DCPRS POWER

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Proposed Power Limits (1)

- EIRP is 50 to 53 dBmi for 1200 bps links
- EIRP is 47 to 50 dBmi for 300 bps links
- Implementing these limits will require some form of adjustment for the transmitter output level
- System performance would be better if:
  - Permitted power variation was less
  - Level measured at satellite input, not transmit output
- Lower transmit levels would require less input power, but difficult to make change
- All are reasons for improved power control

Proposed Power Limits (2)

- The proposed minimum limit cannot be met by some platforms that use omni antennas
- If system usage expands as expected:
  - Platforms below specified limits will eventually have a low share of the downlink power at all times
- Calculations are uncertain near full usage because of rough estimates for:
  - Total power of all uplinks
  - Relative level in the adjacent channels
  - Intermodulation in the satellite transponder
- Reduction of total uplink power is desirable but will be difficult to implement

Transmit Power Changes

If the transmit power must be adjustable, then:

- Where should changes be made?
  - Before installation
  - On-site
  - Remotely
- Who should be able to make changes?
  - Installer/maintainer
  - User
  - NOAA
- What is the (rough) relative cost of each?

Possible Power Reduction Process

- Measure all uplink powers relative to pilot and calculate average
- Notify all users of this average level
- Get 1200 bps users to reduce to avg. level
- Get 300 bps users to reduce to avg. -3 dB
- Repeat until desired level is reached
- ALL users would need to cooperate over the full adjustment period (months or years) unless remote power control is made mandatory

Factors to Help Reduce EIRP

- All DCPRS must have power adjustment
- NOAA must have accurate measurement capability for every DCPRS power level
- Low cost DCPI link able to set the transmit power level by remote control
- Rewrite CS subsection 4.1.1