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"Please stop watching it. Please stop filling your head with filth."

–––– Quote from Angus T. Jones, one of the actors from the CBS series *Two and a Half Men*. And he's right, of course. You'll want to watch how the mainstream liberal/Jew media will now start to demonize and attack him – instead of supporting his beliefs...

Table of Contents

Memory Administration / #1 ESS

Bell Communications Research

Bellcore Practice
BR 231-070-425
Issue 5, February 1986

MEMORY ADMINISTRATION

NETWORK ADMINISTRATION

1 ESS™ SWITCH

Memory Administration / #1 ESS

BR 231-070-425
Issue 5, February 1986

CONTENTS PAGE

BR 231-070-425
Issue 5, February 1986

CONTENTS PAGE

CONTENTS PAGE

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BR 231-070-425
Issue 5, February 1986

CONTENTS PAGE

CONTENTS PAGE

1. GENERAL

1.01 This practice provides the network administrator with recommended methods and procedures for the administration of the 1ESS program store (PS).

1.02 This practice was reissued to include unlinked words on the word usage summary worksheet PSV-4. Figures 4, 11 and associated PSV-4 text were updated to reflect this change.

1.03 The title for each figure includes a number(s) in parentheses which identifies the paragraph(s) in which the figure is referenced.

1.04 This practice describes the tasks required for memory administration. The following documents will provide more detailed information:

- IM-1A001, Input Message Manual
- OM-1A001, Output Message Manual
- Traffic Order
- TG-1A, Translation Guide
- PG-1, Parameter Guide

BR 231-070-425
Issue 5, February 1986

2. MEMORY DESCRIPTION

A. Program Store Memory

2.01 Program Store (PS) memory is composed of three memory areas: Generic Program, Parameters and Translations.

2.02 Each PS frame is equipped with 16 modules (MODS), 8 for memory storage and 8 for duplication. Each MOD contains 8192 words. Consequently, each PS frame provides 65536 duplicated words of Memory (8 MODS X 8192 words per MOD).

B. Program Store Module Duplication

2.03 Program store information is fully duplicated for service protection, and either central control has access to both sets of data. Each store is divided into two halves, called H and G. Each half consists of eight memory modules.

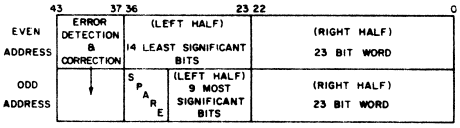
C. Program Store Generic and Parameter Words

2.04 The program store word is 44 bits long. Generic and parameter words contain 37 bits (0-36). Error detection and correction use the remaining 7 bits (37-43).

D. Program Store Translation Words

2.05 Some translation items use a 14 bit translation word. They include: office code translations and lists - i.e., speed calling lists They usually occupy the left half part of the PS word (bits 23-36) but may also appear in the right half (bits 0-22). However, if used as a right half 14 bit word, 9 bits of the 23 bit word are wasted.

2.06 Most translation items use a 23 bit translation word. They can be stored in either the right half (bits 0-22) of a 37 bit PS word or the left half (14 bits) of two consecutive PS words.



3. MEMORY ADMINISTRATION RESPONSIBILITIES

3.01 Proper memory administration requires that memory be used efficiently and that space be available, as required. Improper administration can cause early exhausting of space, which in turn could result in frame additions or costly memory rearrangements.

3.02 The memory of a 1ESS switch has a finite capacity. The network administrator must ensure that this capacity will last through the end of the engineered period. This is done by management of the translations area. Therefore, certain translation area administration goals should be recognized. These goals are based on the overall goal of ensuring the efficient use of the translations area of the 1ESS switch and are as follows:

- Ensure accurate translations
- Conserve memory space
- Monitor the utilization of memory space

3.03 This section recommends certain routine and special tasks to be performed in administering translation memory. Some general checks are required for memory administration. These checks involve:

- Abbreviated Class Code Efficiency and Translation Form Accuracy
- Memory Utilization and Capacity
- Parameter Set Card Adequacy

A. Abbreviated Class Code Efficiency and Translation Form Accuracy

3.04 **Abbreviated codes** (Translation Forms 1502 and 1503) provide an important method of conserving words. For a new office, the abbreviated code objective for the cutover is 95 percent or better for both lines and directory numbers. The network administrator must strive to maintain as high an abbreviation level as possible. It is recommended that all subsequent main station additions to the office have at least an 80 percent overall abbreviation rate for all lines and directory numbers and 95 percent abbreviation efficiency for

lines and directory numbers that **can** be abbreviated.

3.05 **Translation forms** for the office must be kept current and must be posted accurately. Otherwise, any translation problems encountered may be difficult to resolve, and large areas of memory may be used needlessly. All work groups handling translation forms must ensure that their forms are accurate.

3.06 The percent abbreviation should be checked annually (unless circumstances dictate a semi-annual check also). An annual review of the translation forms 1502 and 1503 with their associated memory is recommended. Refer to Part 4 of this section for procedures.

B. Memory Utilization and Capacity

3.07 **Analyzing memory utilization** involves keeping track of used and spare memory. It also involves word usage as related to main station activity. That is, the average number of words gained or lost due to service order inputs should not exceed certain limits. These limits are a function of the office subscriber features and equipment.

3.08 The **memory capacity** determination activity uses the data obtained from the memory utilization analysis and from marketing forecasts to project the time of memory exhaust. The results of memory capacity studies will indicate if there is sufficient memory to last until the end of the engineered period of an office.

3.09 Memory utilization and available capacity should be checked monthly. Refer to Part 5 of this section for procedures.

C. Parameter Set Card Adequacy

3.10 Adequacy of parameter set card quantities is the responsibility of the traffic engineer and the network administrator. The administrator should take part in the allocation process and monitor set card changes as they occur. Particular attention should be given to traffic sensitive and line assignment sensitive set cards. Refer to Part 6 of this section for procedures.

4. ABBREVIATED CLASS CODE CONSIDERATIONS

A. Precutover Abbreviated Class Code Utilization

4.01 The 1502 and 1503 forms are used to abbreviate, in memory, lines that have common classes of service and features. Most offices will have several large groups of lines for which the originating and/or terminating class-of-service data are identical.

4.02 When manually checking abbreviation levels, some initial guidelines for eligibility should be set (for example, 25 to 50 working lines in a class). This cannot be the only criterion. Consideration must be given to the size, type (class-of-service distribution), and growth pattern (declining, growing, or potential new classes and features) of the office. Declining or soon to be eliminated classes should not be selected for abbreviation even though they are above the guideline. Some codes should be reserved for services not yet offered. A plain old telephone service (POTS) office may later become a Centrex office, or a residential office could develop a substantial amount of business service.

4.03 The Network Administrator should obtain abbreviation results from AT&T during the building of line and number translations in the Translations Data Assembler (TDA) support program. The result will be compared with the criteria defined in Paragraph 3.04. Memory shortages may require modifications of the 1502 and 1503 abbreviated class code forms for use in the TDA/(TGP) Translation Growth Process. Another support program, Translations Repack to Implement Memory Savings (TRIMS) can be used to resolve the abbreviation deficiency. The TRIMS program is discussed in detail under "Support Programs" in Section 8.

B. Annual Review of Abbreviated Class Codes

4.04 **The network administrator should initiate annual reviews of the utilization of the abbreviated class codes and arrange with Switching Control Center (SCC) to make any changes.** This activity may require making additions to the 1502A/B and 1503

forms. In each case, the next available code number is used, and the entries are made according to the instructions in the TG-1A. The use of abbreviated class codes may be reviewed on an annual basis using the AT&T Translations Area Analysis (TAA) support program process or a manual method.

4.05 All in-service abbreviated code translation changes will be made by the central office forces via recent change. While abbreviated codes can be established after the original assignments, any previously input line equipment numbers (LENs) or directory numbers (DNs) which fit the new code will remain unabbreviated unless reentered via recent change service orders. Conversely, any customers who have an abbreviated code which is intentionally or unintentionally removed will **lose service** unless the customer is reactivated with a recent change service order. Abbreviated class codes can be removed via the TRIMS support program or locally via recent change. When a code is removed locally, that action must be preceded by a review to ensure that it is not in use. This is accomplished through the use of the translations search program (XTRS).

C. Annual Verification of Memory with 1502/1503 Forms

4.06 The network administrator should annually verify, that the abbreviated code expansion table in translations matches the 1502/1503 forms. The Network Administrator should request the Switching Control Center to perform a T-Read of the expansion tables in memory and forward the results to network administration. The manually-kept 1502/1503 forms must be verified to ensure they match the T-Read memory output. If the manually-kept 1502/1503 forms and memory output do not match, the network administrator should determine which is in error and ensure that the discrepancy is corrected.

4.07 The annual review of the 1502/1503 forms may be done at the same time abbreviated class code utilization is reviewed (paragraph 4.04.) The support program used for the utilization review also produces replicas of the 1502/1503 translators as defined in ESS memory.

4.08 The TAA program may be used to perform the annual abbreviated class code and associated 1502/1503 form review. When the TAA results indicate that abbreviated utilization may cause an exhaust of memory, the TRIMS support program may also be requested. When TRIMS is required, its use should be deferred to the next annual review if possible. Additional guidelines on the use of TRIMS are provided in Paragraph 8.07. If the use of other AT&T programs in Translation Data Recovery and Reprocessing System Services (TDRRSS) are desired, they should be coupled with the annual TAA process. The need to use another program at a specific time should be considered an annual review.

D. Routine For Authorizing and Verifying Abbreviated Class Code Changes

4.09 A formal routine for authorizing and verifying abbreviate code changes is the best way to ensure that inputs are correct, that records remain current, and that the records reflect what is in memory. Individual checks should be made for specific new or changed codes right after they are input to supplement the annual review. A T-Read should be requested for the code's expansion. This check is made because if the code was input incorrectly, the classes which should have been abbreviated with the code will remain unabbreviated.

4.10 Memory activation of new abbreviated class codes required for the pending addition of new services, such as CO-Centrex, Electronic Tandem Switch (ETS), etc. should precede line and number insertion into ESS memory by at least two weeks. Also, their presence in memory should be confirmed at least one week before the insertion of lines and numbers. A "test" line and number should be inserted in recent change to confirm that abbreviation is occurring as expected. When abbreviation is confirmed, remove the "test" line and number.

4.11 For 1 ESS offices with (RSS), word consumption should be taken into consideration. Abbreviated codes should be inserted and verified as described above. Other word requirements are detailed in Section 231-090-153 Feature Documents, Operation with Remote Switching System Feature.

5. MEMORY UTILIZATION AND CAPACITY CONSIDERATIONS

A. Program Store Consumption

5.01 As an office matures and service order disconnects accumulate, holes are created in memory equal in size to the auxiliary blocks used by the disconnected lines which were not originally abbreviated. When a connect service order that requires an auxiliary block is input, the system will attempt to match its auxiliary block requirement with an existing block. If no block of the exact size exists, a memory block of the required size will be removed from a remaining large block in the range of 32 or greater. When the specific size required in the 1 to 31 range does not exist and a block size of 32 or greater does not exist, the involved service order will be rejected. This condition must be considered during the monthly analysis of spare memory space.

5.02 The quantity and size of the blocks should remain reasonably constant. If a significant change does occur, the following are possible causes:

(a) The addition of a new service or feature, such as Automatic Call Distribution (ACD) or a Remote Switching System (RSS).

(b) A large and/or complex centrex group.

(c) Trunking activity: Normal trunking changes on a day-to-day basis will not affect the consumption of translation words. There are some items, such as the activation of carrier group alarms, trunk make-busy keys, and new trunk groups that may utilize an appreciable number of words.

5.03 There is another possible cause for a sudden upward or downward change in word consumption, i.e., a "broken" link list. The link list keeps track of all the spare blocks in memory. A "broken" link list means that one or more of the spare blocks or "holes" are lost to the machine. **Central office maintenance should be notified immediately because this situation may cause serious service problems.**

NOTE: A "Broken" link list condition is indicated by the TR13 output message. Refer to Paragraph 5.09.

B. Monthly Space Check Worksheets

5.04 The monthly check of available memory space is primarily clerical in nature and involves worksheet preparation. However, the administrator is responsible for overseeing the procedure and tracking the results.

5.05 Worksheets PSV-1 through PSV-7 may be reproduced locally to assist in making the space check.

- Figure 1 - 1ESS Translation Mod and Work Calculation (Worksheet PSV-1)
- Figure 2 - 1ESS Link List Spare Right Half Words (Worksheet PSV-2)
- Figure 3 - 1ESS Link List Spare Left Half Words (Worksheet PSV-3)
- Figure 4 - 1ESS Word Usage Summary (Worksheet PSV-4)
- Figure 5 - 1ESS Word Usage Chart (Worksheet PSV-5)
- Figure 6 - 1ESS Excessive Memory Change Log (Worksheet PSV-6)
- Figure 7 - 1ESS Unlinked Memory (Worksheet PSV-7)

5.06 Five examples have been prepared. They are as follows:

- Figure 8 - Worksheet PSV-1

- Figure 9 - Worksheet PSV-2
- Figure 10 - Worksheet PSV-3
- Figure 11 - Worksheet PSV-4
- Figure 12 - Worksheet PSV-5

5.07 Each of the forms PSV-1 through PSV-7 have a space for a date and the office name.

C. Translation Modules and Words (Worksheet PSV-1) Preparation

5.08 A prompter is provided in "Data Obtained From" column. This column will contain the data source for each line or an abbreviated version of a calculation, if required. Parentheses around a letter indicates data from a line on the form. Example: (C) = Line C. Form preparation procedures are provided on a line-by-line basis. Refer to Fig. 8 for an example.

Line A - (Total Program Store Frames) Obtain from parameter set card PSF.

Line B - (Generic Program Highest Mod) Obtain highest module used (or reserved for the generic program and parameter) from parameter set card GENEND.

Line C - (Total Program Store Mods) Multiply Line A by 8. Enter result on Line C.

Line D - (Generic Program Mods Used) To obtain the number of modules used for generic and parameter data, add 1 to Line B. Enter result on Line D.

Line E - (Total Translation Mods) Subtract Line D from Line C. Enter result on Line E.

Line F - (Unlinked Translation Mods) Obtain number of unlinked modules from the Switching Control Center (SCC).

Line G - (Total Translation Words) Multiply Line E by 8192. Enter result on Line G.

Line H - (Unlinked Translation Words) Multiply Line F by 8192. Enter result on Line H.

D. Link List Spare Right Half Words (Worksheet PSV-2) and Left Half Words (Worksheet PSV-3) Preparation

5.09 The VFY-SPACE request results in a TR-13 output message. This message is required to prepare worksheets PSV-1 and PSV-2. The VFY-SPACE and resultant TR-13 output may be obtained from the ESS dial-up or the No. 2 SCCS. The review should coincide with the monthly production of line and terminal counts. Refer to Figures 13, 14, 15, and 16 for examples of left half and right half output messages.

NOTE: A broken link list is indicated on the TR-13 output message if at any time exactly 3 lines of data follow the TR13 line. This indicates that there is an error in the link list and space has been lost. The Switching Control Center (SCC) should be notified immediately. Refer to Par. 5.03.

5.10 The TR-13 output messages should be entered on Worksheet PSV-2 for right half words and Worksheet PSV-3 for left half words. See Figures 9 and 10 for prepared examples of these worksheets. Worksheet preparation procedures and related calculations are contained in the following paragraphs:

Column A - (BLOCK SIZE) Identifies the Block Sizes 1 through 31 on Lines 1 through 31 for right half words and block sizes 2 through 30 on even numbered Lines 2 through 30 for left half words.

Column B - (Octal Number of Blocks) Determine the number of spare linked words available in the right half words by inputting the following message: VFY-SPACE-290330. To determine the number of spare linked-words available in the left half words, input the following message: VFY-SPACE-291330. The system will respond with a TR13 output message for each block size. Each output message will define the total number of available blocks for each size. The number of blocks printed is in octal. Enter this number on the appropriate line in Column B. Refer to Figures 13 and 15.

