ALERT DATA FORMATS

ASCII

```
SAAAA1101E   SAAAA1101E   SDDDD1101E   SDDDD1101E
     └──┘         └──┘         └──┘         └──┘
  Fixed Bits   Fixed Bits   Fixed Bits   Fixed Bits
```

***A**ddress range = 0 - 255*
***D**ata range = 0 - 255*

BINARY

```
SAAAAAA10E   SAAAAAA10E   SADDDDD11E   SDDDDDD11E
       ⌴            ⌴            ⌴            ⌴
  Fixed Bits   Fixed Bits   Fixed Bits   Fixed Bits
```

***A**ddress range = 0 - 8191*
***D**ata range = 0 - 2047*

ENHANCED

```
SAAAAAA11E   SAAAAAADDE   SDDDDDDDDE   SDBCCCCCCE
       ⌴                                     └──┘
  Fixed Bits                            CRC Bits
```

***A**ddress range = 0 - 4095*
***D**ata range = 0 - 2047*

S = *S*tart bit
E = *E*nd bit

The fixed bits in the first byte of each 4 byte message determines the format type. The initial type bits, coupled with the remaining fixed or CRC bits are used to establish the integrity of the report.

ENHANCED FORMAT TEST RESULTS

Rigorous testing has revealed that the 6 bit CRC in the **enhanced** format is an inadequate substitute for the fixed bit sequence checks used in the **binary** format for identifying erroneous reports. Accommodation of the enhanced format in data collection software increase the percent of radio noise accepted as valid reports.

The improper identification of radio noise as a valid report in the enhanced format can be minimized by establishing more rigid time requirements for single report reception. Time reception criteria which more realistically mirror the data transmission characteristics of the radio in the ALERT gage. However, as the table below indicates, improvement based on increased time sensitivity still does not surpass the results of the old binary format.

Breakdown of good reports vs. bad reports by time

Time(ms)	<150	150	200	250	>250	Total
Good	1112	7	12	3	0	1134
Bad(enhanced)	11	30	31	18	27	117
Bad(binary)	7	0	1	2	1	11
Bad(ASCII)	1	0	0	0	1	2

A bad report is a report that is decoded as a valid ALERT message but upon inspection of the address and data values is determined not to have originated from an ALERT gage.