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EARPOP

HANDLE VIA BYEMAN
CHANNELS ONLY

BYE-1239-68
SORS 11./16
31 Jan 1968

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U N I T E D S T A T E S I N T E L L I G E N C E B O A R D
S I G I N T C O M M I T T E E

SIGINT OVERHEAD RECONNAISSANCE SUBCOMMITTEE

MEMORANDUM FOR MEMBERS OF THE SIGINT OVERHEAD
RECONNAISSANCE SUBCOMMITTEE

SUBJECT: Technical Description of the Special Signal
Detector for MULTIGROUP III - Mission 7163

The Technical Description of the Special Signal Detector for
MULTIGROUP III - Mission 7163 has been provided to the SORS by
the NRO and is distributed herewith for your information.

[Redacted Signature Box]

50X1

EXECUTIVE SECRETARY

Enclosure:
a/s

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GROUP 1
Excluded from automatic
downgrading and
declassification

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CONTROL SYSTEM

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SPECIAL SIGNAL DETECTOR (SSD)

One SSD is utilized to operate with all four receivers. The SSD has separate frequency, pulse amplitude and two pulse width thresholds for each receiver as listed below.

<u>Band</u>	<u>PW-1 (usec)</u>	<u>PW-2</u>	<u>PA (dbm)</u>	<u>Frequency (MHz)</u>
3	PA-2 -50 dbm	2.5 msec	-65	Full Band
4	8.5	60 usec	-55	Full Band
5	1.5	10 usec	-70	1800-2100 with PW-1 only Full Band with PW-2 only
6	1.3	7.0 usec	-70	3130-4200 with PW-1 only Full Band with PW-2 only

The SSD analyzes the signal high level video from the receiver that is on and scanning. When an incoming signal exceeds the selected PW and PA threshold and is in the frequency window, an alarm is generated and commands the PLC to stop scanning. If the incoming PW exceeds 24 ms, the CW lockout circuit resets the alarm and blanks the incoming signal to the SSD for a 1/2 pass band delay before it can alarm again.

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PAGE 1 OF 2 PAGES

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If the PW of incoming signal does not exceed the CW lockout reset, then the SSD generates the final alarm which conditions the payload and the DSU as follows:

1. Starts a 30 sec (nominal) lock-on time.
2. Commands Data Handler to process PW from SSD instead of Accept Gates for parameter and VLM measurements
3. After a two-second delay commands the DSU ON.

After the 30 second lock-on time, or when CW is measured, the SSD allows the PLC to scan but continues to blank itself until a 1/2 pass band delay has elapsed,

Once the SSD unblanks, it starts to analyze the incoming signals again for an alarm condition. If no alarm occurs within 100 ms, then a DSU OFF command is initiated. If an alarm occurs within 100 ms, the DSU OFF command is inhibited and the operate starts from the beginning except the DSU will be ON.

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PAGE 2 OF 2 PAGES