

CMC Calibration

The CMC boards have been checked; test point use are velocity signal and the error signal see [here](#). The reference board is the one labelled CMC-1 (which is the one used before). The speed signal for several runs is shown [here](#) and a zoom is shown [here](#). The error signal for several runs is shown [here](#) and a zoom is shown [here](#). Note that the error is not symmetric around 0.

Tests on the spare board (CMC-2) shows that the speed signal has some extra noise at about 2/3 of the path, and that this noise depends on the movement direction (see [here](#)). The CMC-2 board after this test was upgraded, that is all resistor packs, trimmers etc. were set to the same values as found in the CMC-1 board. Same test run again shows that the extra noise disappears (see [here](#)).

For completeness we show [here](#) also a sample of the error from CMC-2.

We have also checked the correspondence between the signal (error) and the bit value read from the position. This was done using the following procedure:

1. run the instrument
2. stop it going to zero
3. read the signal on the test point and the position from telemetry
4. move by hand the carriage for a small distance (small enough not to overflow the 12 bit telemetry counter)
5. read the signal on the test point and the position from telemetry
6. from the reading evaluate the correspondence analog - digital

A preliminary estimate suggest that the correspondence should be as follows:

- digital signal: 12 bits (4096)
- DAC converter $10\text{ V} = 10000\text{ mV}$
- $1\text{ bit} = 10000/4096 = 2.5\text{ mV}$

These values were confirmed by the test.

