

# MONOCHROME CHROME

MADE WITH PC AND ZX-81 32KB (ZXPRND) FOR LOGO AND TESTING SOFT  
ZX-81 / TIMEX 1000 / TIMEX 1500 MAGAZINE  
ISSUE 3, ADDRESS: YERZHYEY@INTERIA.PL, 09.2012 (AUTUMN)

YERZHYEY

ANDRE\*\*\*

## MAKING A MAGAZINE CAN BE EASY



HI GUYZ. YUPP, YOU WILL SUFFER MY ENGLISH LANGUAGE AGAIN. I MUST ADMIT I NOTICED LATELY THAT PREPARING MAGAZINE ABOUT SOME OLD-SCHOOL PLATFORM **CAN** BE EASY. ;) IT CAN BE - AS LONG AS ENTIRE SCENE/COMMUNITY MAKES NEW STUFF FOR THE GIVEN PLATFORM - THEN PEOPLE HAVE MATERIAL TO WRITE **ABOUT**. ;) AND THAT CASE WAS THIS TIME. THERE ARE MANY NEW THINGS FOR ZX81 LAST TIMES (AGAIN!) AND ALL

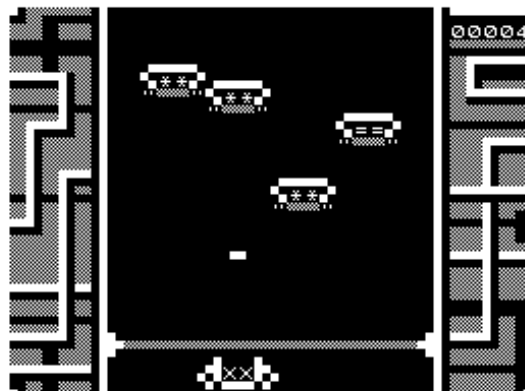
OF THIS THANKS TO YOU ALL! AND IT IS NOT ONLY FOR DEVELOPED CONFIGURATIONS, BUT ALSO FOR UNEXPANDED ZX81 MACHINES. AS USUAL I WOULD LIKE TO THANK EVERYBODY WHO SENT ARTICLES FOR THIS ISSUE OF OUR ZX81/T1000/T1500 MAG, AS WELL AS EVERYBODY WHO MAKES NEW SOFTWARE AND HARDWARE FOR THE MACHINE. ;) HMM, MAYBE I SHOULD CHANGE THE SUBTITLE, BECAUSE THOSE THREE MODELS ARE ACTUALLY NOT ENOUGH. ;) PEOPLE FROM BRAZIL ARE ACTIVE TOO AND THEY MADE A VERY INTERESTING ZONX-COMPATIBLE AY-INTERFACE FOR THEIR **MICRODIGITAL TK85** CLONE OF ZX81. ;) YOU CAN READ ABOUT IT FURTHER IN THE MAG. OK THEN, STOP THE BOLLOX AND LET US START. ;)

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## NEW 16K GAMES FROM **REVIVAL STUDIOS**

THERE APPEARED SEVERAL NEW ZX81 GAMES (FOR 16K RAMPACK) PREPARED BY **REVIVAL STUDIOS**. THOSE PRODUCTIONS ARE NOT FREE-OF-CHARGE - YOU WOULD HAVE TO ORDER THEM, WHICH IS POSSIBLE IN TWO VERSIONS: FULL GAME ON **CASSETTE TAPE** (7,99 EUROS), OR AS A DIGITAL DOWNLOAD (3,99 EUROS) BY EMAILING TO: SALES@REVIVAL-STUDIOS.COM

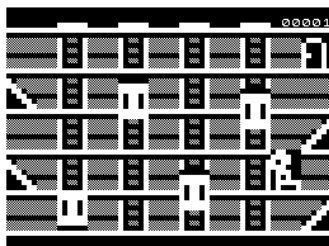
FIRST OF THEM IS "**AVALANCHE**". LIKE THE AUTHOR STATES, IT'S "A FUN ACTION GAME PEOPLE CAN JUST PICKUP AND PLAY". THE PLAYER HAS TO SHOOT THE VARIOUS GEMS THAT ARE FALLING DOWN FROM THE TOP OF THE SCREEN. THE GEMS ARE MARKED WITH SYMBOLS AND THE PLAYER HAS TO MATCH UP THE SYMBOL OF HIS SHIP WITH THE SYMBOL ON THE GEMS. SOUNDS NICE, I ADMIT. THE SPEED OF THE GAME WILL AUTOMATICALLY INCREASE DURING GAMEPLAY. SHOOT STRATEGICALLY AND GET COMBOS OF 4 SIMILAR GEMS IN A



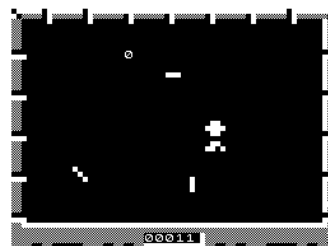
ROW TO DECREASE SPEED AND GAIN EXTRA POINTS. THE MOST IMPORTANT FEATURES OF THE GAME ARE: AVAILABLE ON TAPE AND AS DIGITAL DOWNLOAD, SUPPORT FOR AY SOUND-BOARDS, ZXPAND JOYSTICK INTERFACE SUPPORT. ALSO THE AUTHOR WRITES: "I WILL NOT MAKE ANYTHING ON PRODUCING THESE TAPES ON SUCH A SMALL SCALE, BUT I HOPE YOU WILL SUPPORT MY EFFORTS (VIA TAPE OR DIGITAL DOWNLOAD) TO SUPPORT NEW GAME DEVELOPMENT FOR THE ZX81 IN THE YEARS TO COME".



THE SAME PRICE AND AUTHOR ARE IN CASE OF "STAIRRUNNER" GAME. A DESCRIPTION IS FOLLOWING: "MEET CLIVE JUNIOR: INVENTOR EXTRAORDINAIRE. CLIVE JUNIOR FELT THE ELEVATORS IN HIS NEIGHBORHOOD COULD USE A LITTLE 'IMPROVEMENT'. WHILE EFFECTIVE FOR A WHILE, THE FUN DIDN'T LAST LONG, AS THE ELEVATORS ARE OUT OF CONTROL! IT IS UP TO CLIVE TO MAKE IT TO THE TOP OF EACH BUILDING AND RESTORE THE ELEVATORS TO THEIR ORIGINAL STATE!". THE GAME ALSO SUPPORTS AY-SOUND BOARDS AND ZXPAND JOYSTICK INTERFACE.



ANOTHER GAME FROM THE REVIVAL STUDIOS IS "MAYHEM". IT IS ABOUT THE SAME HERO THAT WE KNOW FROM "STAIR-RUNNER". INFO SAYS: "CLIVE'S LATEST INVENTION WENT TERRIBLY WRONG! IT EXPLODED



AND ALL KINDS OF PARTS ARE FLYING ACROSS THE ROOM! YOUR GOAL IS CLEAR AND SIMPLE: AVOID THE DEBRIS WHILE RUNNING AROUND AND PICKING UP PARTS TO GAIN POINTS!". REQUIREMENTS, SUPPORT OF INTERFACES AND PRICE ARE THE SAME LIKE ABOVE.