Column C - (Decimal Number of Blocks) Convert the octal number in Column B to a decimal. Refer to the 1ESS Input Message Manual 1A001, Volume 1, Input Usage Message Guidelines Tab, Octal-Decimal Conversion Tables. Numbers larger than the table size may be converted by a program in the NO. 2 SCC. Enter decimal number of blocks in Column C.

Column D - (Number of Decimal Words) Multiply Column A by Column C and enter result in Column D. After completing line entries, total Column D and enter the result on Column D total line.

Column E - (Octal Block Size 32 or Greater) The TR-13 message for block size 32 or greater will contain the octal size of the block. Enter this data in Column E. Refer to Figures 14 and 16. Messages VFY-SPACE-290321 (right half) and 291321 (left half) are used to obtain block size 32 or greater TR13 output messages.

Column F - (Decimal Block Size 32 or Greater) Convert the octal number in Column E to a decimal number. Use the octal to decimal references given for Column C. Enter this decimal result in Column F. After completing line entries, total Column F and enter result on Column F total line.

Column G - (Total right half or left half Spare Linked Words) Add Column D total to Column F total. Enter the result on Column G total line.

E. Word Usage Summary (Worksheet PSV-4) Preparation

5.11 The following documents are required for the preparation of Worksheet PSV-4:

- Traffic Order
- Monthly Main Station Count
- Forms PSV-1, PSV-2 and PSV-3

5.12 A prompter is provided in "Data Obtained From" column. This column will contain the data source for each line or an abbreviated version of a calculation, if required. Parentheses around a letter indicates data from a line on the form. Example: (C) = Line C. Form preparation procedures are provided on a line-by-line basis. Refer to Fig. 11 for a word usage summary worksheet example.

Line A - (Total Main Station in Use) Obtain Line A data from official main station count for that month.

Line B - (Total Main Station Change Per Month) Subtract preceding month Line A from present month Line A. Enter result on Line B.

Line C - (Right Half Words Available) Obtain Line C data from Line G on Worksheet PSV-1.

Line D - (Right Half Words Spare) Add line H data on worksheet PSV-1 to Column G data on Worksheet PSV-2. Enter result on Line D.

Line D1 - (Right Half Unlinked Words) Obtain Line D1 data from Line B on Worksheet PSV-7. NOTE: If the XLCK has not been run within the last month, use the existing XLCK data to approximate the words that may be lost.

Line E - (Right Half Words in Use) Subtract Lines D and D1 from Line C. Enter result on Line E.

Line F - (Right Half Word Change Per Month) Subtract preceding month Line E from present month Line E. Enter result on Line F.

Line G - (Left Half Words Available) Obtain Line G data from Line G on Worksheet PSV-1.

Line H - (Left Half Words Spare) Add Line H data on Worksheet PSV-1 to Column G data on Worksheet PSV-3. Enter result on line H.

Line H1 - (Left Half Unlinked Words) Obtain Line H1 data from Line A on Worksheet PSV-7. See Note on Line D1.

Line J - (Left Half Words in Use) Subtract Lines H and H1 from Line G. Enter result on Line J.

Line K - (Left Half Words Change Per Month) Subtract preceding month Line J from present month Line J. Enter result on Line K.

Line L - (Total Words Available) Add one half of Line G to Line C. Enter result on Line L.

BR 231-070-425
Issue 5, February 1986

Line M - (Total Words in Use) Add one half of Line J to Line E. Enter result on Line M.

Line N - (Total Words Change Per Month) Add one half of Line K to Line F. Enter result on Line N.

Line P - (Total Words Per Main Station Based on Words and Main Stations in Use) Divide Line M by Line A. Enter result on Line P.

Line Q - (Total Words Per Main Station Based on Change Per Month) Divide Line N by Line B. Enter result on Line Q.

Line R - (Engineered Provision of Main Station Capacity) Obtain Line R data from the current Traffic Order.

Line S - (Main Station Capacity Based on Engineered Main Station Provision) Subtract Line A from Line R. Enter result on Line S.

Line T - (Main Station Capacity Based on the Total Spare Words Available) Subtract Line M from Line L and then divide this figure by Line P. Enter result on Line T.

Line U - (Months to Main Station Exhaust) Compare Line T with Line S and determine the smaller figure. Divide this figure by Line B or the office main station growth per month figure. Enter result on Line U.

Line V - (Percent Right Half Words Used) Divide Line E by Line C and multiply this figure by 100. Enter result on Line V.

Line W - (Percent Left Half Words Used) Divide Line J by Line G and multiply this figure by 100. Enter result on Line W.

Line X - (Percent Total Words Used) Divide Line M by Line L and multiply this figure by 100. Enter result on Line X.

F. Word Usage Chart (Worksheet PSV-5) Preparation

5.13 Form PSV-5 (Word Usage Chart) is optional. It is used to track the percent of words used on a monthly basis.

5.14 The chart is divided into three word usage columns named Right Half, Left Half and Total. Data entered in these columns are taken directly from Form PSV-4, Lines V, W and X. Refer to Figure 12 for an example.

5.15 Draw a solid line to represent the maximum upper limit. Draw a dotted line to represent a warning limit. Traffic engineering should be notified when word usage enters this band. This is necessary because normal equipment additions require a minimum one year period. The lines are prepared as follows:

- Enter 90 percent (or locally derived percent based on local usage characteristics) on the graph as a bold horizontal line.
- Enter 80 percent (or locally-derived percent based on local usage characteristics) on the graph as a horizontal dotted line.

G. Excessive Memory Change (Worksheet PSV-6) Preparation

5.16 Worksheet PSV-6 (See Figure 6) is used to explain excessive memory use. The term "excessive" does not necessarily mean that memory has been wasted but simply that a block (or blocks) has disappeared for which an accounting must be made.

5.17 If any unexplained excessive memory use arises, enter the condition and the date on the PSV-6 Worksheet. Contact network maintenance to determine the cause of the problems. When the problem is resolved, record the cause and the corrective action taken.

H. Unlinked Memory (Worksheet PSV-7) Preparation

5.18 The XLCK output is required for Worksheet PSV-7 (See Figure 7) preparation. This output is obtained from the Switching Control Center (SCC) and is used to track and/or analyze lost

memory. Refer to Figure 17 for a XLCK printout example.

5.19 The use of XLCK to identify unlinked memory should coincide with the monthly production of line and terminal counts and the monthly identification of linked memory.

5.20 The XLCK program, when given upper and lower address boundaries will find and identify all lost memory (unlinked), including complete stores. This identification will include the octal block size and the starting address of the block.

5.21 The XLCK output must be reviewed to determine if large blocks of lost memory or holes are present in the translation area. If these large blocks are present, the SCC forces have the capability of returning them to the link list. By using XLCK to aid in recovering lost memory, the translations area remains relatively consolidated.

I. Memory Utilization and Capacity Analysis

5.22 Word usage summary Worksheet PSV-4 (Fig. 11) is used for memory utilization and capacity analysis. Analyze Form PSV-4 as follows:

Line Q - Is an indicator of memory usage efficiency. A high jump in words/main station should be investigated. Abnormal uses of memory should be recorded on the PSV-6 log.

Line U - Gives an estimate of months until main station exhaust based on the lessor of engineered main station capacity or total words available.

Lines S and T - The smaller figure represents the number of main stations that may be assigned before exhaust occurs.

Lines V, W and X - Represent the percent use of Right Half, Left Half and total words. When Line V (Right Half), Line W (Left Half), or Line X (Total) reaches the 80-90 percent level, notify engineering. Lines V, W and X may be plotted on the Word Usage Chart, Form PSV-5 to assist in tracking the percent words used on a monthly basis. Refer to Figure 12 for an example.

(1) Analysis of change in words versus change in main stations.

5.23 The basic method for tracking memory utilization is a "change in words to change in main station" calculation. The words per main station is that number of translation words used or returned for each main station gained or lost, respectively. Refer to Line Q on Worksheet PSV-4.

5.24 It is difficult to establish guidelines for a reasonable "Change in words to change in main stations" that will fit all ESS offices. This is normally due to activity in translators that are not directly controlled by the amount of active lines and numbers. Given no activity in these types of translators, the activation of abbreviated main stations (both line and numbers) could result in zero word usage. This is based on the fact that a Primary Translation Word (PTW) must be permanently associated with each installed line and each installed number. Whether lines and numbers are working or not, these words never appear to be spare. With this design, the activation of an abbreviated main station simply results in changing the contents of the line and number PTW's to the following:

- Line PTW = abbreviated code and directory number
- Directory Number PTW = abbreviated code and line equipment number

5.25 The words used per main station figure can serve as an indicator of abbreviation efficiency. Actual results obtained from one office for prolonged periods indicated 4-8 words per main station for simple services and 9-16 words per main station for complex services.

5.26 As actual percent abbreviations are determined for each office, a more precise range can be identified and used for the ongoing monitoring process. This computation can be expected to increase as non-line and number translators have activity. This computation can be expected to decrease with minimal non-line and number translation activity and effective

BR 231-070-425
Issue 5, February 1986

abbreviation.

5.27 Results falling outside the defined ranges could indicate lost memory, poor abbreviation, or problems in the VFY-SPACE printout. If this occurs, analysis and resolution should be initiated.

(2) Analysis of Word Usage

5.28 A stable level of word usage linked with an equal or greater change in the station result should be indicative of good abbreviation. The Network Administrator should anticipate, based on translation activity, noticeable changes in the word usage measurements. When exceptional word usage changes are not anticipated, a review of previous vs. current month spare memory needs to be initiated by the Network Administrator (i.e., a 500 word block of spare memory in last month's report does not exist in this month's report). Consultation with maintenance should disclose the use of the excess memory. If not, the link list may have been broken. (Refer to Par. 5.10). Record excessive word usage on Form PSV-6.

(3) Analysis of Lost Space

5.29 The TAA output contains a listing by block location and size of the available link list space. This is also a listing of the lost space in the office. Totals are provided for both. These totals can be used to evaluate the accuracy of the manual translations space review procedures.

J. METHODS OF OBTAINING UNUSED MEMORY

5.30 Unused (spare) memory should be added to the link list as required. Maintenance personnel should advise the administrator as each block of memory is added to the link list.

5.31 Spare memory should not be added to the link list until one of the following conditions occur:

- Spare linked words in block sizes of 32 or greater are nearing exhaust.
- A block of memory larger than any presently available is required for translation input.

K. DISPOSITION OF MEMORY WORKSHEETS

5.32 Each month completed copies of Worksheets PSV-4 and PSV-6 are to be forwarded to the traffic engineer responsible for the particular unit and any other group so designated by your company.

5.33 The administrator will maintain an official office copy of Worksheets PSV-4, PSV-5, and PSV-6.

6. PARAMETER SET CARD CONSIDERATIONS

A. GENERAL DESCRIPTION

6.01 Parameters are produced by AT&T with a Parameter Data Assembler (PDA) computer program. Input data necessary to perform this function are provided by the telephone company.

6.02 Information contained in parameters is made up of four fundamental categories. They are:

(a) Equipment Items: Quality of frames and units, line and trunk network structures, type of automatic message accounting (AMA), etc.

(b) Software Items: Software items are defined and controlled by parameters. Examples of software items are as follows:

- Call Registers
- Hoppers
- Queues
- Peripheral Order Buffers
- Path Memory

(c) Certain Master Scan and Central Pulse Distributor Assignments: although all assignment information is contained in translations, certain assignment data are more readily usable by some programs in the parameter area.

(d) Office Options: Items the telephone company determines for each office. Some options specified are:

- Partial-dial call handling

- Dial tone first
- Coin collect - coin return

6.03 In addition to building parameter data which are not reflected in CS, the PDA program specifies CS table sizes and locations as determined by the traffic engineer, network administrator, equipment engineer, Central Office Equipment Engineering, System-Mechanized Ordering (COEES-MO) outputs and AT&T generated assignments. Each specific table is determined by one or more set cards or AT&T generated input to the PDA process.

6.04 When adding equipment items (hardware) to a 1 ESS entity during growth, parameter and translation (software) information for the hardware must be changed. It is imperative that parameter data and translation data match. This matching is extremely critical with regard to the size of head tables in the translation area of memory. Head table sizes are defined on the ESS-1500 series forms. Head table sizes must be equal to, or greater than, associated parameter values. The ESS-1500 series forms are continuing to be changed or modified. Therefore, the network administrator should consult the Translation Guide No. 1A (TG-1A), Division 3, Section 5A to 5E, to ensure that the information at their disposal is the most current.

6.05 The PDA listing of assignments is available to the telephone company from the AT&T engineer and should be requested. The traffic engineer must compare the work sheet entries to the PDA listing to ensure adequate CS words are provided in total and by component. Any differences should be reconciled. CS words assigned by the PDA can differ slightly from amounts shown on the worksheets, as a result of the manner in which the AT&T engineer assigns certain hardware items. These differences should not significantly affect the CS requirements. It means, however, that only the listing of PDA assignments will include word requirements which are accurate in every detail for a particular office.

6.06 The network administrator is responsible for retaining a copy of the current PDA listing. The network administrator should request a copy of all new PDA runs from the equipment engineer.

B. PRECUTOVER ADMINISTRATION RESPONSIBILITIES

6.07 A general responsibility of a network administrator is to provide accurate and complete data to the traffic engineer. Through the use of this data, the engineer can accurately size and time a new job.

6.08 Traffic sensitive set cards are those requiring a Poisson function in the calculation of their values. Line assignment related set cards are those required to provide sufficient translation areas for line assignment activities. Their established values should reflect the concurrence of both the traffic engineer and the network administrator. This can be accomplished at a formal or informal conference. Refer to practice 231-070-430 for a list of traffic sensitive call store items. Refer to Fig. 18 for examples of line assignment related set card values.

6.09 The first 20 pages of the PDA contain all the set card values for the office being cut over. All the line assignment related and traffic sensitive related set card values should be checked against the values agreed upon with the traffic engineer. Refer to Parameter Guide (PG-1) for Set Card Details.

6.10 Should there be need for other PDA runs prior to the cutover of the machine, the new set card values for each PDA run should be checked. It should be noted that on each PDA run subsequent to the first, every set card that has been changed will show both the old and the new values.

NOTE: There may be an occasion when a local overwrite has been performed to eliminate an error or a shortage in CS. It is imperative that traffic engineering be notified and that they notify AT&T. When the next PDA run is loaded, the item that was overwritten should be checked immediately.

This will eliminate any possibility of the original shortage or error recurring.

C. POSTCUTOVER ADMINISTRATION RESPONSIBILITIES

6.11 All of the areas of responsibility listed in the precutover area remain in a post-cutover environment. Additional responsibilities are listed in the following paragraphs.

6.12 Tracing set card changes as they occur with each parameter run is of prime importance. The network administrator is responsible for obtaining and maintaining a copy of the latest parameter run for each office. To ensure the network administrator is aware of any new parameter run, communications should be maintained between the network administrator, the SCC personnel, and the traffic engineer.

6.13 Another method for obtaining information regarding the current parameter issue number and the issue of generic program installed is to interrogate the machine itself. The issue of generic can be obtained by typing in the message WHO-RU. The ID01 output message will contain the version and issue of the installed generic program.

6.14 When an addition or rearrangement is being considered, the network administrator must have an integral part in the planning process. The existing head table (1500 series forms) values should be checked against those contemplated for the new job. The values shown on the head table cannot be exceeded.

6.15 To determine the degree of utilization of translation related CS items, such as multiline groups or Centrex groups, the network administrator must have a method of tracking set card values.

6.16 One such method of tracking involves both loading and line assignment functions performed by the network administration organization. Upon receiving a copy of the latest parameter run, the network administrator will review the new set card values. Should there be a question on any changed set cards, the administrator must contact the traffic engineer and resolve the problem before the new parameters are loaded into the ESS machine. Special attention should be given to any local overwrites that may have been performed.

6.17 Special note should be taken to the values of the set cards listed in Fig. 18. This table is not all inclusive but provides information on the more common line assignment related set cards. Any changed items should be brought to the attention of the line assignment personnel. Should there be any question on any of these items, the TG-1A, Division 3, Section 5, should be consulted for the most current information.

6.18 Line assignment personnel will then enter the set card values on the ESS translation forms identified in Fig. 18. The parameter issue number and the data should also be entered. The placing of this information will be determined locally. In most cases, the top of the first page of a given form would be the most appropriate place.