19/1/2002

CPL #1

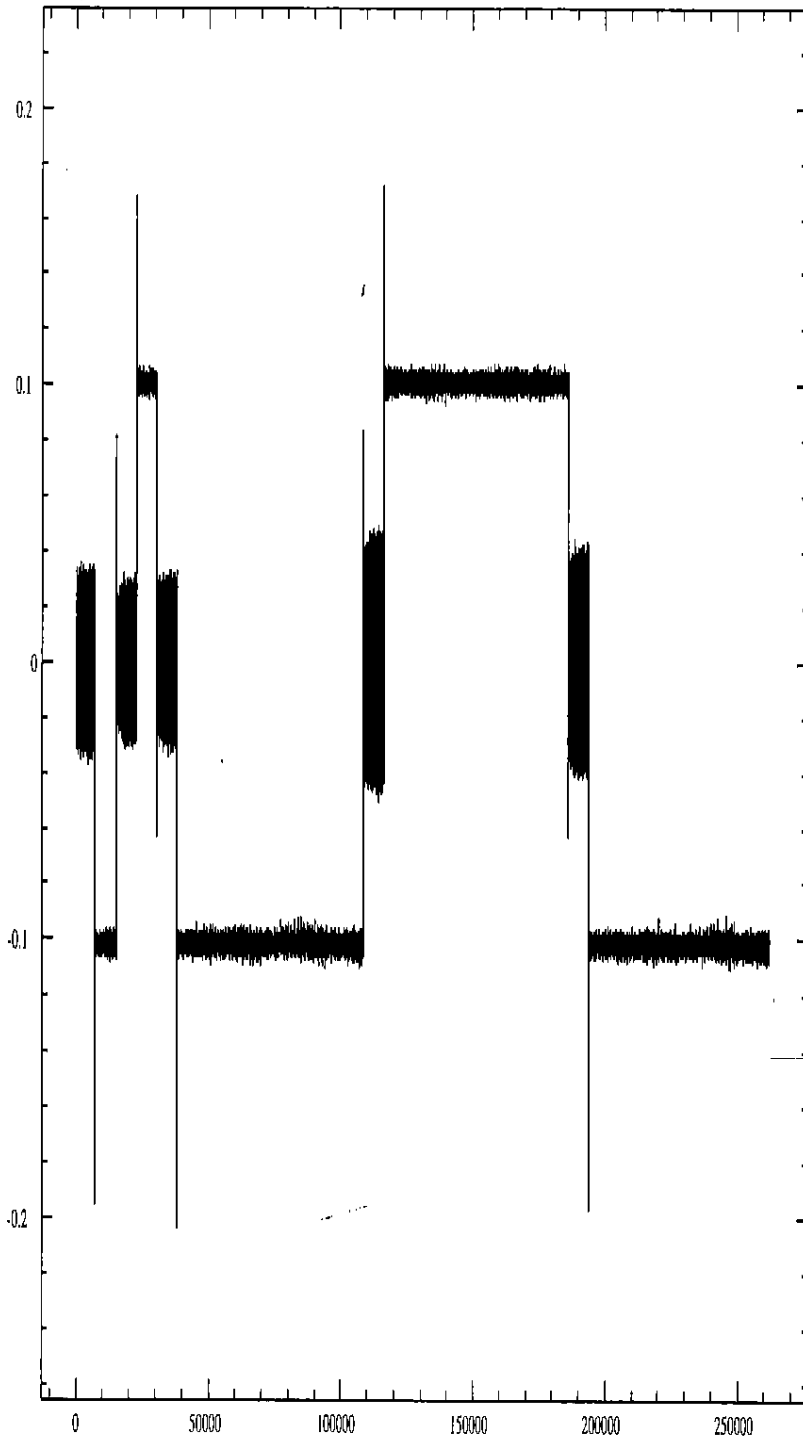
xlook-y1 CMCIVEL.DAT

0101

I.R.O.E. - IR