WELL, IT IS SURELY WORTHY TO CONSIDER - IT'S NOT EVERY DAY WHEN NEW GAMES FOR ZX81 APPEAR IN A NICE PHYSICAL FORM OF CASSETTE. WWW SITE OF THE PUBLISHER IS: [HTTP://TINY.PL/H4ZX8](http://TINY.PL/H4ZX8)

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## GAME HACKING

SINCE ZXPAND OFFERS THE OPTION OF JOYSTICK CONTROL FOR ZX81 SOFTWARE I THINK IT'S SUITABLE THAT I WRITE SOMETHING ABOUT HOW TO MAKE SOFTWARE WORK WITH THIS FEATURE. THE BASIC STEPS IN ADDING JOYSTICK CONTROL ARE THE FOLLOWING:

1. IDENTIFY THE AREAS OF THE PROGRAM WHICH ARE RELATED TO KEYBOARD READING
2. WRITE SOME PATCH CODE WHICH WILL FACTOR IN THE JOYSTICK DATA
3. PATCH THE GAME EXE

ITEM 1 IS POSSIBLY THE HARDEST AS THERE ARE A NUMBER OF WAYS IN WHICH A GAME CAN READ THE KEYBOARD:

- \* USE THE "LAST-K" SYSTEM VARIABLE
- \* READ THE HARDWARE DIRECTLY WITH IN() OPCODE
- \* CALL THE ROM ROUTINE
- \* USE INKEY\$ FROM BASIC OR MACHINE CODE

IF THE GAME USES THE LAST OPTION THEN THINGS ARE VERY SIMPLE: THE ZXPAND ROM HAS BUILT-IN SUPPORT FOR INKEY\$ SPOOFING. YOU CAN CONFIGURE WHICH KEY CORRESPONDS WITH A JOYSTICK MOVEMENT BY ISSUING THE FOLLOWING COMMAND: CONFIG "J=UDLRF". BY DEFAULT THE JOYSTICK WILL PRODUCE CURSOR KEYPRESSES AND '0' FOR FIRE WHEN USED WITH INKEY\$, WHICH CORRESPONDS TO THE FOLLOWING CONFIGURATION: CONFIG "J=76580". IS IT SOME COINCIDENCE THAT THIS SUITS "3D MONSTER MAZE"?? :)

FOR ALL OTHER PROGRAMS YOU'LL NEED SOME TIME AND A MAGNIFYING GLASS. TO FIND THE PART OF A MACHINE-CODE PROGRAM ASSOCIATED WITH INPUT YOU NEED TO LOOK FOR STRINGS OF PARTICULAR BYTES USING A

## HEX EDITOR:

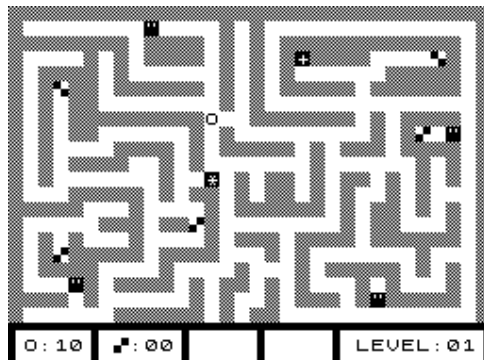
\* ACCESSES TO MEMORY AT \$4025 (LAST-K) - LOOK FOR \$25,\$40  
\* CALLS TO THE KEYBOARD READING FUNCTION - \$CD,\$BB,\$02  
\* IN() OPCODES - \$DB,\$FE OR ANY COMBINATION OF \$ED,  
(\$78,\$40,\$48,\$50,\$58,\$60,\$68) (THIS ONE IS HARD).  
ONCE YOU'VE IDENTIFIED THE LOCATIONS CONTAINING LIKELY CODE YOU  
NEED TO GET OUT AN EMULATOR. BREAKPOINTS SHOULD BE SET AT PLACES  
WHERE THE READS OCCUR. ONCE THE KEYBOARD CODE IS IDENTIFIED WITH  
SOME CERTAINTY YOU NEED TO DISASSEMBLE AND/OR STEP THROUGH IT AND  
WORK OUT HOW THE JOYSTICK CODE WILL SLIP ITS VALUES IN AND INFLU-  
ENCE THE ACTION. THE LAST-K VALUE AND THE RETURN FROM THE KEY-  
BOARD ROUTINE AT \$02BB ARE THE SAME. THE ARRANGEMENT OF BITS RE-  
LATES TO COLUMN/ROW NUMBERS WHERE KEYS ARE PRESSED. THIS WOULD  
REQUIRE ALMOST AN ENTIRE CHAPTER OF A BOOK TO EXPLAIN\*\* SO I  
WON'T GO INTO DETAILS HERE, OTHER THAN TO SAY SOME PROGRAMS CHECK  
FOR INDIVIDUAL KEY BITS AND OTHERS KNOWN "MAGIC" VALUES.  
USUALLY THE FIRST FEW BYTES OF THE KEYBOARD READING CODE WILL BE  
REPLACED WITH A CALL INTO YOUR HOOK, WHERE YOU WILL REPLACE VAL-  
UES AS REQUIRED. READING FROM THE JOYSTICK IS DONE WITH A CALL  
INTO THE ZXPAND ROM AT \$1FFE. YOU WILL RECEIVE THE JOYSTICK DI-  
RECTION BITS BACK IN THE A REGISTER. THE BC REGISTER IS DE-  
STROYED. STARTING AT BIT 7 A LOW BIT WILL INDICATE THE FOLLOWING  
PRESS; UP, DOWN, LEFT, RIGHT, FIRE.  
WITH THE PATCH CODE WRITTEN YOU NEED TO DECIDE WHERE IT WILL  
LIVE. YOU CAN ADD A REM, STORE THE CODE IN LOW MEMORY SUCH AS THE  
8K BLOCK OR IN SPACE RESERVED FOR A VARIABLE. THE MOST COMPATIBLE  
OF THESE IS CERTAINLY THE 8K OPTION BUT THIS WILL REQUIRE SOME  
KIND OF LOADER. YOU CAN EITHER LOAD"" CODE TO THIS BLOCK USING  
MODIFIED BASIC, OR IF BASIC CAN'T BE MODIFIED FOR SOME REASON  
(SUCH AS THE SOFTWARE PROTECTION IN "3D MONSTER MAZE") THEN  
YOU'LL NEED A RELOADER. A SMALL BASIC PROGRAM WILL INSTALL THE  
PATCH AND RELOADER AT 8K WHICH WILL EXECUTE AND LOAD THE TARGET  
PROGRAM WITHOUT RUNNING IT. AT THIS TIME THE PATCHES CAN BE IN-  
STALLED AND THE MAIN PROGRAM STARTED.  
IF YOU CHOOSE TO PUT CODE IN A REM THEN YOU MUST PATCH THE TARGET  
PROGRAM MANUALLY. THIS CAN BE DONE WITH A HEX EDITOR OR SOME  
OTHER PROGRAM, SUCH AS A PYTHON SCRIPT. EVERY PROGRAM IS DIFFER-  
ENT AND WILL REQUIRE SOME WORK ON THE PART OF THE PATCH AUTHOR.  
SOME PROGRAMS READ THE KEYBOARD IN ONE PLACE AND OTHERS SPREAD  
THE WORK ALL OVER THE PROGRAM SPACE. SOME WILL PATCH IN A SINGLE  
POKE, OTHERS REQUIRE EXTENSIVE HOOKING. SOME EXAMPLES OF PATCHES  
ARE AVAILABLE AT THE RWAFF FORUMS, IN THE 'GAMES' TOPIC. THERE ARE  
A NUMBER, EACH USING DIFFERENT TECHNIQUES.  
\* "INVASION FORCE" - USES A RELOADER AND RAM AT 8K.  
\* "MAZOGS", "TREASURE HUNTER" - THESE USE EXTRA REM LINES WITH  
MANUAL PATCHES.  
\* "TEMPEST" - INSTALLS CODE IN THE PRINTER BUFFER AND USES PYTHON  
TO INSTALL THE HOOKS AS THERE'S NOT MUCH TO DO.  
HACKING GAMES IS FUN - GIVE IT A GO AND LET US SEE THE RESULTS :D  
© BY SIRMORRIS - CHARLIE\_ROBSON@HOTMAIL.COM  
SADLY MISSING THE EXCLAMATION MARK SINCE 1981

\*\* CHAPTER 10 - MASTERING MACHINE CODE ON YOUR ZX80 AND ZX81 BY  
TONI BAKER.