6.19 If the ESS is a new office being cut over, the personnel responsible for the cutover will be responsible for entering the information on the translations form.

6.20 By following the procedure, line assignment personnel can track the utilization of the parameter items detailed in this section. When given item, i.e., Centrex (CTG), multiline hunt group (MHG), etc, reaches 75 percent utilization, line assignment will notify the administrator in charge of loading. Both line assignment and loading personnel should discuss the forecast for future growth of the item. The network administrator in charge of loading will then consult with the traffic engineer to increase or reallocate the memory required for the parameter item(s) in question.

7. TRANSLATIONS SEARCH PROCEDURE (XTRS)

7.01 One method of checking abbreviated codes is through the use of the translations search procedure (XTRS). This procedure must be run by the switching control center. The following paragraphs provide an overview of XTRS. If more detailed information is required, consult Section

231-151-304.

7.02 The XTRS is a general purpose program for searching translators. Its basic function allows a user to select an octal number and search certain translators for matching bits. When a match is found, the program will print the associated translation information or optional information, if selected. The program allows the user to select specific translators, types of matches, and printing programs as needed.

7.03 As specified in Paragraph 4.05, XTRS must be used to confirm that abbreviated class codes are not in use before they are removed locally.

7.04 The XTRS program searches through the structure of translations to locate a particular data item in translations.

7.05 After the completion of XTRS, the network administrator should analyze the results and add abbreviated codes as required. It should be noted that additions to abbreviated codes will not affect the lines already in translations (that are not abbreviated). Therefore, it may be necessary to run one or more of the AT&T support programs to accomplish abbreviation of these lines.

8. SUPPORT PROGRAMS

8.01 There are situations that require a deeper analysis of memory than the network administrator is able to perform with the tools at his/her immediate disposal. Under circumstances such as these, the administrator should discuss, with the traffic engineer, the use of one of the AT&T provided support programs. These programs have been developed to aid the operation company in retrieving, analyzing, correcting, reconstructing, and repacking translations data from the memory of an office. The programs are part of the Translation Data Recovery and Reprocessing System Services (TDRRSS). They are furnished as separate processes from which one or more can be selected to achieve the results desired by the operating company.

8.02 The basic set of TDRRSS programs are as follows:

- Translation Area Analysis (TAA)
- Translation Repack to Implement Memory Savings (TRIMS)
- Translation Retrofit and Repack (TRR)

8.03 A supplementary set of TDRRSS programs are as follows:

- Mechanized ESS Feature Recovery (MEFR)
- Translation Assignment Regeneration (TAR)
- Conversion of 1ESS to 1A ESS (1ACONV)
- Translation Data Disassembler (TDD)

8.04 A brief description of the various programs are contained in the following paragraphs.

A. Translation Area Analysis (TAA)

8.05 The TAA program is used for research or diagnosis of translations area problems. It is also the preliminary processing program for the Translation Repack to Implement Memory Savings (TRIMS) or Translation Retrofit Repack (TRR) run.

8.06 The TAA is useful in determining the abbreviation efficiency of the office. A summary listing of all abbreviated codes (POTS and Centrex) used by the office, the number of lines using each code in the listing, the total abbreviated, the total unabbreviated which could be abbreviated, and the total unabbreviated which cannot be abbreviated are all included in the TAA output. Replicas of the recovered 1500A, 1502A, 1502B, and 1503 forms are also printed.

B. Translation Repack to Implement Memory Savings (TRIMS)

8.07 The TRIMS program replaces the manual TAA analysis effort for determining which classes of service can be abbreviated. The program can also be used to eliminate the manual effort required to build new abbreviated codes for frequently occurring unabbreviated classes. The program has the options necessary to:

(a) Abbreviate all classes that can be abbreviated

(b) Abbreviate classes in a hierarchial pattern, reserving some abbreviated codes for future use

(c) Unabbreviate little-used classes as specified by the requestor

(d) Re-engineer head table sizes to more accurately reflect office requirements.

8.08 When TRIMS is used, Network Design, Network Switching Administration, and Translation Administration should jointly complete the E-8086 Questionnaire. This is intended to ensure the desired abbreviated efficiency is obtained.

8.09 TRIMS can be requested to reserve a quantity of abbreviated codes for future use. Reserving of codes should be done with care. TRIMS cannot recover significant quantities of translations space unless there are unused abbreviated codes available. TRIMS also allows a USER limit to be specified. TRIMS will not build a new abbreviation code unless sufficient users are available to justify the new code. TRIMS will not automatically remove codes which have less than the specified quantity of users.

8.10 Upon completion of full TRIMS processing, the translations data are repacked. The new translations produced by the system can be loaded into the machine. Computer printouts of the new translation information should be retained by central office maintenance, the network administrator, and engineering.

8.11 The TRIMS printout will contain the following:

(a) The quantities of LENs and DNs assigned against each abbreviated code, reflecting the quantity of words that have been saved, the percentage of abbreviation efficiency, and the overall office abbreviation percentage in this TRIMS run.

(b) The 1502A, B and 1500 series forms that must be used by the network administrator to update the administrative office records. The 1502A, B and 1503 forms data produced should be reviewed to determine that only tariffed features or feature combinations are present in the codes. Care should be taken to determine that code combinations are not duplicated.

(c) MLH analysis which displays terminal numbers of the multiline hunting group which are located in the same concentrator.

(d) The multi-line hunt analysis produced by the TRIMS program should be requested and sent to the Line and Number Administrator for review and corrective action.

8.12 The TAA gives a functional listing of the original translations data before repack, along with its diagnostic information. The TRR and TRIMS produce a functional listing of the translations data after repack.

C. Translation Retrofit Repack (TRR)

8.13 The TRR is a process by which existing translations are repacked into the smallest possible area, thus eliminating the holes referred to in previous paragraphs. Almost all spare words are contained in the 32-or-greater hole category after the run is finished.

8.14 The TRR also includes the error analysis contained in the TAA; it involves the remagnetizing of PS cards which must then be shipped back to the 1 ESS switch. It does not, however, change the abbreviation status of the office. When retrofitting a new generic program in which module requirements exceed the existing program, a TRR can be used to relocate translation data in order to vacate modules needed by the retrofit generic program.

8.15 If an office is to be repacked, it is recommended that serious consideration be given to using TRIMS for the repack. The incremental cost of TRIMS when run with a TRR is very low. If the abbreviation efficiency is low (90 percent or less), a TRIMS with repack should be run instead. A TRIMS run is optional if the office abbreviation

efficiency is between 90 and 95 percent and is not necessary if the office abbreviation efficiency is 95 percent or greater. The percent abbreviation may be identified by obtaining a TAA run before the TRIMS run. Should a TRIMS run be necessary, it should be understood that an additional TAA run is **not** necessary.

NOTE: Normally this takes two dumps and two AT&T runs which is time consuming. But, it is worth it if the switch memory is nearly exhausted.

8.16 The TRR and TRIMS runs require that no card writing be done during the processing interval. The new mods obtained from these runs will replace all active translation mods in PS and will reflect only the translation structure at the time that the translation area was copied. Hence, any card writing of recent changes made since the area was copied would be lost. Close coordination is important to preclude the possibility of filling the recent change area of call store before incorporation of the new memory cards from these runs.

8.17 For more detailed information on the support program process, refer to AT&T Publication PA-591092 - User's Manual for Translation Data Recovery and Reprocessing System.

D. Mechanized ESS Feature Recovery (MEFR)

8.18 The MEFR Program produces line and number translations as obtained from ESS memory. It can be used to:

- validate and purify office records
- load other systems such as COSMOS or LMOS.

E. Translation Assignment Regeneration (TAR)

8.19 The TAR program produces trunking records (ESS 1200 Series) and traffic register records (ESS 1400 series) as obtained from ESS memory. The TAR requests should be coordinated with the Network Administrator and Traffic Engineer to ensure support program coupling is achieved.

F. Conversion of 1ESS to 1AESS (1ACONV)

8.20 The 1ACONV program is used to convert a 1ESS to 1AESS. During the conversion process is an excellent time to rectify poor abbreviation with the TRIMS program. The improved abbreviation is applied only to the 1AESS. Paragraph 8.16 discusses recent change freezes in more detail.

G. Translations Data Disassembler (TDD)

8.21 The TDD program produces routing and charging records (1300 series) and line and centrex records (1100 series) as obtained from ESS memory. The output provides an excellent tool to verify office records without extensive verify messages and associated clerical time. TDD may be coupled with every second TAA review (effectively every 2 years). A TDD may be requested with the next TAA if one has never been in an office.

BR 231-070-425
Issue 5, February 1986

PSV-1 1 ESS TRANSLATION MODULES AND WORDS

( ) = Use Data From Line (A) Thru Line (H) Office _____

Item	Data Obtained From		Dates			
Mod Calculation						
Total Program Store Frames	Set Card: PSF	A				
Generic Program Highest Mod	Set Card: GENEND	B				
Total Program Store Mods	(A) × 8	C				
Generic Program Mods Used	(B) + 1	D				
Total Translation Mods	(C) – (D)	E				
Unlinked Trans. Mods	S.C.C.	F				
Word (37 Bit) Calculation						
Total Translation Words	(E) × 8192	G				
Unlinked Translation Words	(F) × 8192	H				

Figure 1 - 1 ESS Translation Modules and Words (Worksheet PSV-1) (5.05)

PSV-2 1 ESS LINK LIST SPARE RIGHT HALF WORDS

Date _____ Office _____

Block Size	Octal No. Of Blocks	Decimal No. Of Blocks	No. Of Words (Col. A) × (Col. C)	Block Size 32 Or Greater		R.H. Words Spare
				Octal	Decimal	(Col. D) Total + (Col. F) Total
A	B	C	D	E	F	G
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						

Totals _____ + _____ = _____

Note: Columns (B) And (E) Data Are Obtained From Worksheet VFY-Space 29

Figure 2 - 1 ESS Link List Spare Right Half Words (Worksheet PSV-2) (5.05)

BR 231-070-425
Issue 5, February 1986

PSV-3 1 ESS LINK LIST SPARE LEFT HALF WORDS

Date _____ Office _____

Block Size	Octal No. Of Blocks	Decimal No. Of Blocks	No. Of Words (Col. A) × (Col. C)
A	B	C	D
2			
4			
6			
8			
10			
12			
14			
16			
18			
20			
22			
24			
26			
28			
30			

Block Size 32 Or Greater	
Octal	Decimal
E	F

L.H. Words Spare
(Col. D) Total + (Col. F) Total
G

Totals _____ + _____ = _____

Note: Columns (B) And (E) Data Are Obtained From Worksheet VFY-Space 29

Figure 3 - 1 ESS Link List Spare Left Half Words (Worksheet PSV-3) (5.05)

( ) = Use Data From Line (A) Thru Line (X) Office _____

Item	Data Obtained From		Dates			
Total Main Stations:						
In Use	M.S. Monthly Count	A				
Change Per Month	(A) — Proc. Mo. (A)	B				
Right Half Words (23 Bits):						
Available	PSV-1, Line G	C				
Spare	(PSV-1, Line H) + (PSV-2, Col. G)	D				
Unlinked	PSV-7, Line B	DI				
In Use	(C) — (D) — (DI)	E				
Change Per Month	(E) - Prec. Mo. (E)	F				
Left Half Words (11 Bits):						
Available	PSV-1, Line G	G				
Spare	(PSV-1, Line H) + (PSV-3, Col. G)	H				
Unlinked	PSV-7, Line A	HI				
In Use	(G) — (H) — (HI)	J				
Change Per Month	(J) - Prec. Mo. (J)	K				
Total Words (23 Bit Equivalent):						
Available	[G ÷ 2] + (C)	L				
In Use	[J ÷ 2] + (E)	M				
Change Per Month	[K ÷ 2] + (F)	N				
Total Words Per Main Station Based On:						
In Use	(M) ÷ (A)	P				
Change Per Month	(N) ÷ (B)	Q				
Main Station Capacity:						
Engineered	N.D.O.	R				
Based On Engineered M.S. Available	(R) — (A)	S				
Based On Total Spare Words	[(L) — (M)] ÷ (P)	T				
Months To Exhaust	[Lessor Of (T) Or (S)] ÷ [(B) Or M.S. Growth/Mo.]	U				
% Translation Words Used:						
Right Half	(E) ÷ (C) × 100	V				
Left Half	(J) ÷ (G) × 100	W				
Total	(M) ÷ (L) × 100	X				

Figure 4 - 1 ESS Word Usage Summary (Worksheet PSV-4) (5.05)

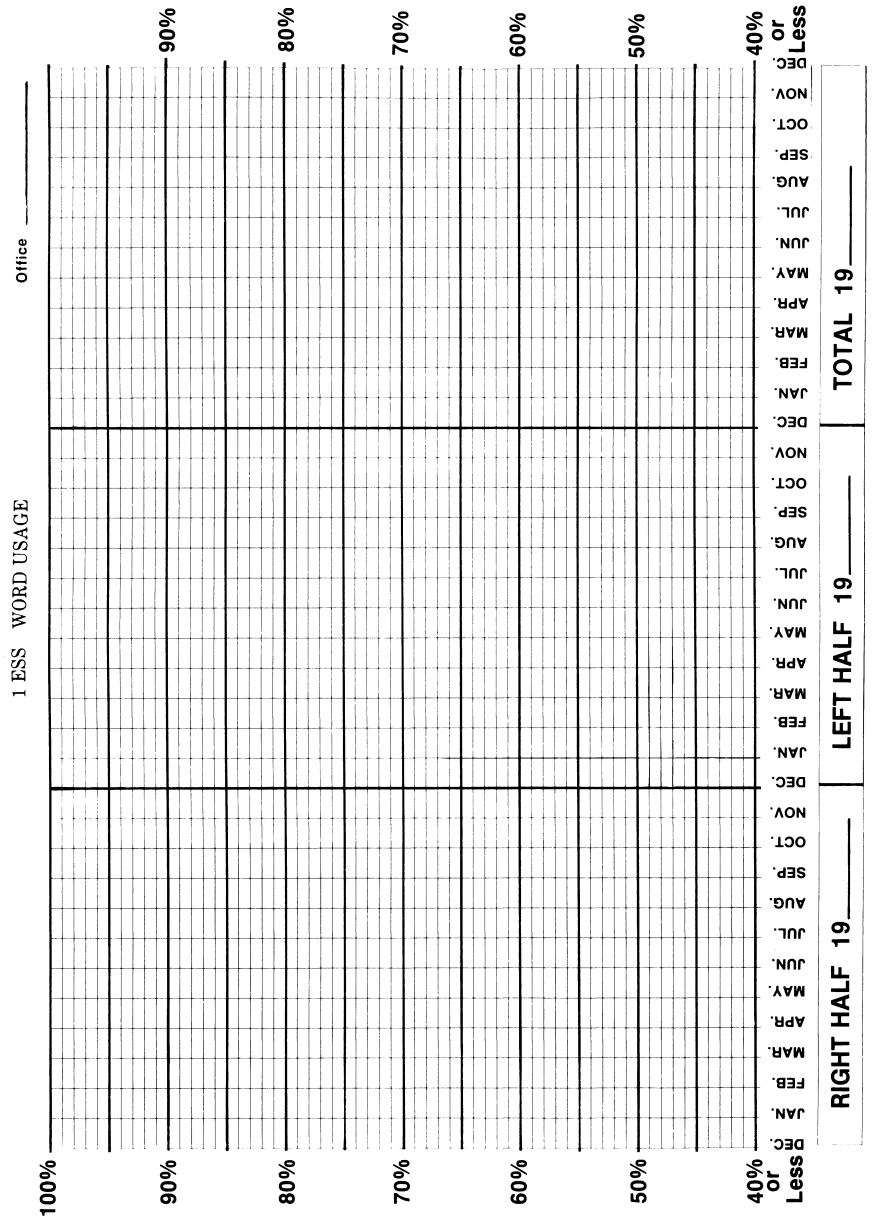


Figure 5 - 1 ESS Word Usage Chart (Worksheet PSV-5) (5.05)

PSV-6 1 ESS EXCESSIVE MEMORY CHANGE Office _____

Note No.	Date	Condition	Cause Or Corrective Action	Is Problem Corrected

Figure 6 - 1 ESS Excessive Memory Change (Worksheet PSV-6) (5.05, 5.16)

BR 231-070-425
Issue 5, February 1986

PSV-7 1 ESS UNLINKED MEMORY

_____ _____
NETWORK ADMINISTRATOR DATE

LISTED BELOW ARE THE STARTING ADDRESSES AND BLOCK SIZES FOR ALL UNLINKED PS MEMORY SIZE 32 OR GREATER. IN UNIT _____, BUILDING _____. THE AUXILIARY PROGRAM XLCK PROVIDING THIS INFORMATION WAS RUN ON _____ 19 __.

