

Replacement of integrated circuit 24C02 or 8582

Introduction

IC 24C02 and IC 8582 are now obsolete, but may still be supplied as replacement ICs. IC 24C02, IC 8582 and IC 24WC02 are used interchangeably in the Codan products listed in [Table 1](#). However, IC 24WC02 is not a plug-in replacement for IC 24C02 and IC 8582. If you are replacing an IC 24C02 or IC 8582 with an IC 24WC02, the associated pull-up resistor *must* be removed (see [Table 4](#)). If you are fitting an IC 24C02 or IC 8582, *do not* remove the resistor.

Table 1: Affected products

Product	Description
8580	ARQ modem
9001	HF fax and data interface
9002	HF data modem
9600	ALE controller
9105 (X2)	Transceiver
8525/8528/9313/9480	Transceiver
8570	Remote control console
8571	Remote control interface

Function of ICs 24WC02, 24C02 and 8582

The function of ICs 24WC02, 24C02 and 8582 vary depending on the equipment they are used in. [Table 2](#) lists the function of the ICs in the various units.

Table 2: Function of ICs 24WC02, 24C02 and 8582

Unit	Function
8580, 9001, 9002	Stores user-defined parameters, e.g. station addresses
9600	Stores configuration parameters
9105 (X2)	Stores channel information, e.g. transmit and receive frequencies
8525/8528/9313/9480	Stores programmable channels (P-channels) and configuration parameters
8570, 8571	Stores configuration parameters, e.g. equalisation settings

Symptoms

The symptoms listed in [Table 3](#) may occur when IC 24WC02, IC 24C02 or IC 8582 have been fitted. The symptoms relate to which IC you have fitted and whether or not the pull-up resistor is required.

Table 3: Symptoms of the affected units

Unit	Symptoms
8580	The unit does not save the new 'My Station Address' after it has been changed using the 9102 Fax and Data Controller Software (see <i>Chapter 2, Starting 9102</i> in the <i>9102 Fax & Data Controller User Guide</i>)
9001, 9002	If using 9102 Fax and Data Controller Software: <ul style="list-style-type: none"> the unit does not save the new 'My Station Address' after it has been changed (see <i>Chapter 2, Starting 9102</i> in the <i>9102 Fax & Data Controller User Guide</i>) If using AT commands: <ul style="list-style-type: none"> an error message is displayed when you use the AT&W command to write the profile to the IC
9600	The unit does not function and requires re-initialisation at a Codan Service Centre
9105 (X2)	The unit cannot read the channel information from the IC, causing error beeps to be emitted

Table 3: Symptoms of the affected units (cont.)

Unit	Symptoms
8525/8528/9313/9480	The unit cannot read the configuration parameters from the IC, causing certain functionality to be disabled (this varies depending on the transceiver type, e.g. 8528S or 8528I, 9313 etc)
8570, 8571	The units do not save the equalisation or system settings

Action



Take careful note of the type of IC you have been supplied as a replacement (IC 24C02, IC 8582 or IC 24WC02).

If you are replacing an IC 24C02 or IC 8582 with another IC of the same type, replace the IC as you would normally but *do not* remove the pull-up resistor.

If you are replacing an IC 24C02 or IC 8582 with an IC 24WC02, continue from [Replacing an IC 24C02 or IC 8582 with an IC 24WC02](#).

Replacing an IC 24C02 or IC 8582 with an IC 24WC02

On each of the PCBs listed in [Table 4](#) there is a pull-up resistor connected from pin 7 of IC 24C02 or IC 8582 to the +ve rail. This pull-up resistor *must* be removed.



If the pull-up resistor is not removed, the circuit will not operate correctly.

To replace IC 24C02 or IC 8582:

- Switch off the power to the system.
- Disconnect the affected unit from the system.
- Remove the cover.
- Use [Table 4](#) to identify the PCB, IC and its associated pull-up resistor. View the silk screen on the PCB to locate the IC and resistor.

For further details, see the associated Technical Service Manual for the unit.

Table 4: Location of the IC and pull-up resistor

Affected product	PCB part number	Description	IC	Pull-up resistor	Resistor value (kΩ)
8580	08-03706-001	Microprocessor and Control PCB	IC10	R23	56
9001/9002	08-04826-001	DSP Modem	IC14	R15	56
9600	08-04826-003	DSP Modem	IC14	R15	56
9105 (X2)	08-04840-001	Receiver/Exciter and Control PCB	IC404	R422	56
8525/8528/ 9313/9480	08-03741-001	Microprocessor and Interface PCB	IC16	R33	56
			IC17	R34	56
8570	08-03978	Microprocessor and Display PCB	IC11	R34	56
8571	08-03993	Microprocessor and Interface PCB	IC8	R43	56

- Desolder and remove the IC and resistor.
- Insert and solder the replacement IC 24WC02 into position.
- Replace the cover.
- Reconnect the unit to the system.
- Switch on the power to the system.



If you are replacing an IC 24WC02 with an IC 24C02 or IC 8582, ensure that you insert the associated pull-up resistor as shown in [Table 4](#). The resistor connects pin 7 of IC 24C02 or IC 8582 to the +ve rail. If the resistor is not inserted, the units will fail.

Testing the system

The following tests should only be used as basic guidelines. Thorough testing is recommended. For further details, refer to the relevant manuals and user guides.

Modems 8580, 9001 and 9002

To test the modems:

- Use the 9102 Fax and Data Controller Software to change your station address (see *Chapter 2, Starting 9102* in the *9102 Fax & Data Controller User Guide*).

The new address is written to the IC.

- Establish a link between two modems.

If a link is established after changing your address, the modification is successful.

Transceiver 9105

To test the transceiver:

- Ensure the transceiver changes channels correctly and does not emit error beeps.

Transceivers 8525/8528/9313/9480

To test the transceivers:

- Program a scan table (see *Using the receiver in scan mode* in the Operators handbook specific to the version of your transceiver).

If the transceiver scans the channels programmed in the scan table, the modification is successful.

Remote Controllers 8570 and 8571

To test the remote controllers:

- In Setup Mode, use Function 20 to re-equalise the 2-wire or 4-wire lines in the remote control system (see *Chapter 6, Setup functions and options* in the *8570 and 8571 Remote Control Installation Handbook*).
- Use Function 21 (Line equalisation parameters) to check the saved parameters (see *Chapter 6, Setup functions and options* in the *8570 and 8571 Remote Control Installation Handbook*).

If the parameters are saved, the modification is successful.