

Addendum to explain the numbers of transmitters and the Test ERP levels

Since the purpose of this application is to test three satellites, the numbers of transmitters that we have listed on the application are broken out by satellite as follows:

Optus (There are two satellites on this program, D1 & D2)

| D1: | Transmitter Part Number | Number of transmitters |
|-----|-------------------------|------------------------|
| | 2000HAI | 8 |
| | E8247C | 1*(8 Channels) |
| | UT-4514 | 1*(3 Channels) |
| | 0131958A03 | 2 |
| | 0138751A01 | 1 |

| D2: | Transmitter Part Number | Number of transmitters |
|-----|-------------------------|------------------------|
| | 2000HAI | 12 |
| | E8247C | 1*(12 Channels) |
| | UT-4514 | 1*(3 Channels) |
| | 0131958A03 | 2 |
| | 0138751A01 | 1 |

| PAS-11: | Transmitter Part Number | Number of transmitters |
|---------|-------------------------|------------------------|
| | 2000HAI | 17 |
| | E8247C | 1*(17 Channels) |
| | UT-4514 | 2*(2 Channels) |
| | 0131958A03 | 2 |

| Horizons-2: | Transmitter Part Number | Number of transmitters |
|-------------|-------------------------|------------------------|
| | 2000HAI | 19 |
| | E8247C | 1*(19 Channels) |
| | UT-4514 | 1*(2 Channels) |
| | 0131958A03 | 2 |
| | 0138751A01 | 2 |

* There is only 1 E8247C and 1 UT-4514 that we have for testing purposes, but they have multi-channel capability. We only need 1 each since only one satellite will be tested at a time.

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The second issue is the test ERP that relates to the 2000HAI TWTA's. The breakdown is as follows:

Optus (D1 & D2):

| Xponder Power (Watts) | Ant Gain (dB) | Chamber Atten (dB) | Bldg Atten (dB) | System Losses (dB) | ERP (dBw) |
|-----------------------|---------------|--------------------|-----------------|--------------------|-----------|
| 150 | 35.15 | 50 | 20 | 2 | -15.09 |
| 125 | 38.64 | 50 | 20 | 2 | -12.39 |
| 44 | 44.26 | 50 | 20 | 2 | -11.31 |

PAS-11:

| Xponder Power (Watts) | Ant Gain (dB) | Chamber Atten (dB) | Bldg Atten (dB) | System Losses (dB) | ERP (dBw) |
|-----------------------|---------------|--------------------|-----------------|--------------------|-----------|
| 150 | 37.52 | 50 | 20 | 2 | -12.72 |

Horizons-2:

| Xponder Power (Watts) | Ant Gain (dB) | Chamber Atten (dB) | Bldg Atten (dB) | System Losses (dB) | ERP (dBw) |
|-----------------------|---------------|--------------------|-----------------|--------------------|-----------|
| 150 | 36.34 | 50 | 20 | 2 | -13.90 |

I have amended the frequency chart (Attached as a second amendment) to reflect these more accurate values. I did not change the Horizons-2 Test ERP since the new figure was lower than the previously stated value.

Finally, be advised that although the emissions of the uplink and downlink transponder channels are CW, we will be taking measurements across each stated transponder channel band in order to characterize each channel. In other words we need to have permission to emit anywhere within each channel band.