_____
CENTRAL OFFICE FOREMAN

LEFT HALF			RIGHT HALF		
STARTING ADDRESS	OCTAL SIZE OF BLOCK	DECIMAL	STARTING ADDRESS	OCTAL SIZE OF BLOCK	DECIMAL
TOTAL (IN DECIMAL)		_____ (A)	TOTAL (IN DECIMAL)		_____ (B)

Figure 7 - 1 ESS Unlinked Memory (Worksheet PSV-7) (5.05, 5.18)

PSV-1 1 ESS TRANSLATION MODULES AND WORDS

( ) = Use Data From Line (A) Thru Line (H) Office _____

Item	Data Obtained From		Dates 1-86	2-86		
Mod Calculation						
Total Program Store Frames	Set Card: PSF	A	8	→		
Generic Program Highest Mod	Set Card: GENEND	B	40	→		
Total Program Store Mods	(A) × 8	C	64	→		
Generic Program Mods Used	(B) + 1	D	41	→		
Total Translation Mods	(C) – (D)	E	23	→		
Unlinked Trans. Mods	S.C.C.	F	6	→		
Word (37 Bit) Calculation						
Total Translation Words	(E) × 8192	G	188416	→		
Unlinked Translation Words	(F) × 8192	H	49152	→		

Figure 8 - 1 ESS Translation Modules and Words (Worksheet PSV-1) Example (5.06, 5.08)

BR 231-070-425
Issue 5, February 1986

PSV-2 1 ESS LINK LIST SPARE RIGHT HALF WORDS

Date 2-1-86 Office

Block Size	Octal No. Of Blocks	Decimal No. Of Blocks	No. Of Words (Col. A) × (Col. C)	Block Size 32 Or Greater Octal	Block Size 32 Or Greater Decimal	R.H. Words Spare (Col. D) Total + (Col. F) Total
A	B	C	D	E	F	G
1	1	1	1	1343	739	
2	20	16	32	17675	8125	
3				75	61	
4				75	61	
5				17674	8124	
6				20000	8192	
7						
8						
9						
10						
11	2	2	22			
12	2	2	24			
13						
14						
15	22	18	270			
16						
17						
18	1	1	18			
19	4	4	76			
20	1	1	20			
21						
22						
23	1	1	23			
24						
25	30	24	600			
26						
27	2	2	54			
28	5	5	140			
29	5	5	145			
30	3	3	90			
31						

Totals 1536 + 25302 = 26838

Note: Columns (B) And (E) Data Are Obtained From Worksheet VFY-Space 29

Figure 9 - 1 ESS Link List Spare Right Half Words (Worksheet PSV-2) Example (5.06, 5.10)

BR 231-070-425
Issue 5, February 1986

PSV-3 1 ESS LINK LIST SPARE LEFT HALF WORDS

Date 2-1-86 Office

Block Size	Octal No. Of Blocks	Decimal No. Of Blocks	No. Of Words (Col. A) × (Col. C)	Block Size 32 Or Greater Octal	Block Size 32 Or Greater Decimal	L.H. Words Spare (Col. D) Total + (Col. F) Total
A	B	C	D	E	F	G
2				2212	1162	
4				70	60	
6				70	60	
8	6	6	48	17674	8124	
10				20000	8192	
12				20000	8192	
14				17674	8124	
16				70	60	
18				70	60	
20	1	1	20	17674	8124	
22				20000	8192	
24						
26						
28	20	16	448			
30	1	1	30			

Totals 546 + 50350 = 50896

Note: Columns (B) And (E) Data Are Obtained From Worksheet VFY-Space 29

Figure 10 - 1 ESS Link List Spare Left Half Words (Worksheet PSV-3) Example (5.06, 5.10)

BR 231-070-425
Issue 5, February 1986

PSV-4 1 ESS TRANSLATION WORD USAGE SUMMARY

( ) = Use Data From Line (A) Thru Line (X) Office _____

Item	Data Obtained From		Dates 1/86	2/86		
Total Main Stations:						
In Use	M.S. Monthly Count	A	17323	18093		
Change Per Month	(A) — Proc. Mo. (A)	B	0	770		
Right Half Words (23 Bits):						
Available	PSV-1, Line G	C	188416	188416		
Spare	(PSV-1, Line H) + (PSV-2, Col. G)	D	77060	75990		
Unlinked	PSV-7, Line B	DI	620	818		
In Use	(C) — (D) — (DI)	E	110736	111608		
Change Per Month	(E) - Prec. Mo. (E)	F	0	872		
Left Half Words (11 Bits):						
Available	PSV-1, Line G	G	188416	188416		
Spare	(PSV-1, Line H) + (PSV-3, Col. G)	H	101010	100048		
Unlinked	PSV-7, Line A	HI	1057	1363		
In Use	(G) — (H) — (HI)	J	86349	87005		
Change Per Month	(J) - Prec. Mo. (J)	K	0	656		
Total Words (23 Bit Equivalent):						
Available	[G ÷ 2] + (C)	L	282624	282624		
In Use	[J ÷ 2] + (E)	M	153910	155110		
Change Per Month	[K ÷ 2] + (F)	N	0	1200		
Total Words Per Main Station Based On:						
In Use	(M) ÷ (A)	P	8.88	8.57		
Change Per Month	(N) ÷ (B)	Q	0	1.56		
Main Station Capacity:						
Engineered	N.D.O.	R	29200	29200		
Based On Engineered M.S. Available	(R) — (A)	S	11877	11107		
Based On Total Spare Words	[(L) − (M)] ÷ (P)	T	14494	14879		
Months To Exhaust	[Lessor Of (T) Or (S)] ÷ [(B) Or M.S. Growth/Mo.]	U	15 MO.	14 MO.		
% Translation Words Used:						
Right Half	(E) ÷ (C) × 100	V	58.77	59.23		
Left Half	(J) ÷ (G) × 100	W	45.82	46.17		
Total	(M) ÷ (L) × 100	X	54.45	54.88		

Figure 11 - 1 ESS Word Usage Summary (Worksheet PSV-4) Example (5.06, 5.12, 5.22)

Memory Administration / #1 ESS

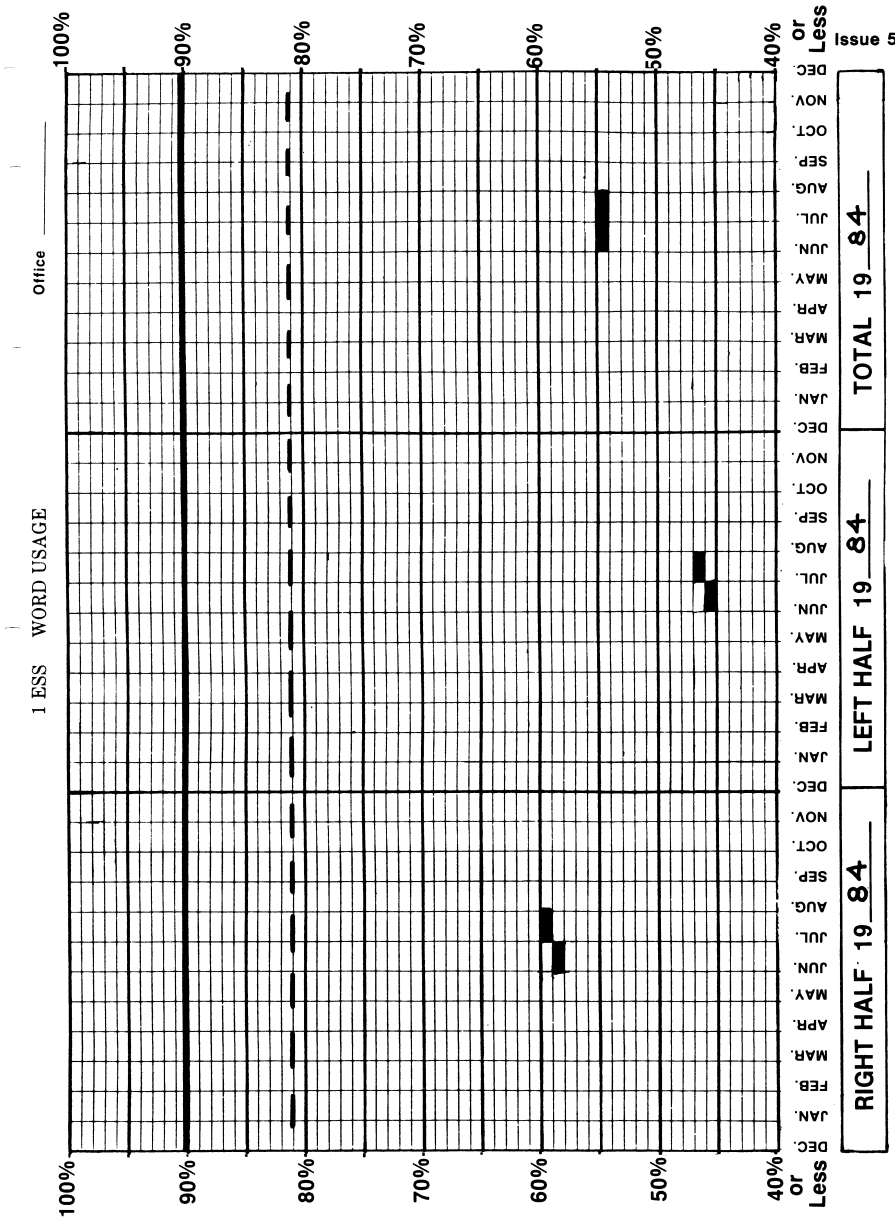


Figure 12 - 1 ESS Word Usage Chart (Worksheet PSV-5) Example (5.06, 5.14, 5.22)

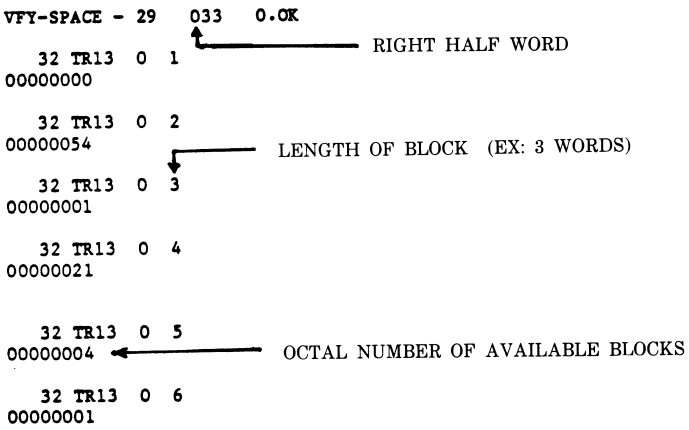


Figure 13 - Right Half (01 Through 31) Length of Block Output Message TR13 (5.09, 5.10)

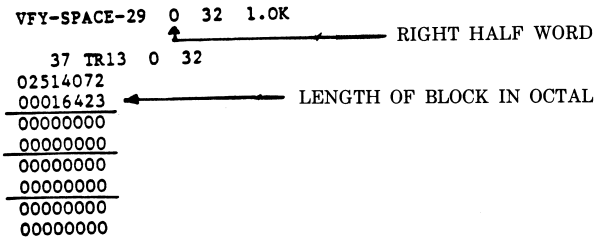


Figure 14 - Right Half (32 or Greater) Length of Block Output Message TR13 (5.09, 5.10)

```
VFY-SPACE-29  1  33  0.OK
                    <-------- LEFT HALF WORD
  34 TR13  1  1
00000000

  35 TR13  1  2
00000000

  35 TR13  1  3
00000000
          <-------- LENGTH OF BLOCK (EX: 4 WORDS)
  35 TR13  1  4
00000001

  35 TR13  1  5
00000000 <-------- OCTAL NUMBER OF AVAILABLE BLOCKS

  35 TR13  1  6
00000000
```

Figure 15 - Left Half (01 Through 31) Length of Block Output Message TR 13 (5.09, 5.10)

```
VFY-SPACE-29  1  32  1.OK
                    <-------- LEFT HALF WORD
   38 TR13  1  32
06540004
00000070 <-------- LENGTH OF BLOCK IN OCTAL
06440004
00000070
06340004
00000070
06437604
00000070
```

Figure 16 - Left Half (32 or Greater) Length of Block Output Message TR13 (5.09, 5.10)

BR 231-070-425
Issue 5, February 1986

```
12 LIB11-4          LOST MEMORY
 2511770      0 (000200)      D(000128)
                                  ↑
12 LIB11-4          LOST MEMORY   |
 2521254      0 (000204)      D(000132)

12 LIB11-4          LOST MEMORY
 2521725      0 (000245)      D(000165)
   ↑                              ↑
12 LIB11-4          LOST MEMORY   |
 6320000      0 (020075)      D(008253)
```

Decimal number of words is indicated by "D"

Indicates that at address 2521725 165 right half words are lost

Figure 17 - Example of XLCK Printout (5.18)

DESCRIPTION	SET CARD	FORM
Multiline Group	MHG	1106
Hotel-Motel Register	NHM	1106†
Centrex Groups	CTG	1110
Console Groups	CNSG	1110
Call Pick-up Groups	PUG/TAI	1108
Automatic Queue Trunk and Line	AQTLG	1510
Queue Register	NQR	1510
Simulated Facilities Group	SFG	1210

Figure 18 - Line Assignment Related Set Card Values Examples (6.17, 6.18)

Realtek RTL2832/Elonics E4000 SDR Experiments

Overview

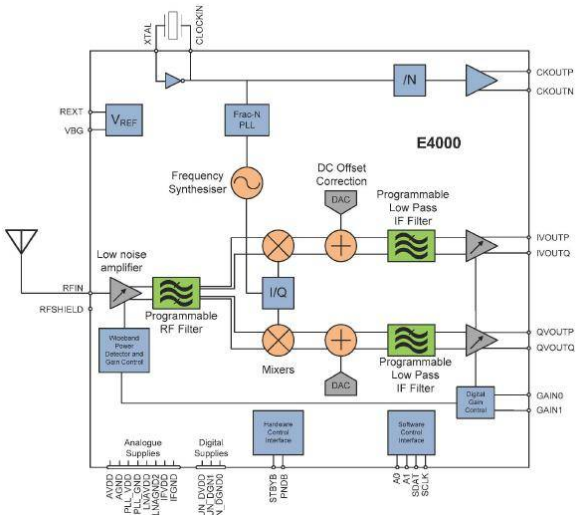
It has recently been discovered that a Realtek RTL2832–based Digital Video Broadcast – Terrestrial (DVB–T) tuner can be adapted into a low–cost Software Defined Radio (SDR).

The Realtek RTL2832 quadrature COFDM demodulator is usually combined with an Elonics E4000 multi–band RF tuner. The front–end E4000 tuner contains the actual RF section. This little 33–pin chip provides a low–noise amplifier, programmable RF tracking filter, quadrature mixer, PLL frequency synthesizer & VCO, DC offset removal, and final IF filtering and amplification. Experimention has shown the abilty to tune between 54 – 1110 MHz and 1260 – 2200 MHz. Performance suffers a bit below 64 MHz and above 1700 MHz. Note that it is possible to "directly sample" signals below 30 MHz by injecting them directly into pin 1 of the Realtek RTL2832.

The PLL synthesizer uses a 28.8 MHz crystal for the reference frequency standard. The stock crystal doesn't offer the best performance, as these tuners are consumer devices and were meant for receiving wideband signals. Replacing the 28.8 MHz crystal with a more stable reference source will prevent any frequency drift, which is noticable when receiving narrowband signals.