X25V

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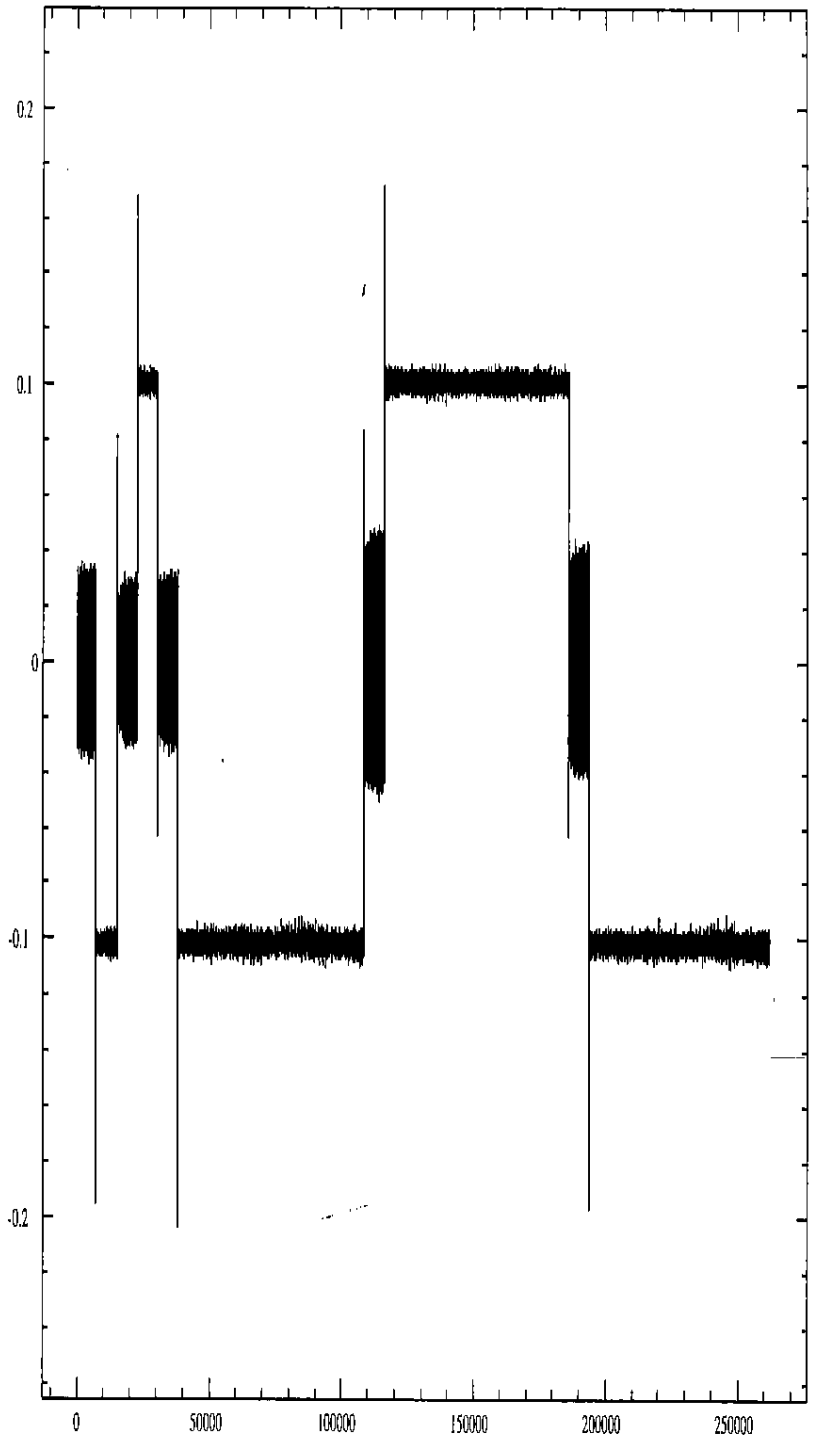
01