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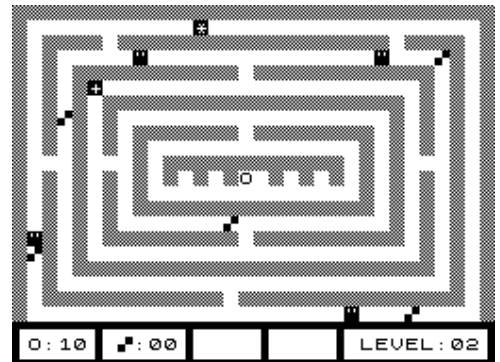
## "LABY" - A GAME FOR ZX81 16K

THIS IS A LABYRINTH GAME MADE BY BBOCK IN 2011. TO PLAY IT, YOU  
MUST HAVE MINIMUM A 16K RAMPACK. WHICH MOST PEOPLE HAVE. I ADMIT  
THAT'S ONE OF THE BEST LABYRINTH GAMES I HAVE EVER PLAYED ON  
ZX81. ITS PLAYABILITY IS ON A VEEERY HIGH LEVEL. SOME MIGHT SAY

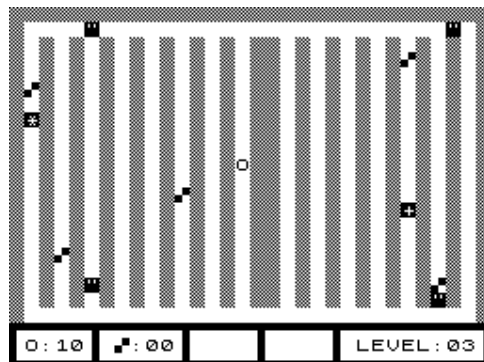


THE GRAPHIC ISN'T VERY COMPLICATED BUT IT'S MADE WITH TASTE AND LOOKIN' GOOD. YOU HAVE TO GO THROUGH MAZES AND - OVERCOMING VARIOUS OBSTACLES AND ENEMIES - COLLECT ALL 'EATABLE' ; ) OBJECTS. THE MOST IMPORTANT ARE **CRYSTALS**, THAT ARE VISUALIZED AS A "CHESSBOARD" SIGNS. YOU HAVE TO COLLECT THEM ALL. BUT THERE ARE ALSO OTHER THINGS TO COLLECT. CONTROLS ARE **QWOP/SPACE** OR **CURSORS** (WITH "9" AS A FIRE). IF YOU HAVE YOUR ZX81 IN A STANDARD

CASE/BOX, WITH A STANDARD KEYBOARD I MEAN, THEN PROLLY YOU WILL HAVE TO USE THE THIRD OPTION - '**USER DEFINED CONTROLS**' - BECAUSE SHOOTING WITH SPACE ON ZX81 KEYBOARD WOULD BE HARD, SO I TAKE "M" AS A FIRE, INSTEAD. THERE IS AN IMPORTANT NOTE RELATED WITH THE 'FIRE' - IT \*DOESN'T\* KILL THE ENEMIES! THEY ARE GHOSTS OF THE MAZE AND IT ONLY **FREEZES** THEM. SO WHEN YOU COLLECTED REQUIRED CRYSTALS YOU SHOULD RUN AWAY BECAUSE SOONER OR LATER (SOONER, I PRESUME ; ) ) THE FROZEN ENEMY WILL COME



BACK TO LIVE - AND WILL TAKE YOURS INSTEAD. AH, ONE MORE THING - WITH ONE BLAST YOU CAN FREEZE MORE THAN ONE ENEMY AT ONCE. ALSO, SOMETIMES IT GETS DARK IN THE MAZE, THEN YOU HAVE TO FIND **LAMPS** TO LIGHT UP YOUR WAY. ; )

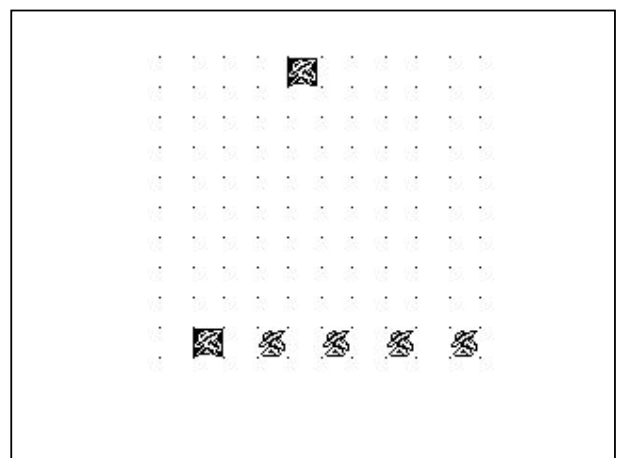


I REALLY RECOMMEND THE GAME, IT GAVE ME A LOT OF GOOD FUN FOR SOME LONGER TIME. EVEN AT WORK, HAAAAAAHAHAHAHAHAHA!!! ; )  
THE GAME IS DOWNLOADABLE FROM HERE:  
[HTTP://TINY.PL/H4ZGJ](http://TINY.PL/H4ZGJ)

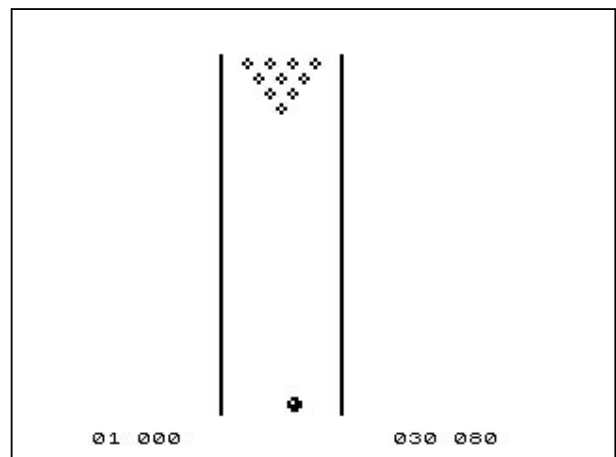
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## 1-KILOBYTE CORNER

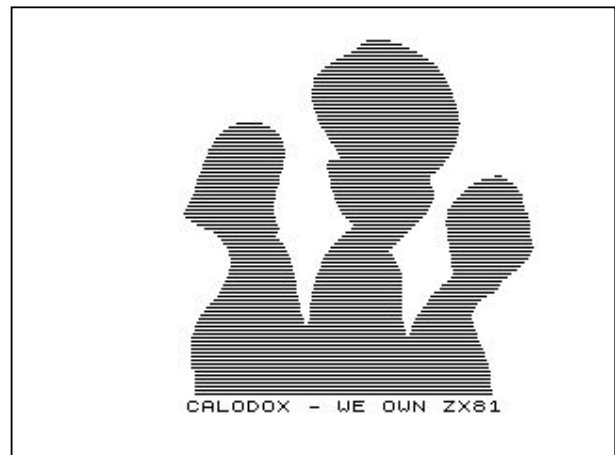
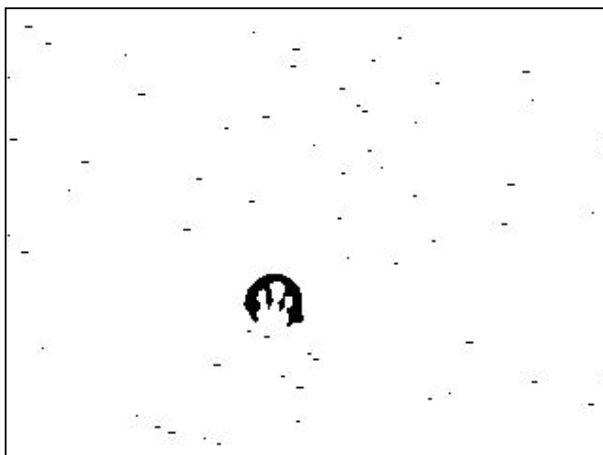
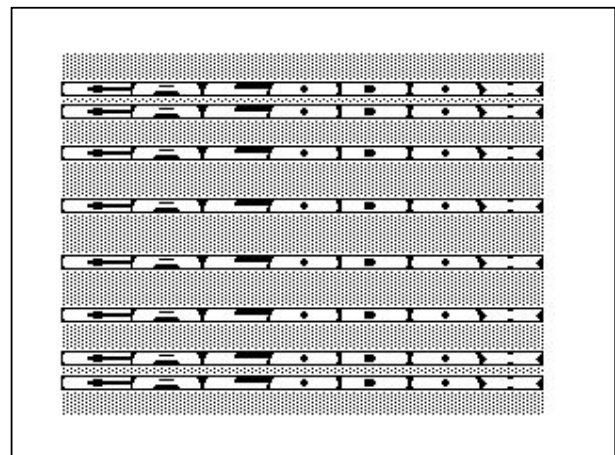
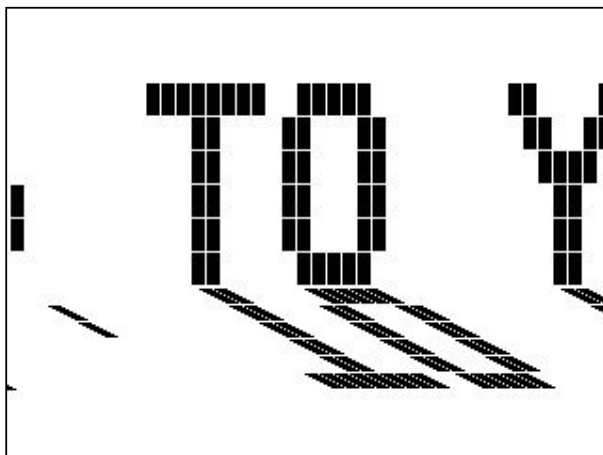
SOME TIME AGO I WAS WRITING ABOUT **DR BEEP**'S EXCELLENT ARCADE GAME FOR UNEXPANDED ZX81 - "BLOCKY". SEEMS LIKE FINALLY THE GOOD DOCTOR FINISHED AND PUBLISHED HIS ALL OTHER 1K GAMES PREPARED FOR ONE BIGGER SET OF ZX81 1K GAME-SOFTWARE. THE GAMEPACK INCLUDES THE FOLLOWING GAMES: "WIWO DIDO, THE CASE OF MAZEDDY'S CASTLE", "BLOCKY", "MAZEDDY'S CASTLE REVISITED", "GHOST HUNT", "3D RANDOM MAZE", "OTHELLO", "BOWLING", "SPY VS SPY", "MEMORY" AND ALSO "POLICE PATROL". SO - AS YOU CAN SEE, DEAR UNEXPANDED ZX81 OWNER - THIS TIME YOU HAVE A REEEEEALLY NICE AND BIG PACK OF NEW GAMES FOR YOUR BELOVED MACHINE. MOREOVER - THEY'RE NOT ANY REGULAR GAMES. THEY ALL HAVE EXCELLENT GRAPHIC BECAUSE THEY HAVE BEEN ALL MADE IN HI-RES! ; ) THE AUTHOR WRITES: "TO FIT IN A 1K ZX81 YOU ALSO HAD TO BUILT A PART OF THE CODE FOR THE USE OF SYSTEM VARIABLES AND THE SCREEN! YOU CODE A GAME IN PHYSICAL 1K RAM, NOT JUST 1K DATA ON TAPE/DISC AND USE WHATEVER YOU NEED IN RAM AVAILABLE. **WILF RIGTER** DEMONSTRATED THAT IT IS POSSIBLE TO EVEN CODE HIRES IN JUST 1K. HE MADE A DEMO PROGRAM THAT DRAWS A