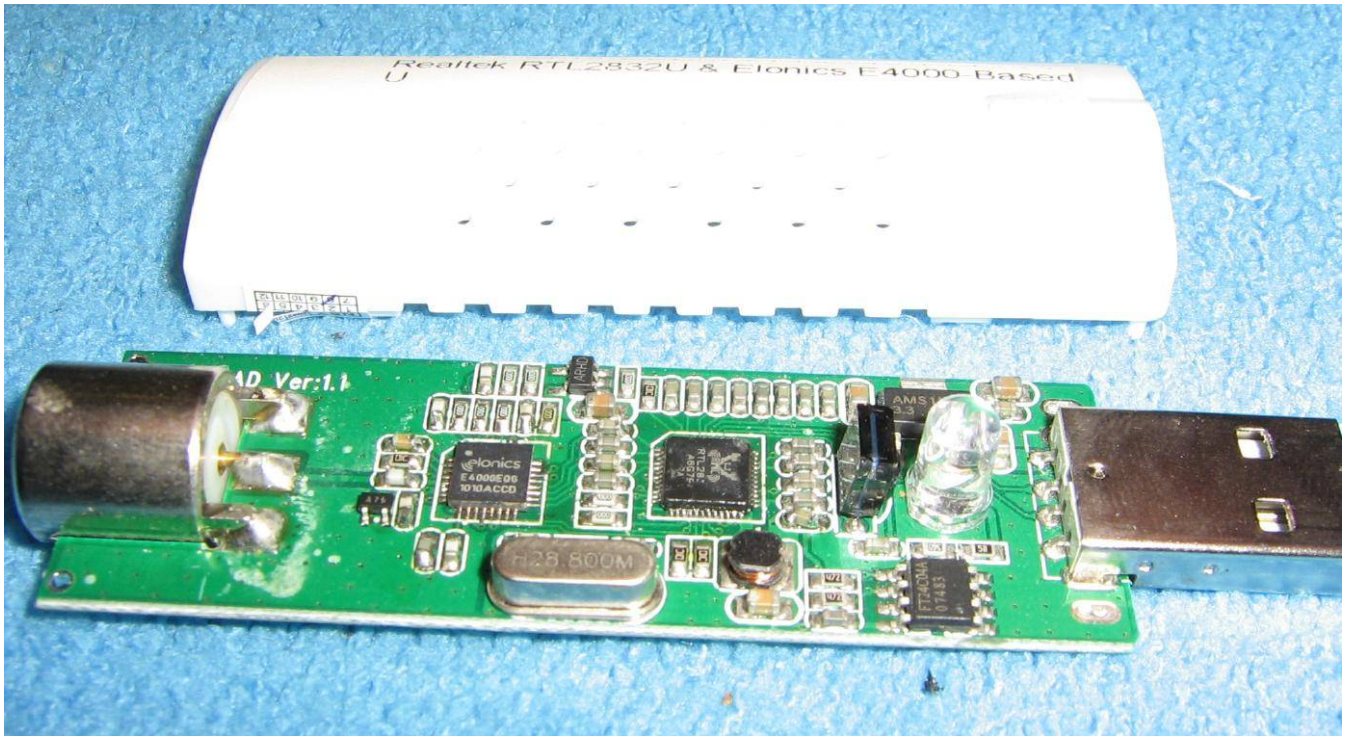
The E4000 tuner utilizes a direct conversion "zero IF" architechture. This means the Local Oscillator (LO) is set the *same* frequency as the signal you wish to receive. The outputs from the quadrature RF mixer are an analog In–Phase (I – 0°) and a Quadrature–Phase (Q – 90°) baseband signal. The I/Q baseband signals are then passed onto the RTL2832 for further processing and to do the actual signal demodulation. The maximum sample rate is around 3.2 million samples per second (MS/s) but using a slightly slow sampler rate (1.0 – 2.8 MS/s) will prevent the demodulation process from dropping samples.

Various free software packages such as GNU Radio or HDSDR are available to "tune" the Elonics E4000 / Realtek RTL2832 combination to the frequency and demodulation setting you choose. The RTL2832 also contains a standard USB interface, which is how the device is programmed and data sent back to your computer. The software, especially under Linux, is still a bit tricky to understand, but there are numerous sources on the Internet to go for additional help.



Elonics E4000 Block Diagram

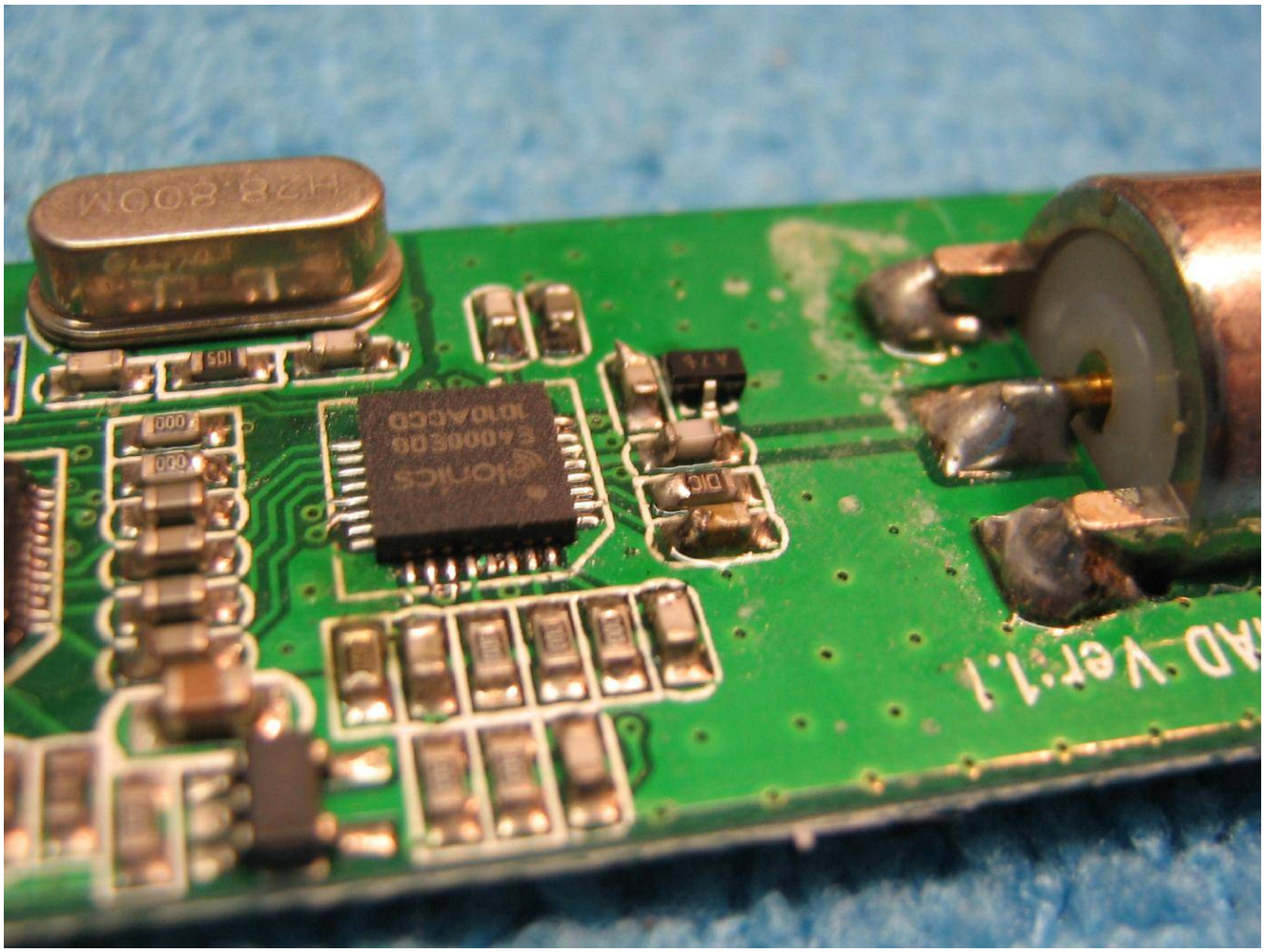
Pictures & Construction Notes



Overview of a generic Realtek RTL2832U / Elonics E4000–based DVB–T USB tuner stick.

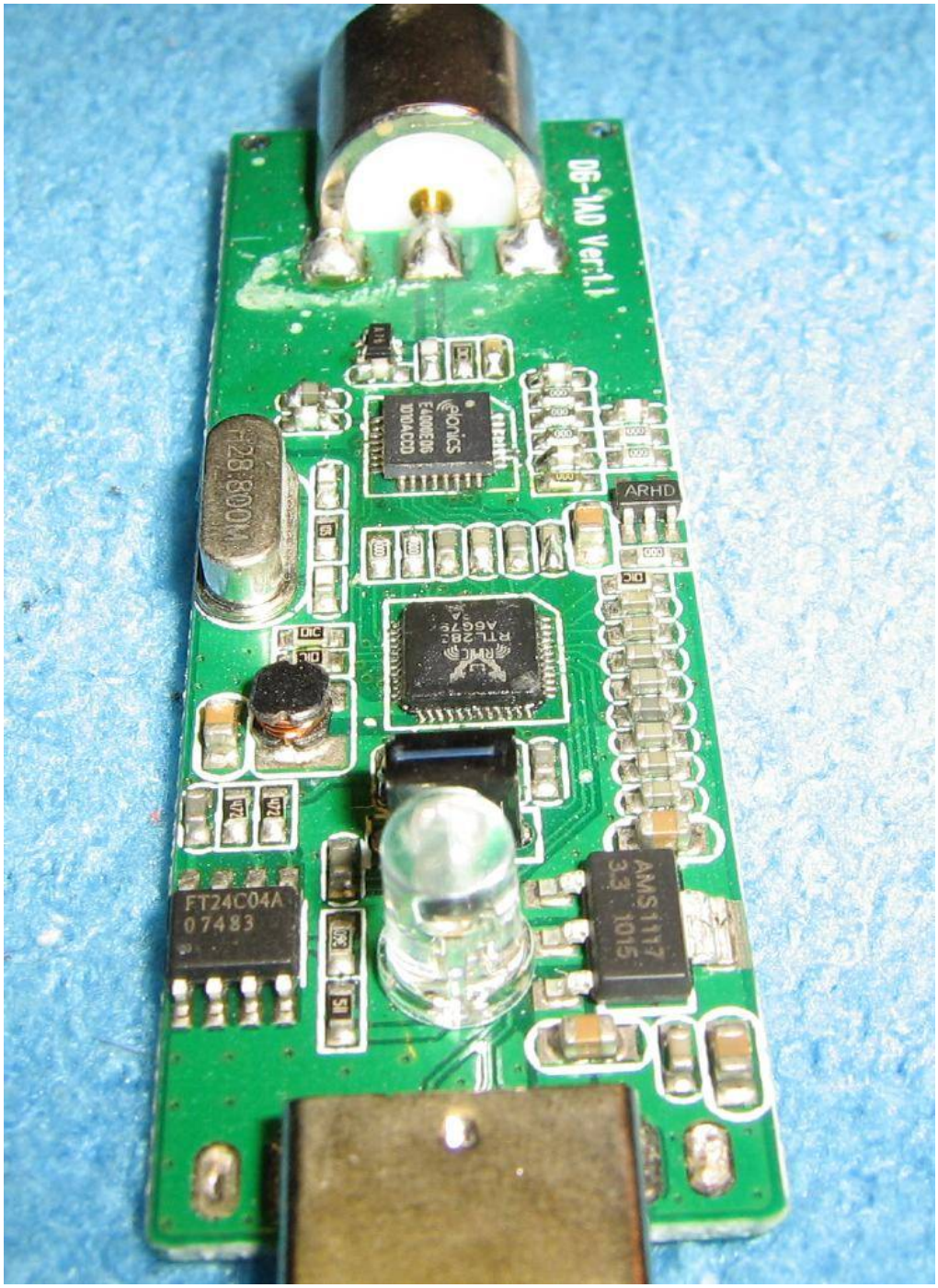
These tuners are all over eBay for under $30.

There is no manufacture data or documentation available. The label on the PC board's upper–left says: DB–1AD Ver:1.1



Closeup of the RF input to the Elonics E4000.

There is a back−to−back diode protector on the RF input to clamp any voltage spikes. When using an external antenna, the diode should be left on the board, but for Intermediate Frequency (IF) or high−UHF/microwave applications, you may want to remove this diode. Just be careful about static electricity on the RF input.



Alternate view.

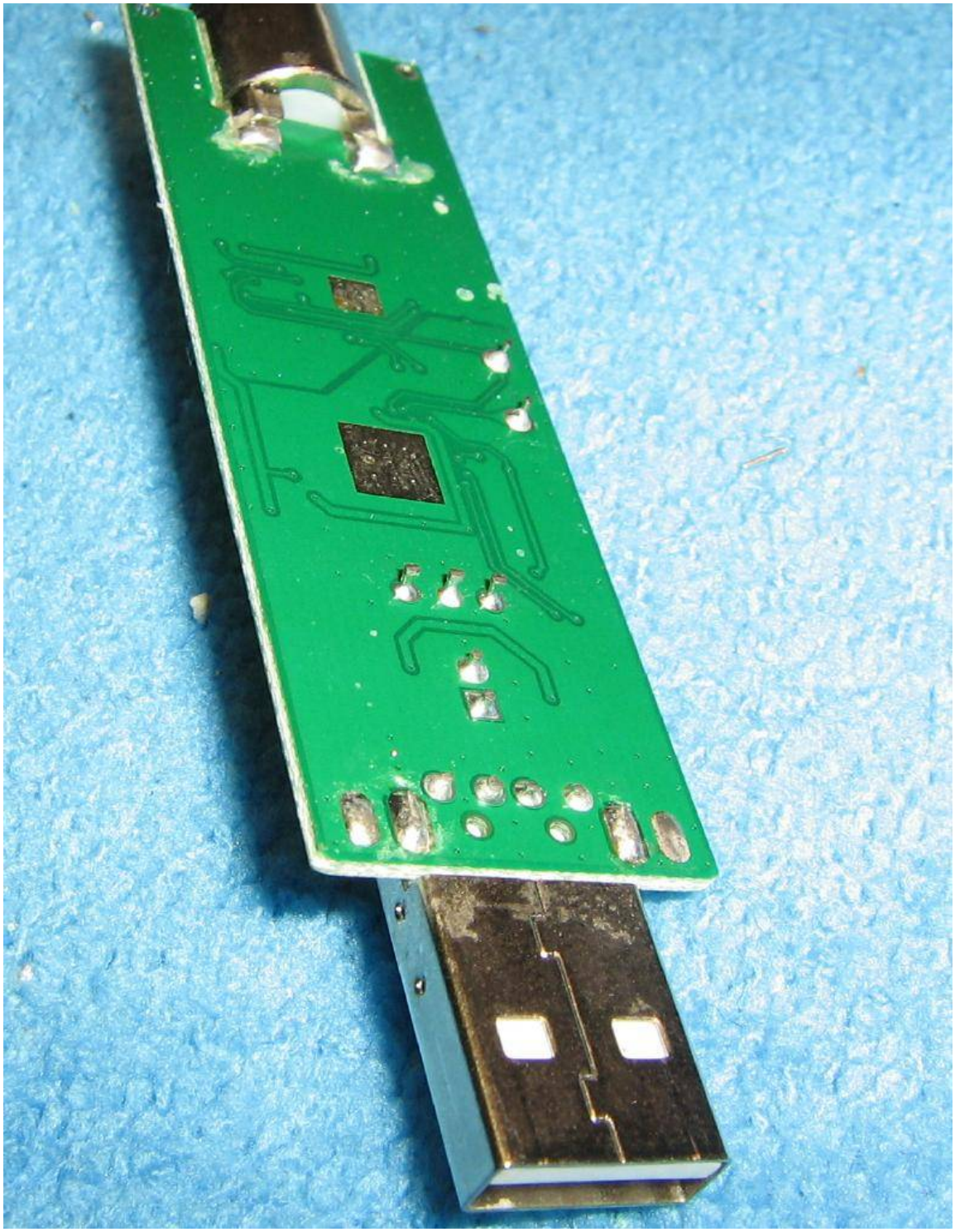
RF input in on the top, then the Elonics E4000 and Realtek RTL2832U.