xlook-y1 CMCIVEL.DAT

19/1/02

CNC #1

X25v

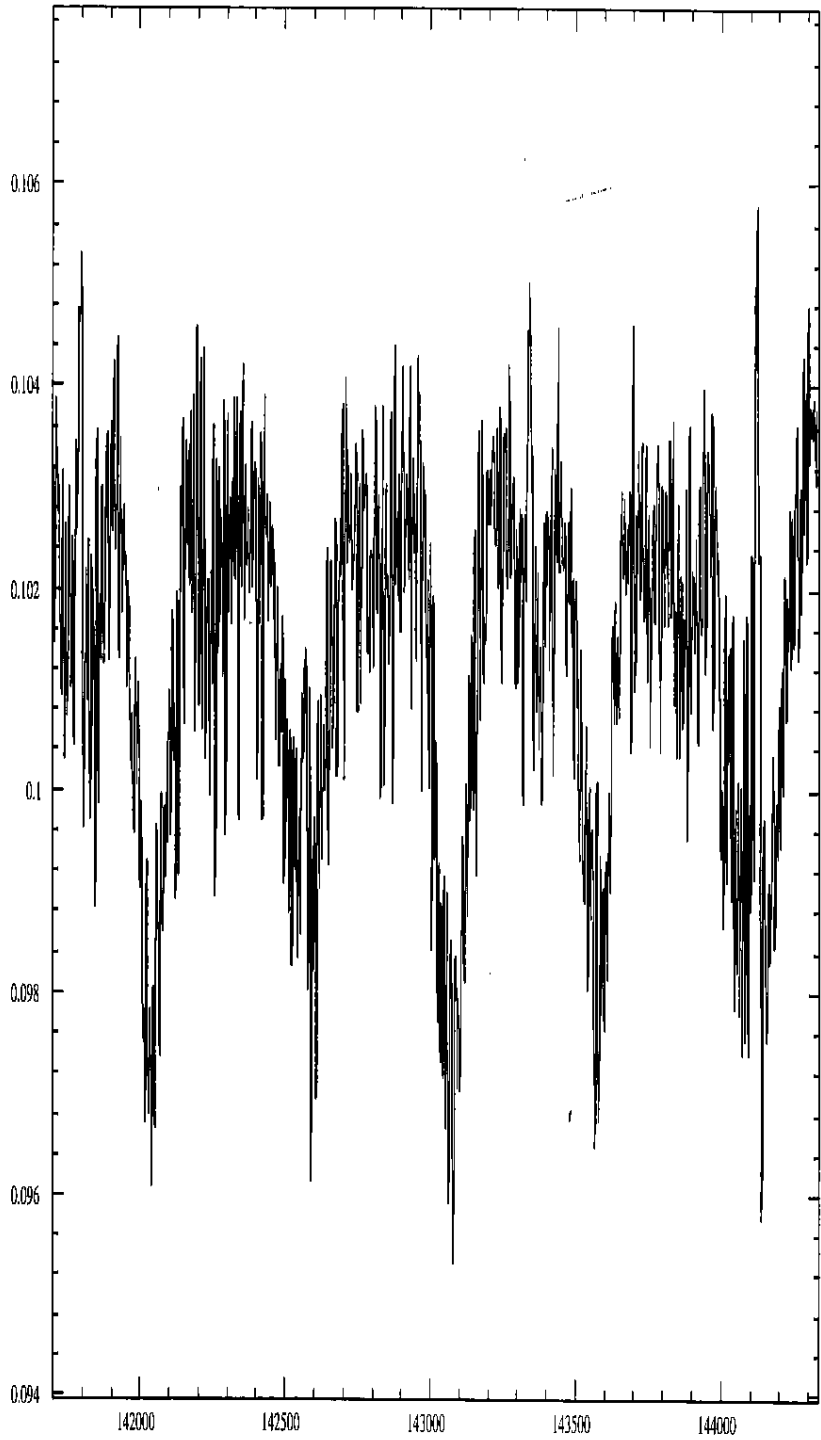


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01

xlock-y1 CMCI.VEL.DAT

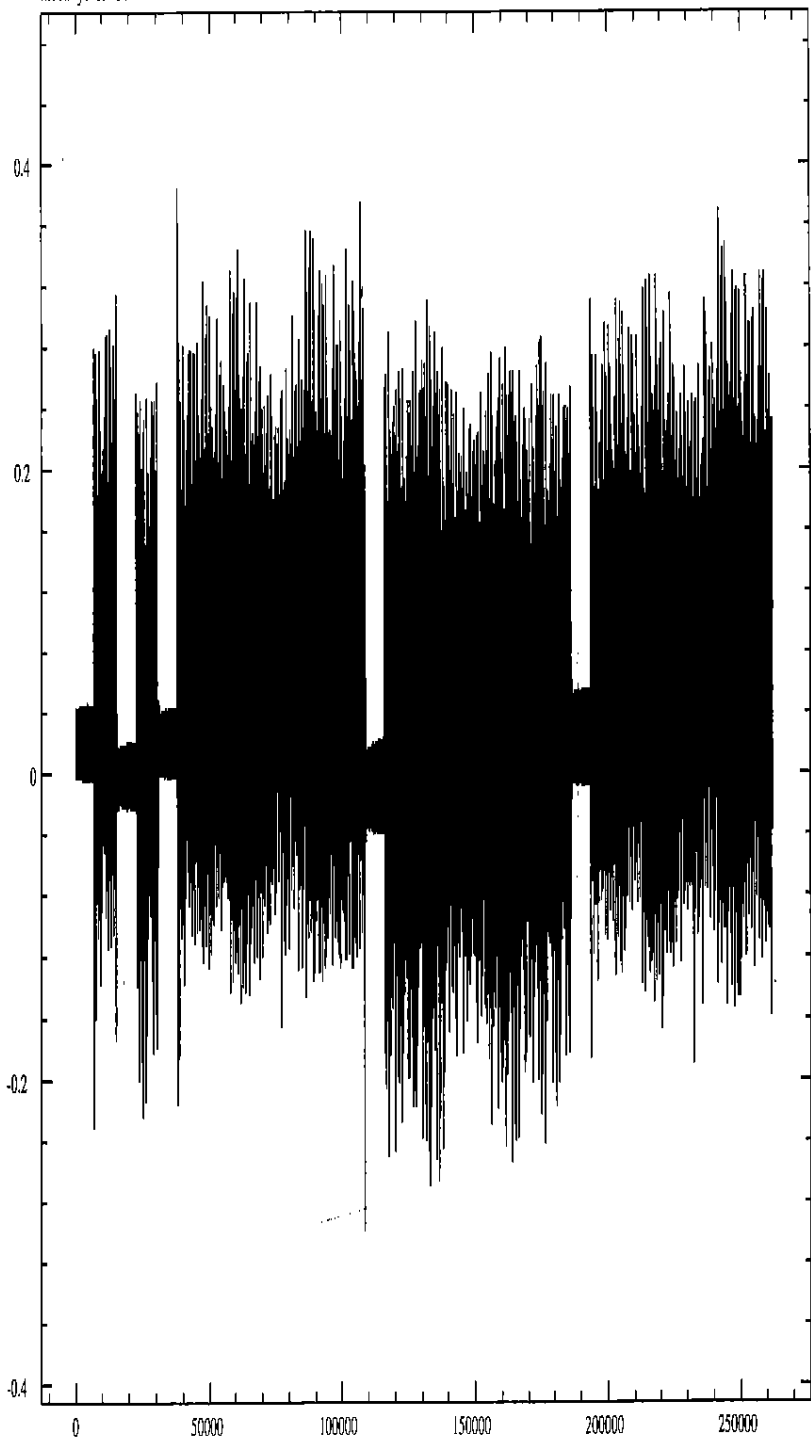
XZSV