FEW CIRCLES ON THE SCREEN. IN THE 2011 COMPO A FEW HIRES GAMES FOR THE ZX81 COMPETED. LATER THAT YEAR I WANTED TO CODE 10 GAMES IN HIRES IN A PACK AND SELL IT WHERE THE REVENUES WOULD GO TO A GOOD CAUSE. DUE TO THE EXACT TIMING OF THE SOFTWARE I CAN'T GUARANTEE A CORRECT WORKING ALWAYS AND THEREFORE THE GAMES WILL BE ALLOWED TO BE DOWNLOADED FOR FREE". SO - ALL OF THE GAMES ARE HERE: [HTTP://TINY.PL/H4ZXU](http://tiny.pl/h4zxu) ENJOY!



ANOTHER THING WORTH TO MENTION IN 1K CORNER, IS AN EXCELLENT ZX81 DEMO MADE IN 2004 BY **CALODOX** GROUP. THE DEMO IS CALLED "**REZURRECTION**". WE COULD SAY IT'S A MEGADEMO :) BECAUSE IT CONSIST OF SEVERAL MULTILOADING PARTS - EACH OF THEM FIT IN 1K ZX81 MEMORY. IT CONTAINS MANY FANTASTIC EFFECTS IN HI-RES AND SOMETIMES ALSO INTERLACE. THERE ARE TWO VERSIONS OF THE DEMO: ONE IS FOR UNEXPANDED ZX81. THE SECOND ONE IS FOR ALL HIGHER CONFIGS (STARTING FROM 8K) - THIS VERSION LOADS ALL PARTS AT ONCE INTO RAM AND THEN ONLY DEPACKS THEM, WITHOUT MULTILOADING. THE DEMO TOOK **SECOND PLACE** IN "STATE OF THE ART 2004" PARTY.



DOWNLOAD 1K MACHINES VERSION: [HTTP://TINY.PL/H4ZRR](http://tiny.pl/h4zrr)  
 DOWNLOAD 8K-16K-32K (AND SO ON) VERSION: [HTTP://TINY.PL/H4ZR9](http://tiny.pl/h4zr9)  
 ON ZXPAND LOAD WITH ";X" ATTRIBUTE TO **DISABLE** ZX-PAND ROM!!  
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# REVIEW - "BOULDER LOGIC" FOR THE ZX81

WELCOME TO MY FIRST EVER GAME REVIEW! I'LL ATTEMPT TO GIVE YOU A



PRESS A KEY

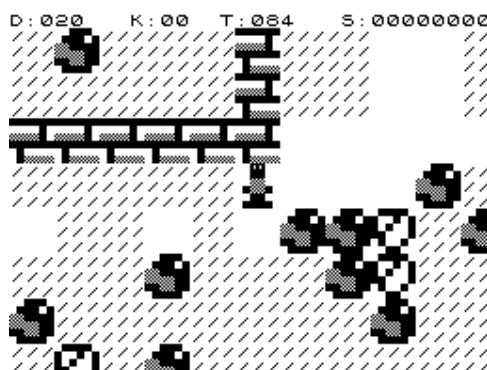
FEEL FOR THE GAMES I LIKE TO PLAY ON THE '81, ALTHOUGH ADMITTEDLY I HAVE ONLY JUST STARTED TO WORK MY WAY THROUGH ALL THE GAMES.

FIRST UP IS "BOULDER LOGIC" BY BOB SMITH. I HAVE A SOFT SPOT FOR BOULDER-DASH GAMES, AND HAVE LOST MANY A WEEK OR TWO PLAYING THEM. THIS LITTLE GEM WAS RELEASED IN 2011, AND RUNS ON THE 16K ZX81. TO ME, THE TITLE SCREEN FEELS LIKE IT IS FROM THE EARLY '80s (THAT'S A COMPLIMENT), AND INCLUDES EVERYTHING A BUDDING BOULDER

MOVER NEEDS. YOU CAN REDEFINE THE KEYS (ESSENTIALLY IF - LIKE ME - YOU DON'T LIKE THE OLD "56780" CURSOR CONTROLS), START A NEW GAME, CONTINUE ON THE LAST LEVEL YOU PLAYED, AND EVEN ENTER A LEVEL CODE TO WHISK YOU DIRECTLY TO ANY LEVEL (AS LONG AS YOU REMEMBERED TO NOTE DOWN THE LEVEL CODES, HEH). IT'S ALSO NICE TO BE ABLE TO PRACTICE A LEVEL, ESPECIALLY IF YOUR GAME SKILLS ARE AS USELESS AS MINE!

NOW, ONTO THE GAME... THE ANIMATION OF YOUR LITTLE CHARACTER IS DONE REALLY WELL, AND THE SLEEPING ANIMATION WHEN YOU PAUSE THE GAME, IS A NICE TOUCH. MOVEMENT IS CHARACTER-BASED BUT THAT DOESN'T MAKE

MUCH DIFFERENCE AND YOU DON'T REALLY NOTICE IT WHEN YOU PLAY. BOULDERS, DIAMONDS, AND ENEMIES LOOK GOOD. THE CONTROLS ARE QUITE



RESPONSIVE SO RUSHING THROUGH A LEVEL WHILST EVERYTHING IS FALLING DOWN AROUND YOUR EARS IS AS ENJOYABLE AS EVER. :) THERE'S 32 LEVELS WHICH SHOULD BE ENOUGH TO KEEP YOU BUSY AND NO DOUBT THE LATER LEVELS WILL BE VERY HARD WITH ALL THE LITTLE NASTIES RUNNING ABOUT (I HAVEN'T GOT PAST LEVEL 12 YET!). I HAD TO DRAG MYSELF AWAY FROM THE GAME TO WRITE THIS, AND I'M ITCHING TO HAVE ANOTHER GO, THAT'S HOW ADDICTIVE I FIND BOULDER-DASH GAMES. TIME LIMITS ARE QUITE

GENEROUS, WHICH MEANS GETTING FURTHER THROUGH THE LEVELS SHOULDN'T BE TOO HARD, ALTHOUGH IT IS EASY TO BE RUSHING ACROSS A LEVEL AND RUN STRAIGHT INTO AN ENEMY, SO REMEMBERING THE LEVELS IS A GOOD IDEA. MAYBE SOMEONE COULD MAP THIS GAME (I MAY TRY). ALL IN ALL, IT'S AN ADDICTIVE GAME, EXCELLENT GRAPHICS AND RESPONSIVE CONTROLS. SO WHAT ARE YOU WAITING FOR! GO DOWNLOAD IT!!!