A 28.8 MHz crystal is to the left of the Elonics E4000.

The black rectangle just below the Realtek RTL2832U is an IR sensor for a remote control.

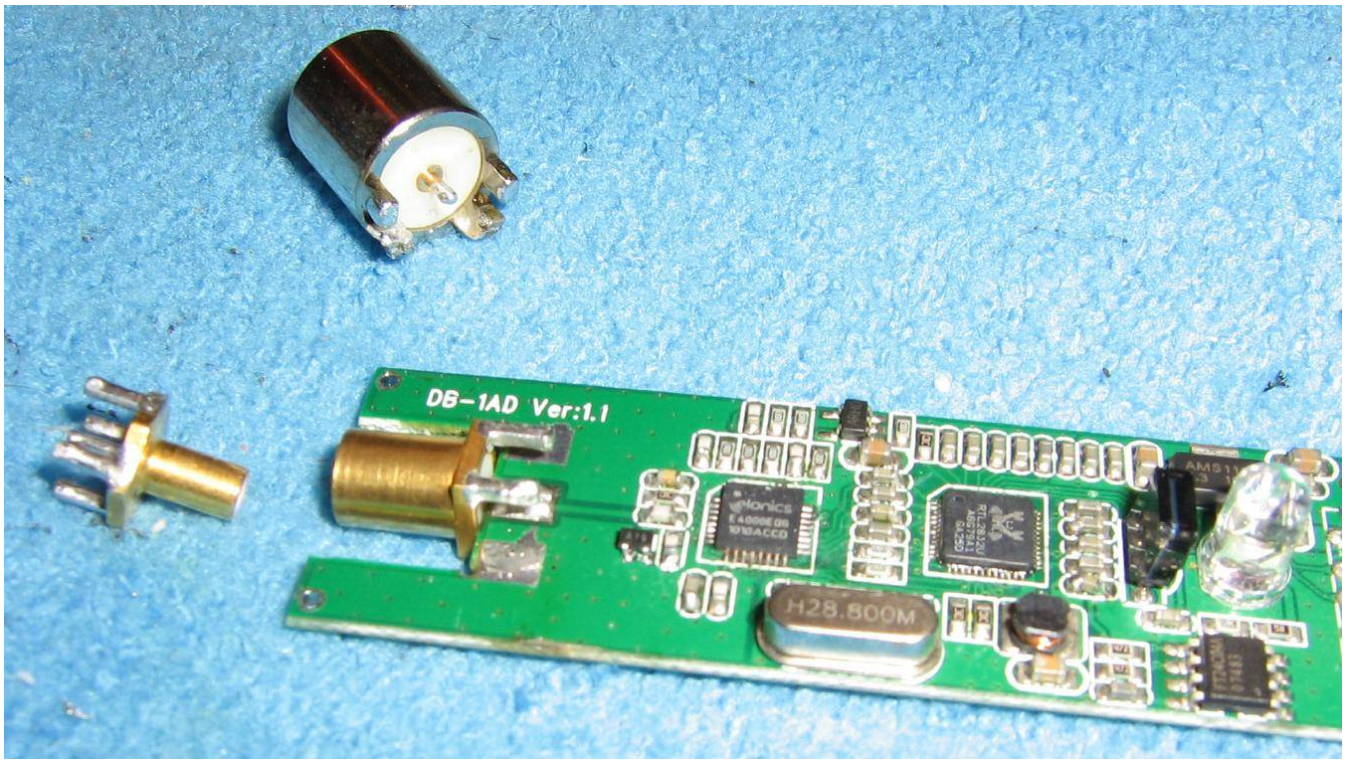
The LED is for power indication and a 3.3 VDC voltage regulator is on the lower−right.

The USB jack is along the bottom.



Bottom view.

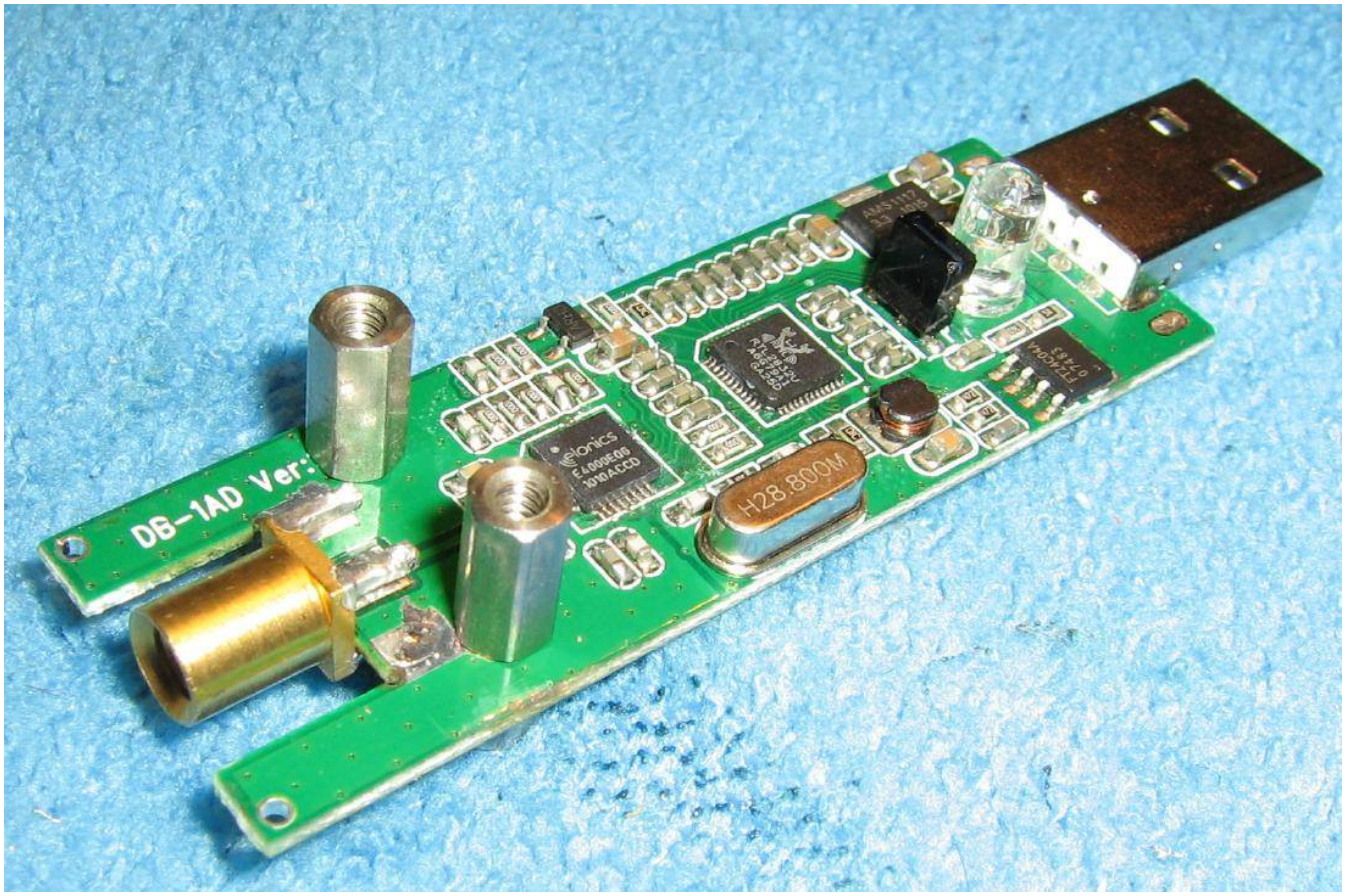
Antenna input is on the top.



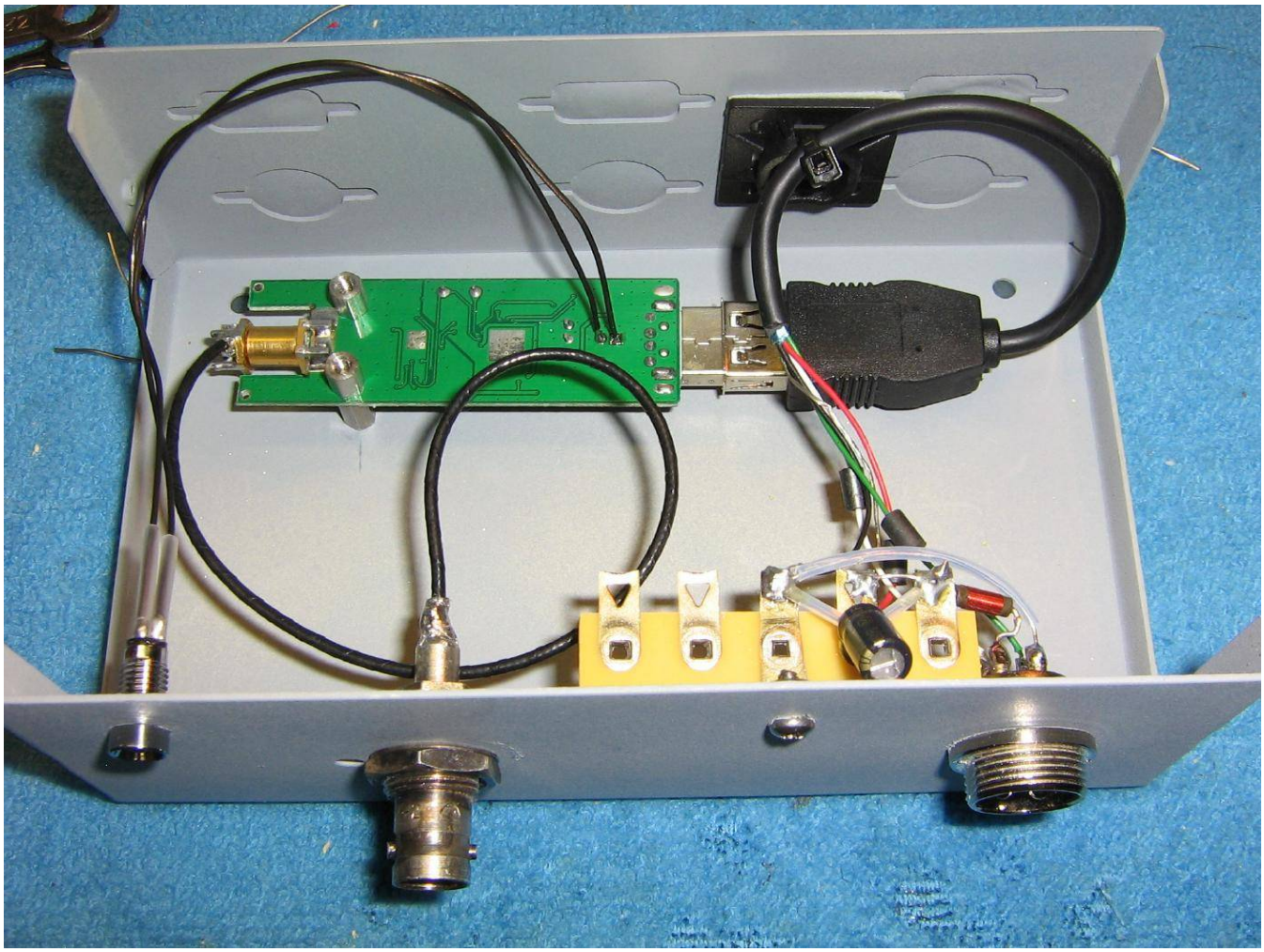
The stock PAL antenna connector was removed on the RF input and a salvaged SMB connector was added.

This will allow for easy removal of the RF input while still maintaining the proper impedance.

A small coaxial pigtail will also work, for more permanent installations.



Two threaded #6 posts were added to the tuner's circuit board to allow for "stand–off" mounting.

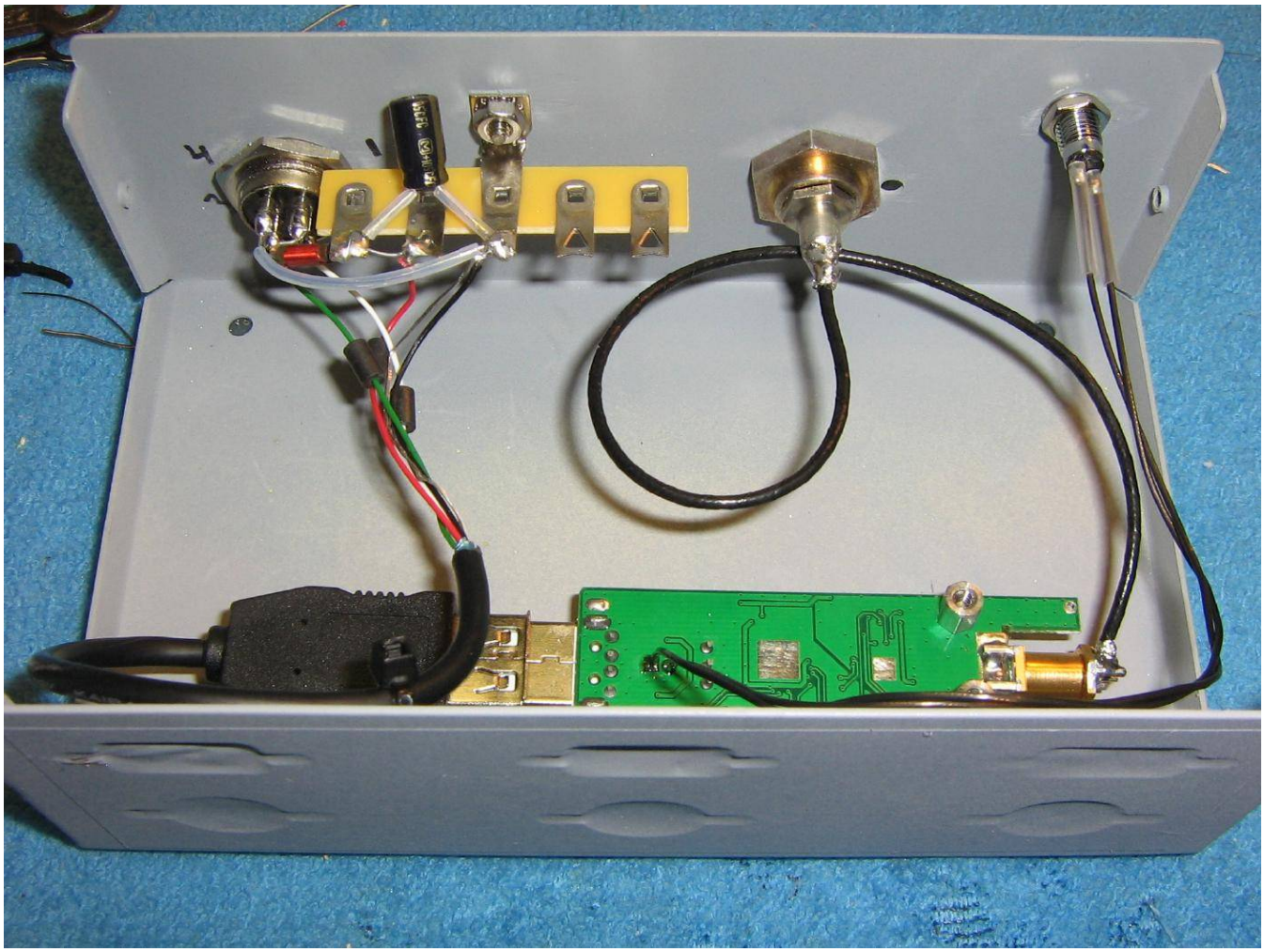


Mounting the receiver circuit board in an old keyboard switch case.

An USB extender cable was salvaged to allow the tuner to be easily disconnected.

The USB input from the computer is via a shielded 4–pin microphone jack. This is a bit of overkill, but shielded USB jacks are hard to find.

A high–quality panel–mount BNC jack is used for the RF input.



Alternate view.

The incoming USB +5 VDC power line (red) has a series 10 µH inductor and a shunt 33 µF capacitor added to it.

Ferrite beads where also slipped over the USB's "Data +" (green) and "Data –" (white) wires.

Switching power supplies and radio receivers don't mix... For maximum low–spurious response from the tuner, an external linear +5 VDC power source should be used.

