AIRBORNE IR LINE SCANNER DATA SYSTEM
AT THE CANADA CENTRE FOR REMOTE SENSING

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The Canada Centre for Remote Sensing (CCRS) has two DAEDALUS analog line
scanners in the CCRS aircraft. The spacial
resolution is 2.5 milliradians for the
8 to 14 u meter sensor and 1.7 milliradians
for the 3 to 5 u meter sensor. Each has
black body references for quantitative
data processing.

The scanner analog video and sync
data are recorded on wide band FM Group
II amplifiers on a MINCOM tape. The
record speed is 30 IPS for 2.5 milliradian
resolution and 60 IPS for 1.7 milliradian
resolution due to upper cut off frequency
of the FM Group II amplifiers.

The hardware data recovery system
developed by CCRS provides either Universal
Imagery Format digital computer com-
patible tape or continuous strip colour
film with quantitative temperature colour
assignments. The scanner analog video
data is digitized on an 8 bit analog
to digital converter. The digitization
of black bodies and video are controlled
by the scanner sync track. The film is
produced on a CCRS built film recorder.

The video data can be digitized in
three modes. First in a constant A/D
mode where the sampling frequency is
selectable. To remove panoramic distor-
tion two fixed modes of non-linear A/D
are provided using a Binary Rate Multiplier
control. The 2.5 milliradian resolution
data is digitized to 1024 pixels per scan
line with a nadir frequency of 120KHz.
The 1.7 milliradian resolution data is
digitized to 2048 pixels per per scan line
with a nadir frequency of 240KHz.

The user can process CCTs interactive-
ly on-line on a colour video display or
colour film products may be provided.

The interactive software includes
a cursor area location which uses the
black body references to provide quanti-
tative temperature reading together with
the area in the cursor.

The most recent interactive software
provides a colour density slicing for
displayed images. The temperature
slicing is in .5 degree increments with
a maximum of 24 increments available.
Colour film has provided users with infor-
mation for land use and moisture content.
The system has also been successfully
used for determining heat loss from
central heating system piping complexes
as well as building roof heat loss areas.

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