[HTTP://TINY.PL/H4ZR5](http://tiny.pl/h4zr5)



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## ZONXPLORER - A NEW TURBOSOUND INTERFACE (ZX81/ZX SPECTRUM).

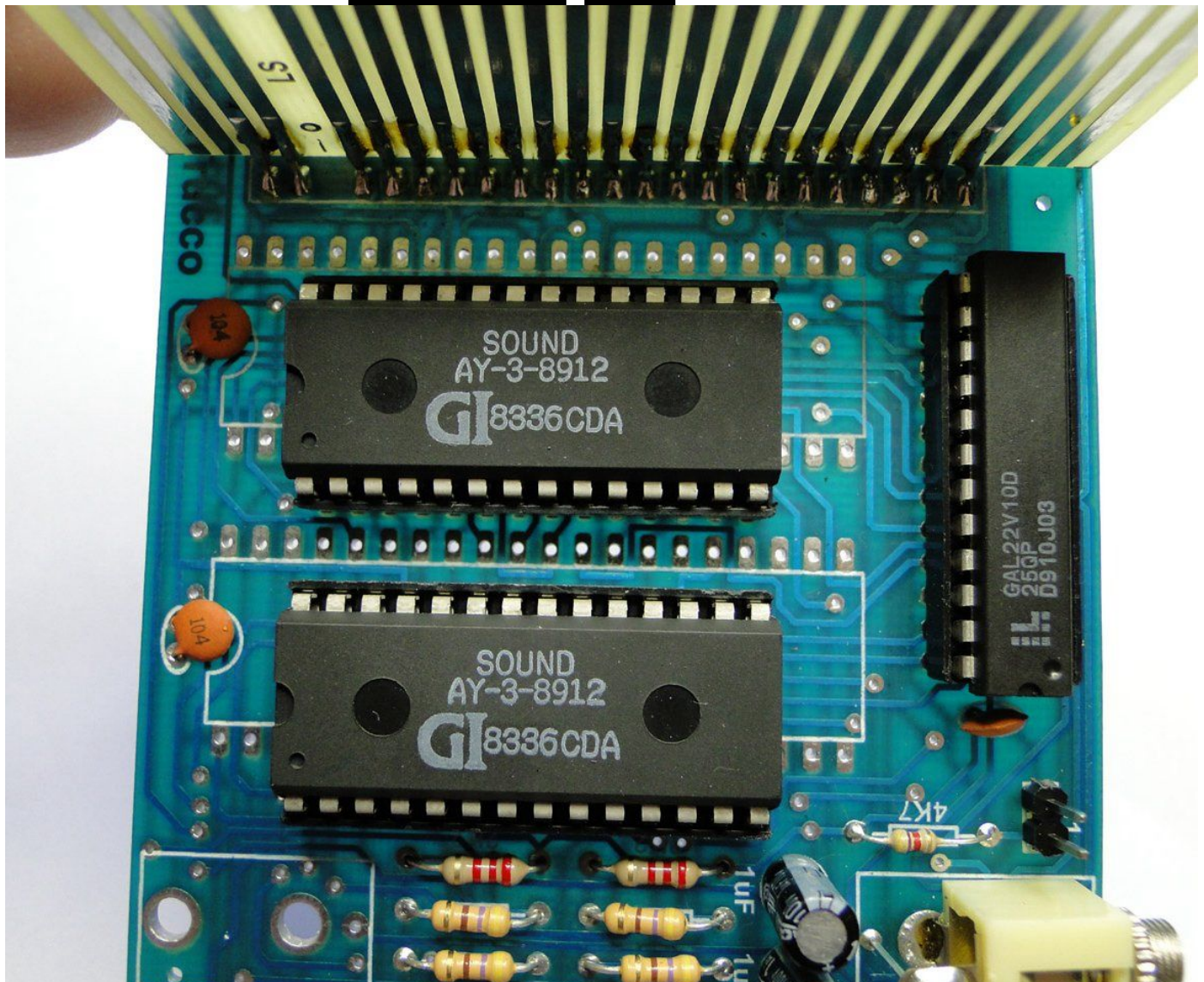
ANOTHER TURBOSOUND INTERFACE FOR ZX81 HAS APPEARED IN 2012. IT CONTAINS TWO AY-3-8912 CHIPS (THE SAME WHAT ARE IN ZX SPECTRUM 128K). WE HAVE 2 CHIPS ON ONE BOARD HERE, AND ONE AUDIO-OUTPUT, SO IT'S NOT REQUIRED TO USE AN ADDITIONAL AUDIO-MIXER FOR SOUND. THE INTERFACE IS IN ZONX STANDARD AND SEEMS LIKE IT CAN - APART FROM TURBOSOUND - NORMALLY PLAY MUSIC FOR 1 ZONX ONLY, TOO. IT HAS BEEN DEVELOPED AND PRODUCED IN BRAZIL: THE FATHERLAND OF TK85





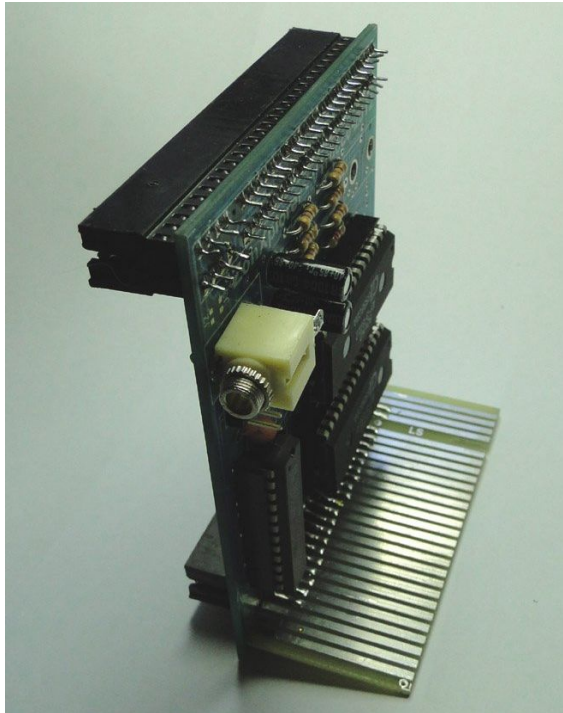
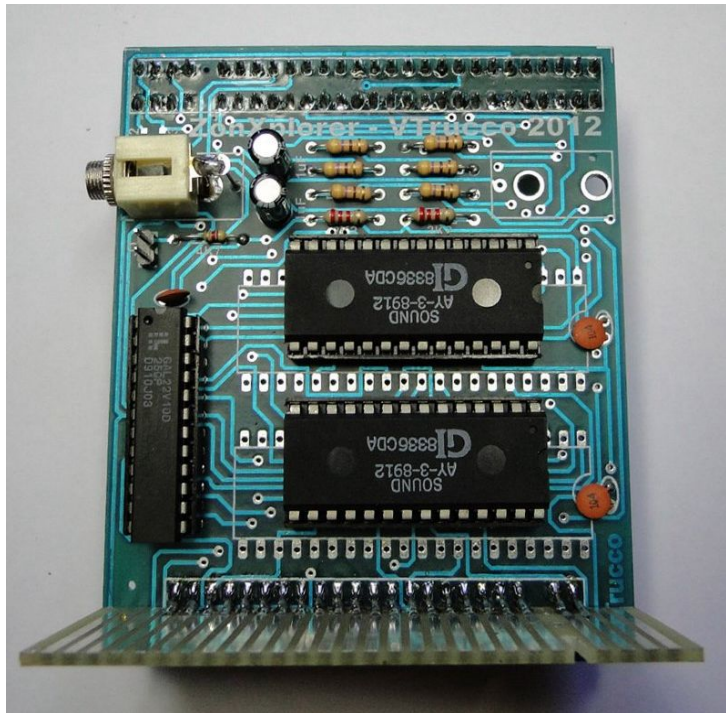
- A FINE CLONE OF ZX81. I PRESUME THE INTERFACE WORK FINE ALSO WITH CLASSIC ZX81. AFTER YOU CONNECT IT TO YOUR MACHINE, YOU CAN STILL CONNECT THE **ZXPAND** TOO. BUT IT CAN PLAY MUSIC WITHOUT ZXPAND - FOR INSTANCE WITH **TAPE-RECORDER** ONLY. WHAT IS MORE INTERESTING - AND WEIRD - AUTHOR WRITES THAT ACTUALLY EXACTLY THE SAME INTERFACE CAN BE ALSO PLUGGED... INTO **ZX SPECTRUM!** AND IN-DEED, WHEN WE LOOK AT