A linear "wall wart–type" power supply and 78L05 voltage regulator should be fine.

Closeup of the salvaged 4–pin microphone connector turned into a nice shielded USB connection.

Be sure to carefully watch your pins if you make this type connection.

28.8 MHz TCXO Option for USB SDRs

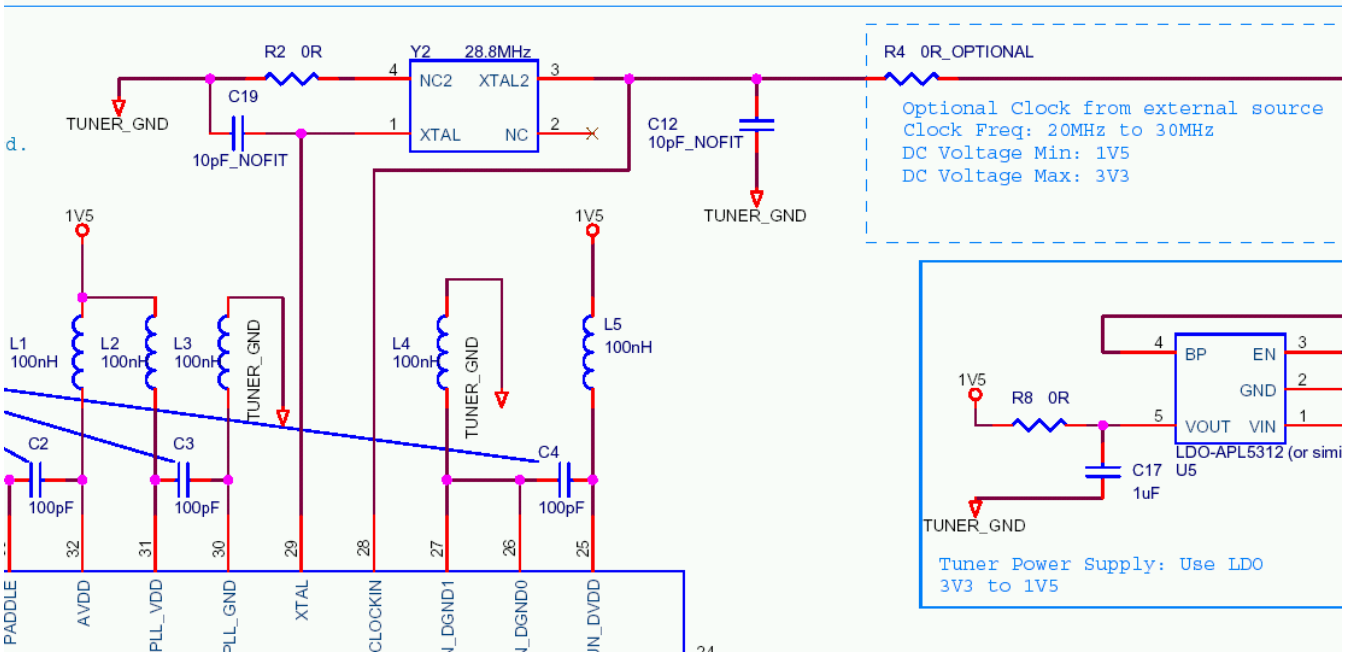
Overview

Most Realtek RTL2832 / Elonics E4000–based tuners use a 28.8 MHz crystal for generating the Phase Lock Loop's (PLL) reference frequency. Ideally, this 28.8 MHz reference frequency should be very stable and with low phase noise. Because these USB tuners were designed to be low cost, they'll often skip on the quality of the crystal used for this frequency. This can result in alot of frequency drift, which you'll notice when operating the tuners in narrowband modes.

While a high–quality standalone 28.8 MHz Temperature–Compensated Crystal Oscillator (TCXO) may be difficult to track down, 14.4 MHz TCXOs are actually quite common. By feeding a 14.4 MHz signal into a "frequency doubling" circuit, we can then generate a "new" reference frequency at 28.8 MHz.

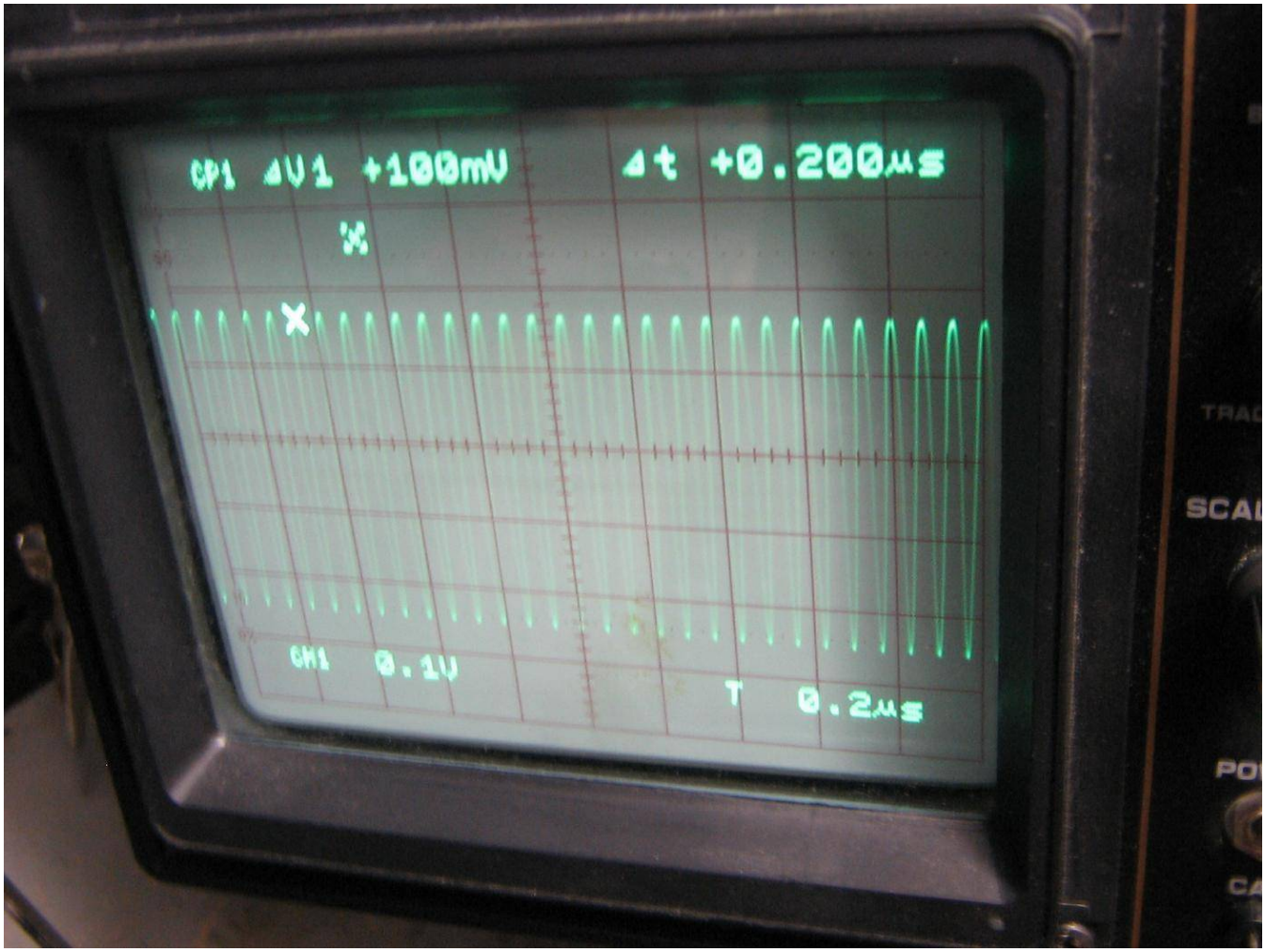
The 14.4 MHz TCXO used for this project is a Meiden CO–T67PZ oscillator. It runs at +5 VDC and generates an approximate 400 mVp–p clipped sine wave output signal with its phase noise –140 dBc at a 10 kHz offset. You can purchase these Meiden oscillators via eBay, or similar oscillators may be salvaged from certain Motorola two–way radios.

A Mini–Circuits SBL–1 double–balanced mixer will be used in a passive "frequency doubler" application. The incoming 14.4 MHz will be split in two and fed to the LO and RF ports on the SBL–1. The doubled output at 28.8 MHz will then be taken via the mixer's IF port. A standard diplexer network and 2N5109 post–mixer amplifier is then used to isolate and amplify the 28.8 MHz signal.



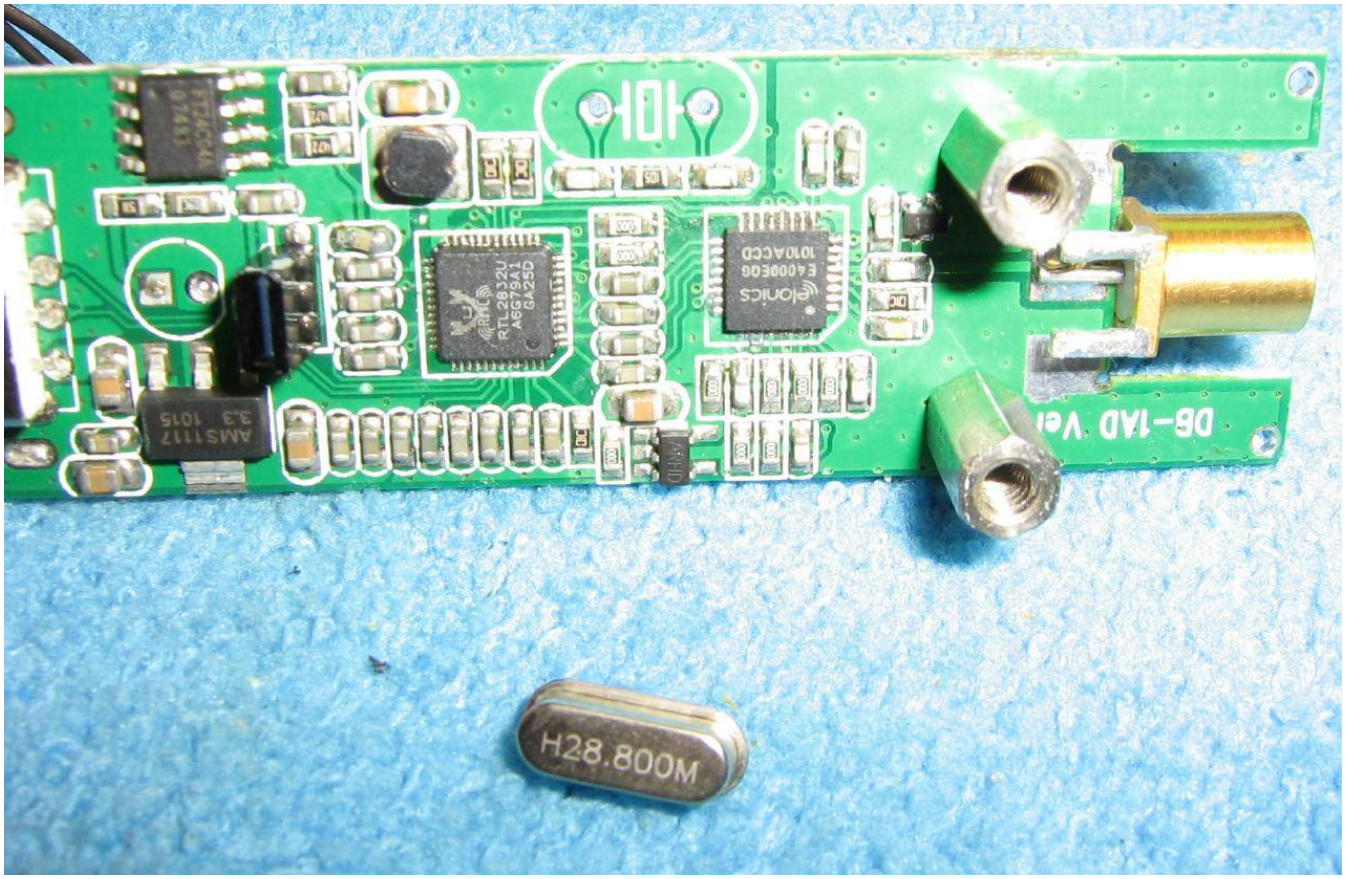
Stock Elonics E4000 Schematic

Pictures & Construction Notes



Output view of a stock Meiden CO−T67PZ 14.4 MHz TCXO.

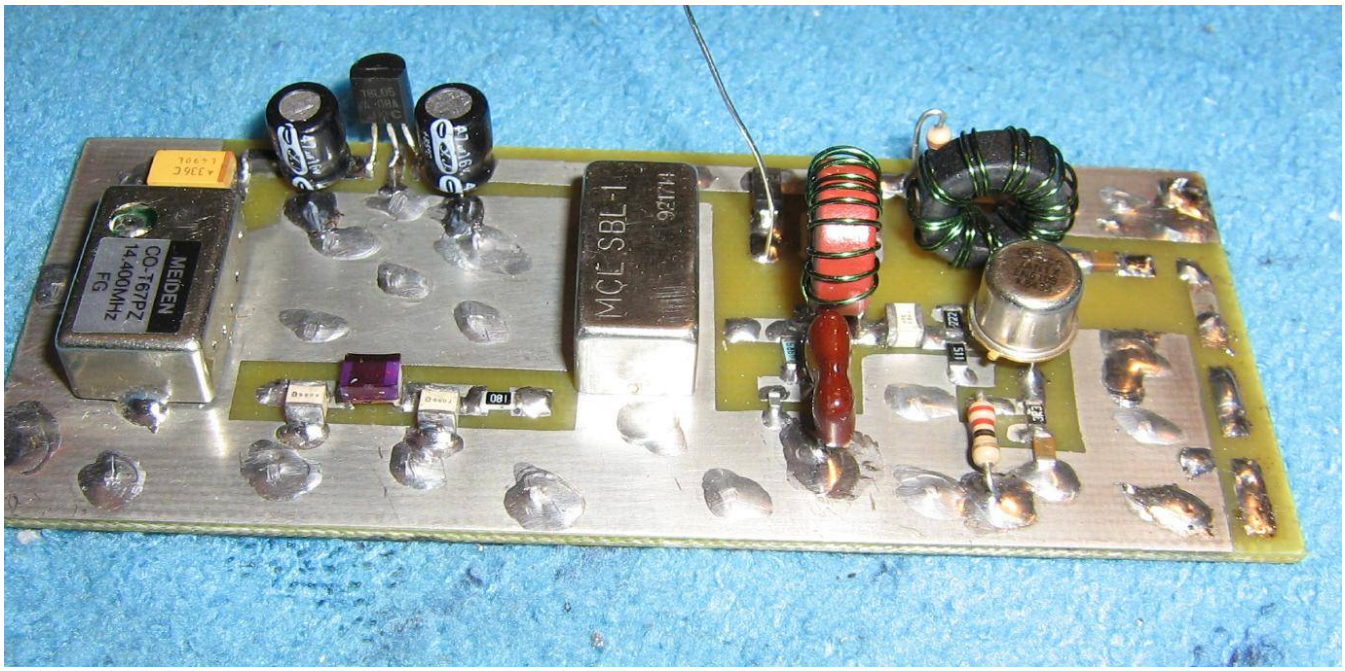
100 mV per division vertical / 0.2 µS per division horizontal.



Removing the stock 28.8 MHz crystal on a Realtek RTL2832 / Elonics E4000–based tuner.

Save this crystal, as it may be possible in a future project to turn it into a crystal filter to further clean up the reference signal's phase noise.

It's not necessary to remove any of the crystal's loading capacitors.



Overview of the passive frequency doubler circuit board.

