.

(12) Photographs showing the external and internal construction of the equipment is included in the EXHIBITS.

(13) N/A

(14) Test Data as required by (46)§§(47) 2.1046 through 2.1057, inclusive, is measured in accordance with the procedure setout in (48)§ 2.1041.

(15) N/A

(16) N/A

(17) N/A

## II. TEST DATA

Data required by (46)§§(47) 2.1046 through 2.1057, inclusive, is measured in accordance with the procedures setout in (48)§ 2.1041.

RF POWER OUTPUT 2.1046(a), 2.1033(c)(8)

Power output measurements were made at the RF output terminals.
This test was done with an unmodulated carrier in accordance with §90.205(d).

The power output was measured with a Marconi Radio Communications Test Set, Model 2955.

The electrical characteristics of the RF load was 50 + j0 Ohms (50 ohms pure resistive).

The RF power measured was 0.99 Watts at 370mA/ 6 VDC.

Thus the sample complies with §90.205(d).

MODULATION CHARACTERISTICS 2.1047(a), 90.211(a)

Spectrum analyzer data is included which shows that the equipment will meet the modulation requirements under §90.211(a). This transmitter is equipped with an audio low pass filter circuit.

*Frequency Response*

Since the H25PB3 employs single frequency, single level, tone modulation (1 kHz sine wave producing 2.5 kHz deviation), frequency response data is not applicable.

*Moduulation Limiting*

Similarly, modulation limiting data is not applicable.

OCCUPIED BANDWIDTH 2.1049, 90.211(a)

The next series of plots are taken from a Marconi 2390A spectrum analyzer. The transmitter was self-modulated by the microprocessor audio generator with a sine wave at 1000 Hz at a modulation level to produce 2.5 kHz deviation. The transmitter output was connected to the input of the spectrum analyzer via a 9 inch test pigtail made of RG-188 coaxial cable, terminated with a BNC connector and a JFW model 50FH-020-10, 50-ohm, 20 dB attenuator. This test pigtail was connected to the MMCX antenna output connector of the board sample. Both the unmodulated “beacon” and tone modulated “confidence /alarm” modes are superimposed on the plot thus showing unmodulated to modulated occupied bandwidth characteristics.

Power was supplied to the test sample via a HP E3610A Power Supply and test leads.

Paragraph 90.210(d) states that for transmitters that are designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

1) 0n any frequency from the center of the authorized bandwidth f0 to 5.625 kHz removed from f0: Zero dB.

2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least 7.25 (fd – 2.88 kHz) dB.

3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: At least 50 + log (P) dB or 70 dB, whichever is the lesser attenuation.

The authorized bandwidth is 12.5 kHz; the assigned frequency of the sample is 155.955 MHz.

This mask is superimposed on the first spectral plot.

All emissions are below the required limits. Thus, the sample complies with 90.211(a).

**DTC SPECTRAL OCCUPIED BW PLOT**