PHOTOS OF THE DEVICE, WE CAN SEE BOTH BUSES: ZX SPECTRUM BUS AND ZX81 BUS. I'M MOST CURIOUS IF IT CAN PROPERLY PLAY TURBOSOUND MUSIC IN STANDARD OF ZX SPECTRUM. IT WOULD BE REALLY SOMETHING! ANYWAYZ. THE INTERFACE'S NAME: "**ZONXPLOER**" CAME AS A MIX OF TWO NAMES: "ZONX" (THAT WE KNOW FROM ZX81 WORLD) AND "EXPLORER" WHICH IS BRAZILIAN AY-INTERFACE FOR ZX SPECTRUM (OR - TO BE EXACT - FOR THEIR SPECCY CLONE **MICRODIGITAL TK90X**).





AUTHORS SUGGEST US TO PAY ATTENTION TO TWO SMALL JUMPERS IN A CORNER OF THE BOARD. WHEN THEY'RE 'CLOSED' THEY ALLOW ZONXPLOER TO COOPERATE WITH THE THIRD ADDITIONAL AY CHIP - POSSIBLY CONNECTED AS ANOTHER ZONX OR EVEN INTERNALLY MOUNTED AY (SUPPOSEDLY THEY APPEARED SOMETIMES IN TK85 ISSUES), GIVING A TOTAL NUMBER OF NINE SOUND CHANNELS. BUT OF COURSE THERE IS NO SOFT FOR SUCH A COMBO. ;)

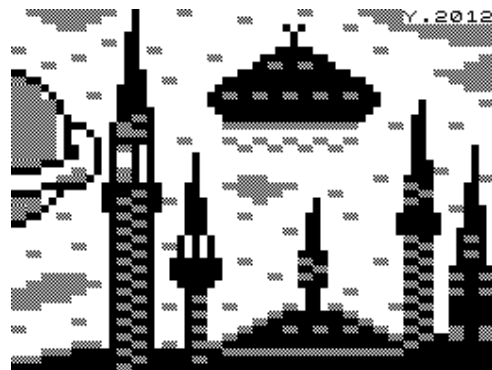


I CAN'T SEE ANY E-MAIL ADDRESS OF THE PRODUCER BUT YOU GUYZ CHECK OUT THE ORIGINAL SITE: [HTTP://TINY.PL/H4ZXP](http://tiny.pl/h4zxp) (THERE IS AN ADDRESS OF THE SITE'S ADMIN, SO MAYBE HE COULD KNOW SOMETHING. OR - MAYBE HE IS THE PRODUCER HIMSELF, WHO KNOWS ; ) ). GOOD LUCK!

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## RETROSPECTIVA 2012 - AN ONLINE COMPETITION

OK THEN, **PASTBYTES** - THE GUY WHO YOU MIGHT KNOW FROM ZX81 FORUM, ORGANIZES AN **ON-LINE COMPO** FOR MANY VARIOUS 8-BIT COMPUTERS, INCLUDING ZX81. SEEMS LIKE THOSE BLOKES DO IT EVERY YEAR ACTUALLY. NICE STUFF, YES. THE COMPO IS CALLED "**RETROSPECTIVA**". ITS **DEADLINE** IS ONLY **NEXT YEAR**, SO IT'S STILL SAFE TO GIVE HERE INFOS ABOUT IT, IN THIS MAG, HOPING YOU CAN JOIN THE COMPO AND SUPPORT IT WITH YOUR ZX81 WORX. THERE ARE THREE CATEGORIES IN THE COMPETITION: **BASIC GAME** (ANY BASIC VARIANT, SO YOU CAN MAKE YOUR GAME IN THE STANDARD BASIC OR ANY BASIC EXPANSION, AND ALSO PROBABLY COMPILED BASIC), **GRAPHIC** AND **MUSIC**. THIS IS A WWW SITE OF THE EVENT: [HTTP://TINY.PL/H4ZML](http://tiny.pl/h4zml) THAT IS ORGANIZED IN COOPERATION WITH ARGENTINE COMPUTER MUSEUM.



INFORMATIONS FOR SINCLAIR ZX81/ZX80 USERS ARE FOLLOWING - FOR GAME COMPO: UP TO 16KB RAM, NO SOUND, ONLY TAPE UNIT ALLOWED. HMM. THAT'S HARSH. ABOUT GRAPHICS AND MUSIC CATEGORIES: ABOVE HARDWARE RESTRICTIONS APPLY \*ONLY\* TO THE BASIC



GAME CATEGORY. THIS ALLOWS, FOR EXAMPLE, TO SUBMIT A MUSIC ENTRY CREATED ON A ZX81 WITH A ZONX-COMPATIBLE INTERFACE. HOWEVER THE MUSIC WOULD HAVE TO BE IN \*.P FORMAT (FOR TAPE-LOADING). SO COLLABORATION WITH A CODER WOULD BE REQUIRED, I PRESUME. AS FOR GFX, SURELY THEY WOULD ACCEPT NOT ONLY PICTURES IN LOW-RES BUT ALSO IN HI-RES, IF YOU PREFER THIS GRAPHIC MODE ON YOUR ZX81.

ALSO, WHAT'S IMPORTANT, **PASTBYTES** WRITES: "HOWEVER NOT EVERYTHING IS ALLOWED. THE HARDWARE TO BE USED NEEDS TO BE SUFFICIENTLY SUPPORTED AS TO BE INCLUDED IN EMULATORS. THIS WAY EVEN THOSE WITHOUT THE SPECIFIC HARDWARE CONFIGURATION NEEDED TO DISPLAY/PLAY YOUR ENTRY WILL BE ALLOWED TO ENJOY IT".



THERE ARE ALREADY SEVERAL ZX81 WORKS SENT TO THE COMPO, WHEN I'M TYPING THOSE WORDS. FIVE ZX81 PICTURES: FOTO-APARAT (BY ME), TREE'81 BY **PIESTU**, SPACE BASE (WELL, ALSO BY ME), HOUSE BY **PYZA** AND LAUGH BY **MONO**. THERE IS ALSO ONE SONG MADE ON ZX81 WITH ZONX INTERFACE: YERZMIX PART 6 (BY... YES. ME).

I DON'T ENTIRELY UNDERSTAND WHY THERE IS ONLY ONE ZX81 USER AMONG THE PARTICIPANTS OF THE CONTEST - GUESS WHO. ALL THE REST ARE PEOPLE FROM ZX SPECTRUM AND... **ATARI**

**XL/XB**(!!!) - MAKING STUFF FOR ZX81 JUST FOR PLEASURE. WELL, I CAN UNDERSTAND PEOPLE CAN'T MAKE MUSIC ON ZX81'S SOUNDTRACKER OR DON'T HAVE A ZONX. BUT MOST PPL COULD MAKE SOME NICE PICTURES AND SEND THEM TO THE COMPO. ZX81 HAS VERY GOOD GFX ABILITIES, SO MOVE YOUR ARSES, PEOPLE!!! ;) E'MAIL ADDRESS TO SEND YOUR WORX TO: [INFO@RSP.RETROCOMPUTACION.COM](mailto:INFO@RSP.RETROCOMPUTACION.COM)

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## WHAT'S GOING ON IN THE GERMAN ZX81/ZX80 SCENE?

