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Prepared by CMA
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The Evaluation of Using Higher Speed IDCS of FY-2

Summary and purpose of paper

This paper describes that FY-2 system can meet the S/N requirement for transmitting 300bps DCP signal

The Evaluation of Using Higher Speed IDCS of FY-2

The results of link test of FY-2 A shown that the link of FY-2A can meet the signal/noise requirement for transmitting 300bps signal of DCP.

EIRP of DCP	46dBm
G/T of satellite UHF receiver	-17.22 dB/K
DCP EIRP of satellite down link	21.3dBm
G/T of CDAS	28.4 dB/K
C/N ₀ of received DCP signal in CDAS	50.0 dB Hz

The C/N₀ value of DCP signal received in CDAS is 50.0dBm. If the link is used for transmitting 300bps signal, the C/N value can reach to 22.2dBm. It means the demodulator still has a margin. So from the requirement of communication link, the DCP system of FY-2A satellite is able to transmit the 300bps signal.

At present, the FY-2 system is just suitable for the self-timing and random alarm modes. The design of CDAS/IDCS device is based on 8bit and 100bps speed. If it is used for receiving 300bps signal, the receiving device must be modified and some budget investment should be needed.

As NOAA had made a DCPRS certificate standard for the 300/1200bps transmission of GOES/DCP, China also had a DCP certificate standard for the FY-2 system, which is used for the quality control of the DCP device. This DCP certificate standard is similar to those of GOES DCP, it makes the FY-2 system to have a technical basic for transmitting IDCS signal.

As for the transmission of 1200bps DCP signal, the evaluation has not made.