

# Technical Note



## 2030, 2040 and 2050 Series Memory Security



This document gives a full description of the types of memory devices contained in the 2030, 2040 and 2050 series signal generator and information on how to clear memory stores for when the instrument is removed from a secured application.

There are occasions where instruments are required to be used in a secured environment. This means that no test instruments can leave the area e.g. for calibration, unless all memory settings are erased.

This technical note describes the methods available to erase the memory settings in the 2030 series, 2040 series and 2050 series signal generators and then goes on to describe the types of memory used.

A full description of each memory type is given indicating which sub-assembly the device(s) is located with its reference designator. A brief description of the contents of the device(s) is given. The statement of volatility indicates where memory is maintained or lost during power-down. The statement of accessibility indicates whether or not the memory can be accessed, either by a user or service personnel.

### Clearing memory stores

The memory can be cleared manually by unlocking the instrument to level 1, entering the level 1 password (default 1234), pressing [MEM] then [Store Erase].

This will give the following choices:

- [Full Store]
- [Partial Store]
- [Carrier Store]
- [Seq. Tone Store]
- [Sweep Store]
- [Entire Store]

Alternatively, remotely you can send the commands:

- :full (full stores only)
- :part (partial stores only)
- :cfreq (carrier freq stores only)
- :seqt (sequential tone stores only)
- :sweep (sweep stores only)
- :all (all stores are cleared)

### Memory types

Located on the main control board (AA1/x), except where indicated, are the following:

Description	EPROM Qty. 2, 27C2001, 256 kbytes x 8 (2 Mbits): IC109, IC111 Qty. 1, 27C512, 64 kbytes x 8 (512 kbits) located on AF2/x front panel i/f board: IC12
Volatility	Non-volatile UV erasable memory
Contents	Operating firmware for the instrument
Accessibility	Non-user accessible

Description	EPROM Qty. 1, 27C4002, 256kbytes x 16 (4Mbits): IC202 (or AA2 avionics daughter board on instruments fitted with option 6)
Volatility	Non-volatile UV erasable memory
Contents	Modulation oscillator waveforms (+ avionics waveforms is option 6 is fitted)
Accessibility	Non-user accessible

Description	RAM Qty. 1, HM628128, 128 kbytes x 8 (1Mbit): IC120 Qty. 1, HM6264, 8 kbytes x 8 (64 kbits) located on AF2/2 front panel i/f board: IC15
Volatility	Volatile memory. Content is lost on power-down.
Contents	Used during power-up to store instrument settings and other volatile information.
Accessibility	User accessible

Description	EAROM all instruments except those with option 8: Qty. 1, 28C64, 8 kbytes x 8 (64 kbit): IC114 instruments fitted with option 8: Qty. 1, 28C256, 32 kbytes x 8 (256 kbits): IC114
Volatility	Electrically alterable non-volatile memory. Content is retained at power-down but may be changed as required.
Contents	i) Calibration data ii) Memory store settings (for instruments fitted with option 8, this would include the RF profiles configs.) (see "Clearing Memory Stores" below) iii) Instrument configuration settings (e.g. GPIB address, RF level units) iv) Instrument ID (serial number, type number, option configuration etc.)
Accessibility	Calibration data is non-user accessible but may be accessed by service personnel via a level 2 password or via GPIB commands published in the service manual. Memory stores and instrument configuration settings are user-accessible. Instrument ID information is protected by a special password which can only be obtained on request from Aeroflex UK operation in Stevenage.

Located on the attenuator control board AT11/x IC4:

Description	EAROM Qty. 1, 93C46, 64bytes x 16 (1 kbit)
Volatility	Electrically alterable non-volatile memory. Content is retained at power-down but may be changed as part of factory calibration.
Contents	Attenuator ID/cal data
Accessibility	Non-user accessible. Factory calibrated module.

The 2030 series with option 5, 2030 series with options 9 and/or 10, 2040 series and 2050 series have an additional RF tray which, in each case, contains a serial EAROM in the following locations:

AE1 data generator board (2030 Series Option 5): IC5

AJ1 pulse generator board (2030 Series Option 9/10): IC9

AC1/x output loop board (2040 Series): IC5

AG1 interface board (2050 Series): IC5

Description	EAROM Qty. 1, 93C46, 64 x 16 (1 kbit)
Volatility	Electrically alterable non-volatile memory. Content is retained at power-down but may be changed as required.
Contents	Tray ID (serial number, tray ID flag) Calibration data
Accessibility	Calibration data is non-user accessible but may be accessed via a level 2 password or via GPIB commands published in the service manual.

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