HERE ARE NEWS FROM GERMAN ZX81/ZX80 COMMUNITY, SENT US KINDLY BY **PAUL**. :)

1. **HOLMATIC** SUPPLIED A **SYSINFO** PROGRAM. THIS PROGRAM WILL SCAN THE MEMORY OF THE ZEDDY AND SHOW WHETHER THERE IS ROM, RAM, ROMSHADOW OR RAMSHADOW PRESENT ON THE LOCATIONS 0-65535. THE MEMORY IS NOT TESTED FOR RELIABILITY BUT ONLY FOR PRESENCE. IT TESTS TOO, WHETHER THE ZEDDY IS CAPABLE OF RUNNING MACHINE CODE IN THE AREA FROM 32768 TO 49151. IT ALSO TRIES TO ACCESS THE NETWORK-CHIP W5100 AND SHOW WHETHER IT CAN BE PROPERLY WRITTEN TO ITS REGISTERS. [HTTP://TINY.PL/H43HX](http://TINY.PL/H43HX)

2. **HOLMATIC** HAS UPDATED HIS SCHEMATIC FOR **56K RAM** (INTERNAL OR EXTERNAL). THIS IS NOW ALSO CAPABLE OF RUNNING MACHINE CODE IN THE AREA FROM 32768 TO 49151. THE CHANGE HAD BEEN SUGGESTED BY **SIGGI** ON OUR LAST ZX TEAM MEETING IN MARCH. RUNNING MC ABOVE 32K IS REQUIRED FOR **SERIOUS NETWORKING**. [HTTP://TINY.PL/H43HM](http://TINY.PL/H43HM)

3. **JENS** HAS FOUND ONE OF HIS ZEDDYs RUNNING ONLY ON 54% OF THE NORMAL "SLOW" SPEED BUT STILL SHOWING A STABLE PICTURE. THIS IS VERY USEFUL FOR DIFFICULT GAMES :-D AND WILL BE DEEPLY ANALYZED IN THE END OF OCTOBER. [HTTP://TINY.PL/H43HG](http://TINY.PL/H43HG)

4. **HOLMATIC** IS DEVELOPING A **MODIFIED ROM** THAT USES UDRIVE FOR THE INTERNAL LOAD AND SAVE ROUTINES. UP TO NOW THERE WAS THE NEED FOR A DRIVER IN THE AREA 8-12K WHICH HAD TO BE CALLED OUT RATHER UNCOMFORTABLY LIKE PRINT USR 8888, "LTEST.P" WHICH WOULD LOAD TEST.P

INTO RAM. NOW THIS CAN BE ACHIEVED BY TYPING LOAD "TEST". BACKGROUND IS AGAIN THE **NETWORKING** OF THE ZEDDY. THIS REQUIRES ALL RAM FROM 8K TO 64K AND THEREFORE DUMPS THE USB DRIVER. BECAUSE OF THIS, ALL NETWORKING STUFF (WHICH IS RATHER LARGE) NEEDS TO BE LOADED BY **CASSETTE** INPUT. AS THIS IS RATHER INCONVENIENT NOW THERE IS USB-SUPPORT IN THE ROM.

5. **JOACHIM** NOW HAS A **AX81B** (WITH IO) THAT DRIVES A WD H3224 LCD RUNNING. THIS HAS A SNAPSHOT FUNCTION AND CAN THEREFORE AUTORUN A PROGRAM ON POWER-UP AND MIGHT BE USED FOR CONTROLLING A HEATING OR SUCH PROJECTS.

6. **JOACHIM** IS SEARCHING FOR THE ASDIS SOURCE CODE OR ANY HELP TO MOVE THE ASDIS TO RUN ADDRESS 23000. THIS IS REQUIRED TO HAVE ASDIS WORKING ON THE **AX81** (WHICH IS A ATMEGA **CLONE** OF A ZEDDY) AND HAVING "ONLY" 15K FREE RAM ON BOARD. [HTTP://TINY.PL/H43HT](http://TINY.PL/H43HT)

7. **JENS**, **KLAUS**, **HOLMATIC** AND **PAUL** HAVE THE NETWORKING CARD FOR THE ZEDDY RUNNING AND USE THE WORLD OF SPECTRUM **CHAT** EVERY NOW AND THEN... [HTTP://TINY.PL/H43H7](http://TINY.PL/H43H7)

8. **POKEMON** HAS CREATED A BETTER VERSION OF ZX81CCP THAT DOES NOT BLANK OUT IN FAST MODE (BECAUSE SOME LCD TV SHUT OFF...). THE SCREEN STAYS SYNCHRONIZED, BUT STILL BLANK. (THIS WAS ALSO DISCUSSED IN THE BRITISH FORUM).

9. **SBETAMAX** HAS STARTED A DCF77 PROJECT THAT READS THE TIME SIGNAL VIA THE MIC PORT AND SO DISPLAYS A CLOCK WITH DATE AND TIME. THE PROGRAM IS WRITTEN IN POWERBASIC 1.02 WHICH SUPPORTS IN AND OUT COMMANDS AND WAS DESCRIBED EARLIER. [HTTP://TINY.PL/H43HR](http://TINY.PL/H43HR)

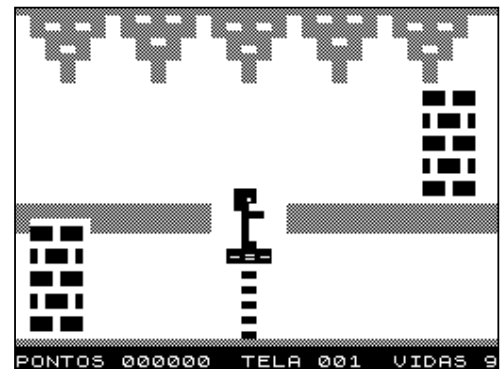
10. AND LAST BUT NOT LEAST **MARKUS\_8008** HAS GOT HIS FIRST EXAMPLE OF A **ZX80 CASE 3D-PRINTED** BY SHAPEWAYS. THE PHOTOS LOOK VERY PROMISING. [HTTP://TINY.PL/H43H9](http://TINY.PL/H43H9)  
(C) BY PAUL



IF YOU'RE GERMAN-SPEAKING READERS OF OURS, THEN YOU PROBABLY ALREADY KNEW ABOUT ALL OF THIS BUT IF YOU'RE NOT, THEN YOU MIGHT WANT TO KNOW THIS STUFF ;) ESPECIALLY THAT GERMAN ZX81 FORUM IS FULL OF GOOD PROJECTS AND COOL IDEAS.

## GAMES WORKING WITH JOYSTICK ON ZXPAND

SOME GAMES ARE BETTER TO PLAY THEM WITH KEYBOARD. SOME. BUT OTHERS DEFINITELY WOULD WORK FAR BETTER WITH A **JOYSTICK**. AND IT IS POSSIBLE - THANKS TO **SIRMORRIS** AND HIS GREAT INVENTION: ZXPAND. FOR SOME TIME I TRY TO GATHER A COLLECTION OF ALL APPEARING GAMES (NEW ONES - AND OLD ONES CRACKED TO WORK WITH THE JOYSTICK) IN ONE PLACE. YOU CAN FIND THIS COLLECTION HERE [HTTP://TINY.PL/H43NW](http://TINY.PL/H43NW) ALONG WITH A DISCUSSION ABOUT THIS SUBJECT-MATTER, NEW IDEAS AND SO ON. ALSO - YOU CAN WRITE THERE YOUR OWN SUGGESTIONS OF GAMES THAT SHOULD WORK WITH ZXPAND JOYSTICK AND IT IS POSSIBLE THAT SOME OF OUR ZX81 **ALMIGHTY CODERS** ;) WILL LOOK AT YOUR REQUEST WITH A GRACIOUS EYE, HAHHA. AT THE MOMENT (WHICH IS SEPTEMBER 2012 WHEN I WRITE THESE WORDS) WE HAVE:



