Date: 1 September 1998

To: Frank Coperich, FCC

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Subject: Response to Correspondence ID: 3101

Grantee Code: NT7
Product ID: SU-200
731 Confirmation Number: EA89425
Correspondence ID: 3101

1.) Response to question # 1:
Sorry for the confusion, DIVA concurs with your note. This
is correct. The ERP (power with respect to a dipole antenna
is 2.1 dB less). The gain of the antenna is 0 dBi or -2.1
dBd. The ERP is therefore: 27.3 dBm - 2.1 dB = 25.2 dBm or
0.33 W

2.) Response to question # 2.
DIVA is assuming that the minimum user spacing referred
to is the 19 cm required to meet the MPE limit. Please
note that our calculation does include the use of the 9 dBi
gain antenna. This calculation was given in the previous
response (Correspondence ID: 1824, item 4). The calculation
is repeated below:

The DIVA radios can be used with the 0 dBi built-in TX/RX
antenna or an external antenna with a maximum gain of 9
dBi. The power output at the antenna port is 0.8 watts
+20/-50% or 0.96 watts maximum (0.8 watts + 20%).
The maximum antenna gain G is 9 dBi (7.94 numeric ratio)
(for the 9 dBi antenna). The Transmitter Duty Cycle DF is
33% for TDMA (used by the SU-200).
The required MPE Limit is f/1500 mW/cm^2 At 824 MHz the MPE
Limit is 0.549 mW/cm^2 (worst-case)
At 849 MHz the MPE Limit is 0.566 mW/cm^2
The Power density S = E^2/3770 = 0.549 mW/cm^2 for the
worst-case MPE.
The electric field strength E = 45.5 V/m for the worst-case
MPE.

Since E = (300*P*G*DF)^(1/2) / d = 45.5 V/m for the worst-case MPE.
Where P is in watts, G is a numeric ratio and d is in cm.
Using the values given above with a 9 dBi antenna and solving for d
using worst-case MPE we obtain d = 19.1 cm (for 9 dBi the external antenna).

Note that the use of the built-in antenna results in d = 6.8 cm for the worst case MPE.

Please note that the unit is designed to be wall mounted near the ceiling and includes an RJ-11 jack to which a standard phone line is attached. Phone line extensions are typically wired through the home or business from this RJ-11 jack. Since generic third party telephone handsets are used, as supplied by the customer, there is no reason for the SU-200 to be in close proximity to the user during normal usage.
Depending on the site requirements, either the built in antenna is used or an externally mounted higher gain antenna (e.g., the 9 dBi antenna referenced before) is used. The external antenna must be located external to the building, usually on a mast attached to the roof or an external wall of the structure. A DIVA supplied cable adapter (DIVA P/N 120-00003-01) and RF cable is used to connect the SU-200 to the external antenna. Attached is a drawing of a typical installation using an external antenna.

Please Note : When external antenna is used, the built in antenna is disabled.

DIVA SU-200
TYPICAL EXTERNAL ANTENNA
INSTALLATION
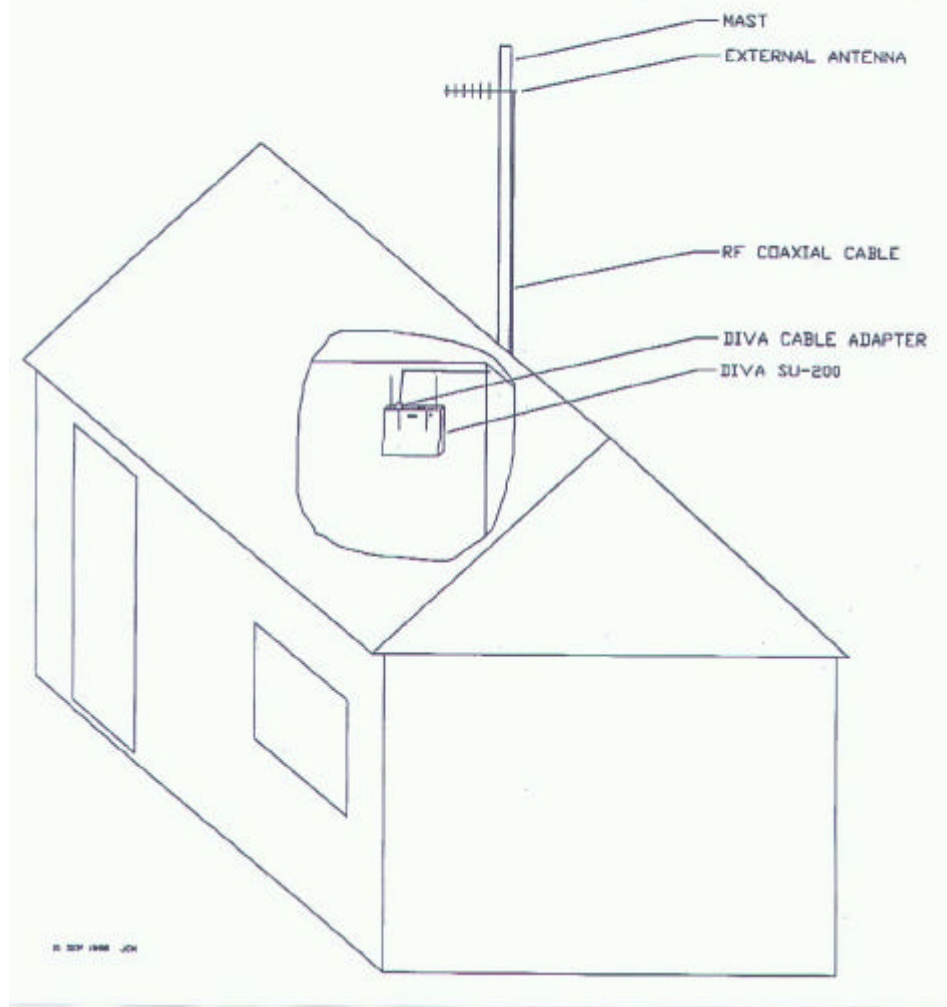
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