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xlook-y1 CMCIERR.DAT

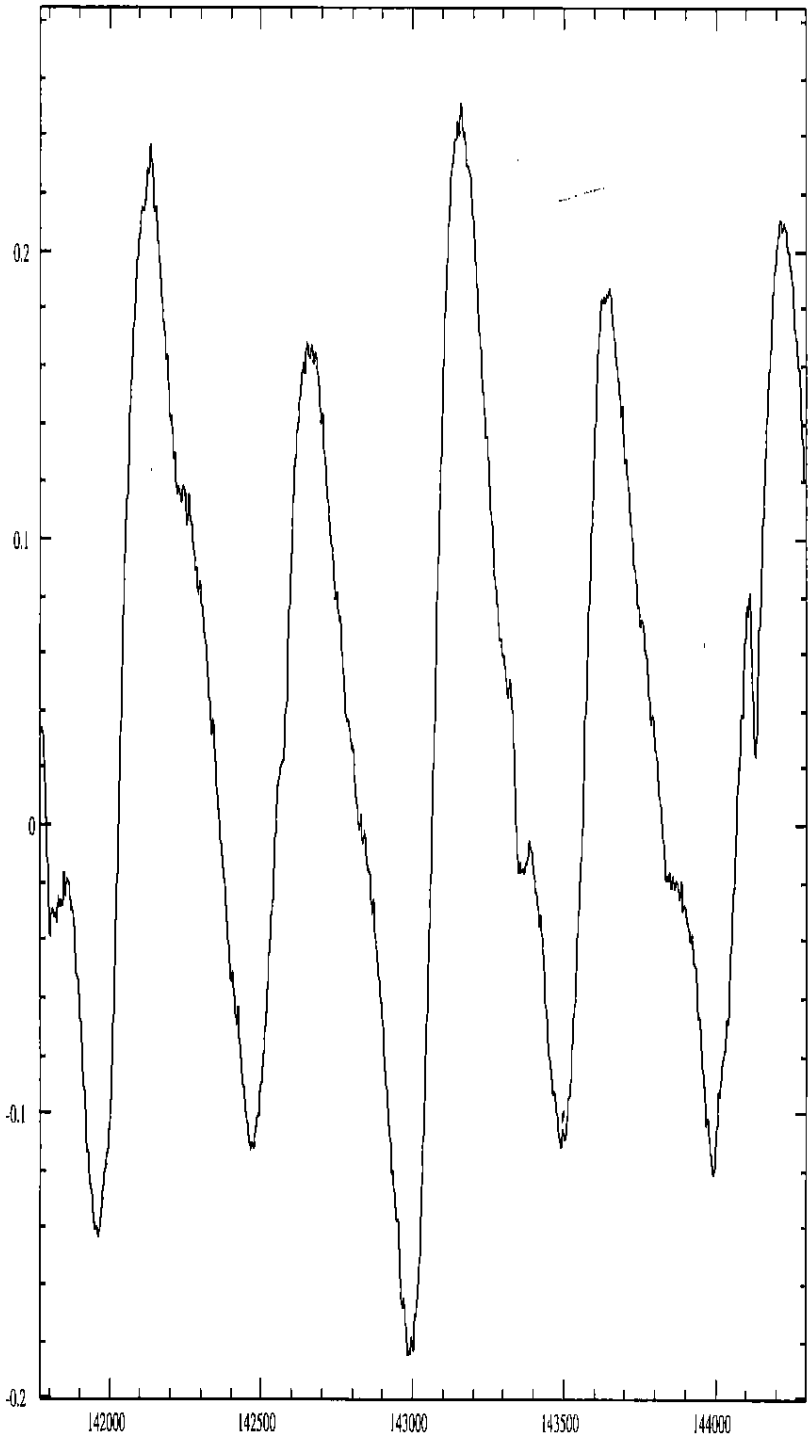
X S V



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xlook-yl CMC1ERR.DAT

X 5v



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X 25V

