

DATE: 10 MAR 1985

FROM: BROOKE J. CLARKE

N6GCE

TO: HEATH COMPANY
TECHNICAL SERVICES MANAGER
BENTON HARBOR, MI 49022

DEAR SIR:

THANK YOU FOR SENDING ME (FREE OF CHARGE) A NEW ROM FOR MY GC-1000 MOST ACCURATE CLOCK. SOME REFERENCE NUMBERS ARE AS FOLLOWS:

OLD ROM MARKINGS	NEW ROM MARKINGS
MOSTEK 8332	MOSTEK 8446
MK3870/20	MK3870/20
MK14760N-5	MK147776N-5
MALAYSIA	MALAYSIA
444-200	444-293
INVOICE #	50102985501
DATE	01/24/85

I INSTALLED THE ROM IN EARLY FEBRUARY. WHEN FIRST INSTALLED, THE OUTPUT FREQUENCY WAS 3,599,932.9 HZ WHICH IS ABOUT THE NUMBER OF DIGITS THE OLD ROM PROVIDED. I GOT BUSY DOING OTHER THINGS AND RECENTLY MEASURED THE OUTPUT FREQUENCY AND FOUND IT TO BE 3,600,000.0 !!! I HAVE BEEN LOOKING AT THE FREQUENCY COUNTER FOR THE LAST FEW DAYS AND THE LARGEST DEVIATION HAS BEEN 1.1 HZ. THE NEW ROM IS DOING A GREAT JOB OF KEEPING THE XTAL ON FREQUENCY.

TIME AND FREQUENCY IS ONE OF MY HOBBIES AND THERE ARE SOME THINGS THAT WOULD MAKE THIS CLOCK MUCH BETTER. FIRST, THE HOURS DIGIT WAS OFF BY A FULL HOUR THE LAST TIME WE CHANGED FROM DAYLIGHT SAVINGS TO STANDARD TIME. MY PHONE CONVERSATION WITH YOUR TECHNICAL DEPARTMENT GAVE ME THE IDEA THAT THE CLOCK MAKES THE ONE HOUR JUMP WHEN WWV JUMPS, RATHER THAN AT 2:00 AM LOCAL TIME (FOR LOCAL TIME READOUT). SINCE THE DAYLIGHT SAVINGS TIME FUNCTION CAN BE TURNED OFF VIA DIP SWITCH I ASSUME THAT UTC TIME IN 24 HOUR FORMAT WILL HAVE NO PROBLEM. IT

WOULD BE MUCH BETTER IF THE CPU DID NOT MAKE THE ONE HOUR SWITCH UNTILL 2:00 AM LOCAL TIME. NOTE THAT IT KNOWS THE LOCAL TIME.

SECOND, THE CLAIM TO 5 MILLISECONDS ACCURACY IS QUESTIONABLE BECAUSE THERE IS NO WAY TO CONFIRM THE ACCURACY. I PLAN TO ADD SOME LOGIC TO THE DISPLAY TO GENERATE A ONE PULSE PER SECOND OUTPUT SO THAT I CAN CHECK HOW ACCURATE THE CLOCK IS RUNNING. DO YOU HAVE A RECOMENDATION FOR THIS CIRCUIT? IF YOU ARE NOT PLANNING TO ADD A 1 PPS OUTPUT WHY BOTHER WITH THE PROPAGATION DELAY DIP SWITCHES?

THIRD, THE CPU KNOWS THE DATE BUT UNLESS I CONNECT A COMPUTER TO THE RS-232 PORT I DO NOT HAVE ACCES TO THE DATE. I WOULD LIKE TO HAVE THE (DIP SWITCH) OPTION OF AN ALTERNATING DATE/TIME DISPLAY.

THE CPU FOR THE RS-232 OPTION APPEARS TO BE THE SAME PART AS THE CLOCK CPU. IF THIS IS TRUE, THEN IF THEY WERE MADE TO BE DIFFERENT THERE WOULD BE ROOM IN ROM TO MAKE THE ABOVE IMPROVEMENTS. ALSO ONE OF THE PINS ON THE RS-232 CONNECTOR COULD BE USED FOR THE 1 PPS OUTPUT.

ON YOUR REPLY CARD 597-523 YOU ASK THREE QUESTIONS TO BE ANSWERED YES OR NO. I AM SATISFIED WITH THE QUALITY OF THE ASSISTANCE I RECEIVED DURING MY PHONE CALL BUT NOT WITH THE DISIGN OF THE GC-1000. THE NEW ROM CORRECTED ONE OF THE DIFFICULTIES BUT THE ABOVE REMAIN. MY CLOCK IS NOT NOW OPERATING PROPERLY BECUASE IS DOES NOT DISPLAY THE CORRECT LOCAL TIME (ON TWO DAYS EACH YEAR IT PROPABLY WILL BE OFF 1 HR).

THANK YOU

BROOKE J. CLARKE