**NANAKO** (PLATFORM GAME), **UJOL** (PLATFORM GAME), **MAZOGS** (LABYRINTH



GAME), **DARK STAR 2** (LOGIC GAME), **TREASURE HUNTER** (ARCADE/PLATFORM GAME), **TEMPEST** (SPACE-SHOOTER), **3D MONSTER MAZE** (3D LABYRINTH GAME), **MINERMAN** (LOGIC/LABYRINTH - "BOULDER-LIKE"). AND WE HOPE TO HAVE MORE OF THEM IN FUTURE. ;) ;) SO NOW YOU GO AND DOWNLOAD THE GAMES AND I GO BACK RIGHT NOW TO PLAY MINERMAN ON MY ZX81 WITH JOYSTICK. :)

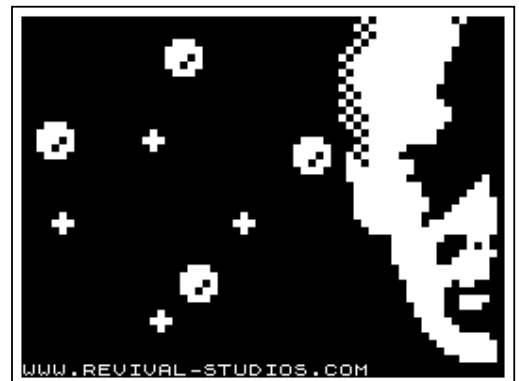
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## A NEW DEMO FOR ZX81 16K

AS A LAST-MINUTE SURPRISE FOR THE **SPECTRUM 30 EVENT**, MARTIJN WENTING OF **REVIVAL STUDIOS** HAS MADE A NEW DEMO THE ZX81/TS1000/TS1500 SYSTEMS, FEATURING FRACTALS, 3D VECTOR-BALLS AND GOOD GRAPHIC. IT'S A VERY NICE PRODUCTION THAT REQUIRES 16K RAMPACK.

THE PROGRAM IS ENTITLED "**ESSENTIALS**" AND YOU CAN DOWNLOAD IT FROM HERE: [HTTP://TINY.PL/H43S6](http://tiny.pl/h43s6)

AH, ONE MORE THING - REMEMBER - THE DEMO IS LOOPED. WHICH IS GOOD FOR PEOPLE LIKE ME, WHO SHOWS ZX81 MACHINES ON VARIOUS 8-BIT MEETING. ONE CAN PUT THE ZX81 ON A DISPLAY SO MORE AND MORE PEOPLE CAN WATCH A LOOPED PROG.



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## "ZX81" - A TURBO-SOUND MUSIC ALBUM RELEASED BY YERZMYEY.

IN MAHLERTS, GERMANY, THE 24TH OF MARCH 2012 ON THE **ZX81-TEAM MEETING** MORE OR LESS RANDOMLY A GROUP OF ENTHUSIASTS CAME TOGETHER TO BRING THE **TURBO-SOUND** FACILITY TO THE ZX81. TURBO-SOUND SIMPLY MEANS THE USE OF TWO **AY** OR **YM2149** SOUND CHIPS TO INCREASE THE NUMBER OF VOICES FROM THREE TO **SIX**. THIS OFFERS ADDITIONAL TONAL POSSIBILITIES FOR SONG WRITERS. ON THE MEETING **YERZMYEY**

ZX81 is a British home-computer as big as an adult man's hand-palm. It has touch-sense keyboard and 1Kb of RAM only. It's been released by Sinclair Research in 1981. American version are: Timex 1000 and Timex 1500. Its graphic is black&white (monochrome) in hardware resolution 64x48 pixels. BASIC is its main operating system, working on Zilog Z80 CPU 3,5Mhz.

It had a modular construction, so people weren't forced to buy all the pieces hardware in one machine, if they didn't need them. So - if anybody required additional RAM, he could buy a 16Kb RamPack or more. If somebody needed sound - he was able to buy a ZonX sound-module (with YMAY chip inside).

But finally we stated that one ZonXAY-module is not enough for us. :) ZonXes are still being produced by various guys. In this moment the ZonX called Mr-X is interesting because it is a through-out device - more interfaces can be connected to it. So - we decided to connect two sound-modules to ZX81 (one of them is on different ports than another) to obtain 6 channels of sound.

And... IT'S ALIVE!!!! :) In this album You can hear 6-channels songs composed on real ZX81 32Kb of RAM with two YM2149 interfaces (ZXpand-AY and Mr-X). Also all the music has been recorded from real ZX81 hardware.

To compose those songs I used Andy Rea's "ZX81 SoundTracker". Then I recorded all the music from the same ZX81 with ZXpand-AY and Mr-X modules using TurboSound Player.

Thanx go to: Andy Rea for the software (ZX81 SoundTracker, TurboSound Player), also to ZX81 hardware developers: SirMorris (ZXpand and ZXpand-AY) and to Sascha2000 (Mr-X).

If You're interested in news from world of ZX81/Timex1000/Timex1500/TK-85/Lambda/R470-Ringo/Prologica/Czerweny, then visit us on our forum: [http://www.rwapservices.co.uk/ZX80\\_ZX81/forums/](http://www.rwapservices.co.uk/ZX80_ZX81/forums/)

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**YERZMYEY**

**ZX81**

Main photos by Bill Lunney <http://www.retroconssolespics.com/>

PRESENTED VARIOUS TURBO-SOUND MUSIC TITLES ON A **ZX SPECTRUM EVOLUTION**, A RUSSIAN ZX SPECTRUM CLONE. AFTER NIGHTS FULL OF MUSIC, DISCUSSIONS AND ALCOHOL DRIVEN VISIONS, YERZMYEY WAS ABLE TO FIND A TEAM TO DO THE SAME ON THE ZX81.

**SIRMORRIS** CONTRIBUTED HIS FAMOUS ZXPAND TOGETHER WITH A ZXPAND-AY PROVIDING THE FIRST THREE SOUND CHANNELS AND **SASCHA2000** ADAPTED A MRX SOUND CARD FOR THE SECOND THREE CHANNELS. LAST BUT NOT LEAST **ANDY REA** PROGRAMMED A **SOUNDTRACKER** FOR THE ZX81.



THE NEW HARDWARE AND SOFTWARE ALTOGETHER ENABLED YERZMYEY TO COMPOSE THE NEW SOUND ALBUM DIRECTLY ON THE ZX81, WITHOUT ADDITIONAL SUPPORT OF OTHER COMPUTERS OR EMULATORS. THE NAME OF THE ALBUM WHICH WAS PUBLISHED ON THE 26TH OF JUNE 2012 IS SIMPLY "**ZX81**" AND CONSISTS OF SEVEN WONDERFUL SONGS:

- 01. ZX81
- 02. NEW LINE
- 03. URSULA
- 04. MOTHERBOARD CIRCUIT ISSUE ONE
- 05. BREAK SPACE
- 06. EARPORT
- 07. TOUCH SENSE

LISTENING THEM THE FIRST TIME NEARLY NOBODY CAN SUPPRESS AN APPRECIATIVE GRINNING OR HIDE HIS AMAZEMENT ESPECIALLY IF FOUR SPEAKERS ARRANGEMENT IS USED. YERZMYEY'S NEW SONGS ARE HITTING THE NERVE OF A BROAD AUDIENCE OF RETRO AND AY-MUSIC FANS. ALL SONGS ARE BALANCED WELL WHILE BEING POWERFUL SIX CHANNEL TUNES WITH A NATURAL SPHERICAL 8BIT SOUND. IT'S DIFFICULT TO SAY WHICH OF THE SONGS HAS THE HIGHEST EARWORM FACTOR. JUST LISTEN THEM AND DECIDE YOURSELF. DOWNLOAD: [HTTP://TINY.PL/6HUG](http://tiny.pl/6hug) (C) BY SASCHA2000

**THE END FOR TODAY ;)**

OK THEN, THAT IS ALL FOR TODAY, GUYZ. I HOPE YOU ENJOYED OUR AUTUMN ISSUE OF THE "MONOCHROME" ZX81 MAGAZINE. :) LET US HOPE THAT THERE WILL BE AS MUCH OF NEW ZEDDY STUFF IN WINTER, AS IT WAS NOW. ;) THX TO ALL ARTICLES' AUTHORS!! ;) © BY YERZ

**ZX-81 IS LIKE THE TARDIS: MAYBE IT IS SMALL ON THE OUTSIDE, BUT ON THE INSIDE - IT'S GREAT!!!!!!**