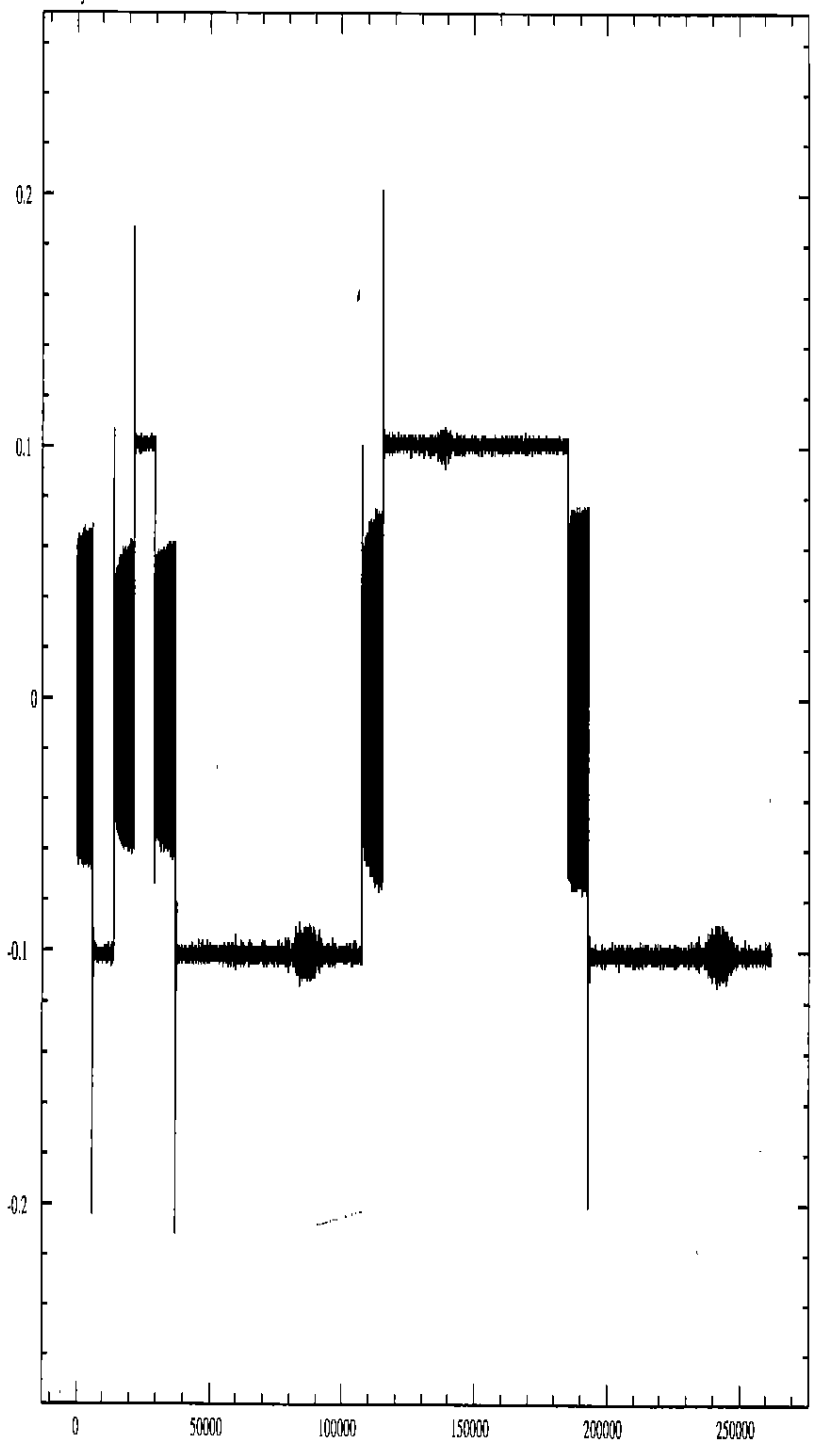
xlook-yl CMC2VEL.DAT

19/2/2002

CNC #2

(S/M/E)

PIVA DECA
"CURA"



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01

xlook -yl CMCZVELB.DAT

20/2/2002

CNC #2

(SPARE)

DOPO "CORA"

XZSV