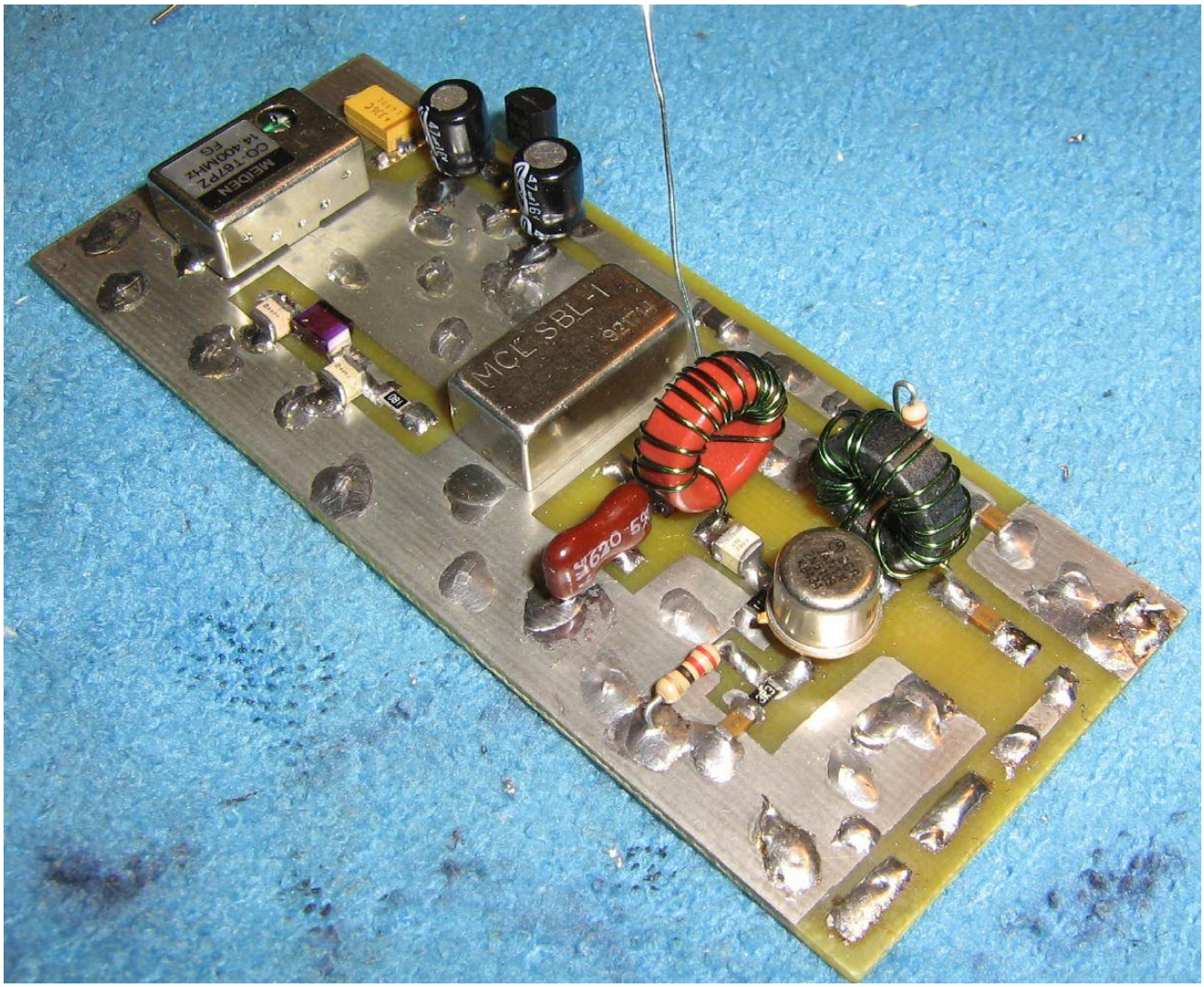
This project is still experimental and should be considered a work–in–progress.

The Meiden CO–T67PZ 14.4 MHz TCXO is on the left, the Mini–Circuits SBL–1 is in the middle, and the 2N5109 post–mixer amplifier is on the right.

A simple 3–pole low–pass / impedance matching network cleans up the 14.4 MHz signal before a passive resistive divider network splits the signal for the SBL–1's RF and LO ports.

On the IF output of the SBL–1 mixer is a LC diplexer network and a 2N5109 transistor–based amplifier. This is a bit of overkill, but it works.

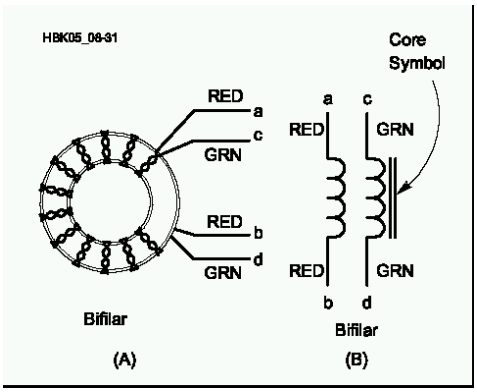
The frequency doubler circuit does require +12 VDC to operate. You'll want to run the USB tuner from an external linear DC power supply for maximum performance anyway, so it's not that big of a deal.

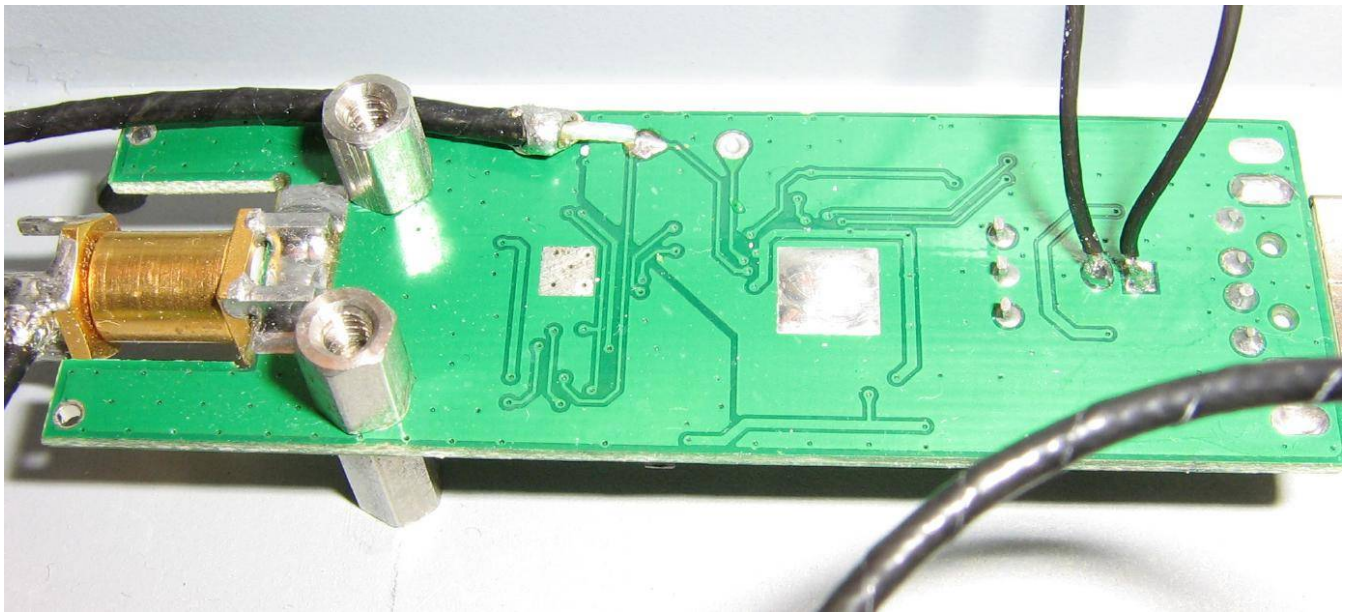


Alternate view.

The IF output of the SBL−1 passes through the LC diplexer network to isolate the 28.8 MHz signal and shunt the out−of−band signals to a 50 ohm load. This helps the mixer "see" a 50 ohm impedance at all the mixed frequencies to reduce any distortion.

The 2N5109 transistor provides around 20 dB of gain to overcome all the losses which results from the passive frequency doubling action.





Applying the new 28.8 MHz signal to the USB tuner.

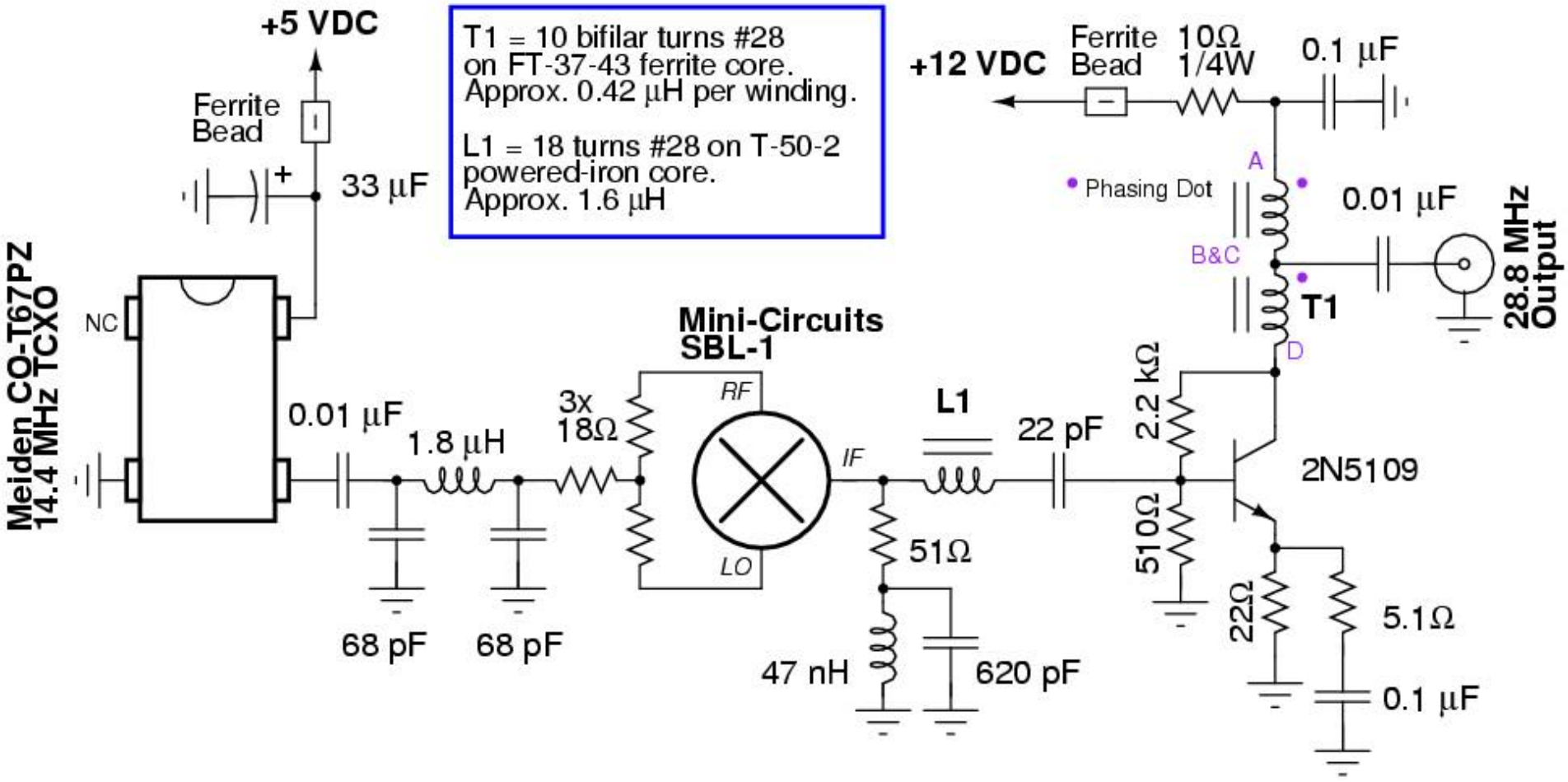
Shown above is the bottom of the Realtek RTL2832 / Elonics E4000–based tuner, with the antenna input on the left.

The signal should be applied directly to pin 29 of the Elonics E4000. You may want to trace this out with a meter before hand.

Experimentation showed the Elonics E4000 tuner requires a 28.8 MHz reference signal at around 0 dBm.

14.4 MHz Frequency Doubler

14.4 MHz In / 28.8 MHz Out

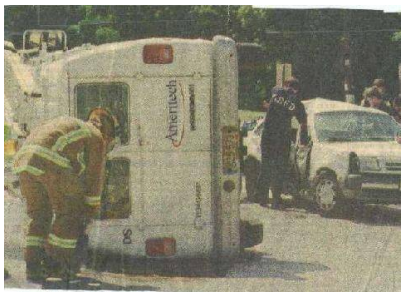


```
,ermanal: WC48//
FRI 10-DEC-1993
14.35.26

        W E L C O M E                    Enter Userid and Password

          T O   T H E

      W I S C O N S I N                  Userid          ==>
                                         Password        ==>
            B E L L

        N E T W O R K

                                         PF01/13 ==> Help
                                         PF06/18 ==> Change Password
                                         PF12/24 ==> Logoff
```

Beginning 12/13, menus will be changed to reflect the true names of the WI TSO's. Session ids TSOA, TSOB, etc. will be changed to the correct WATSxx name. Please see Newsline within TSO for details.

Bonus

End of Issue #104



Any Questions?

Editorial and Rants

Never in a million years would I believe I'd have to read a Pravada article to get the truth about Obama...

Communist Victory Amerika

December 3, 2012 – *From: english.pravda.ru*

by Xavier Lerma

Once upon a time there once was a country so beautiful with spacious skies, with purple mountain majesties where everyone sang "God shed his grace on thee." It promoted freedom of religion and allowed Christianity to grow. It gave opportunities for everyone to better themselves in education and create businesses that not only made them rich but allowed those in poverty to prosper and become middle class citizens. It became the richest country in the world and millions immigrated to this land. On the other side of the world was an evil government that enslaved its people. It saw this nation as a threat to its plan of world domination but knew conquering it could never be done militarily. "Before we can assume power we must corrupt" they said.

They began to invade the country as a virus infects a body. Like the plague it engulfed the whole land and the strongest lamented over the nation's weakness. These creatures twisted the words freedom into the freedom to do every vice and evil the wicked could conceive. It turned everything upside down. Good was bad. Men became women. Women became men. Sodom and Gomorrah was rebuilt. Capitalism was no longer there to help others but selfishness grew and greed vomited out its illicit pleasures of entertainment that blinded the minds of millions. Those who could not be perverted were given comforts and toys that would satisfy them. Souls became empty and they reached out for anything that gave them temporary peace again and again.

Through all the invaders efforts there were still noises of discontent. Their shadow government, their "Shadow Party" was not completely effective. There were people who could see the sinister changes in their country. They saw the rising tide of violence. They saw how families were being destroyed as the devil rocked every cradle. The sane were considered insane. The foolish were praised as philosophers. Judges were deranged and released from prison murderers, rapists and child molesters back into the public to kill, rape and sexually assault children. Good people watched in horror on TV. Was it a movie, TV show or was it reality? Like a cat toying with a mouse before it's killed, millions were entranced before meeting their end.

These invaders had to move forward quickly. Their focus on conquering the world weakened their own government. Their very own people had overthrown its yoke of slavery and became free to worship Christ and people were normal again. They were strangers to their own land so they had no choice but to make their home in this foreign country they sought to destroy. No matter. This new country had more power to destroy and influence the world. It is richer and easier to control. They swiftly sat themselves upon the throne and boasted their intentions without fear of being exposed. Their plan of world domination could now be done militarily. "Conquest through corruption was yesterday's game" they said, "We can assume power through military force anywhere, anytime." Promising peace while attacking nations. Promising prosperity while creating poverty. We shall destroy them and they will cheer louder than any people in history.

Those who worshipped their leader lay before him like a whore and gave up their children. They never questioned his background and accepted his lies wholeheartedly. The words of Russian Bishop Ignaty Bryanchaninov in 1927 ring ever so clearly today, "Whoever does not obtain the kingdom of God within oneself will not recognize the Antichrist and will inevitably, become his follower." The presidential elections in Amerika are a set up and always have been after Kennedy was shot.

Americans think the Soviets were not angry about the Cuban missile crisis. While it is true the Soviets did not want a nuclear war they did move Kennedy out of the way and they attacked America within and conquered it. Now they always point at the new Russia with cries of "foul play!" and "stolen elections!" The Communist trick is to accuse their innocent opponent of the illegal activity they themselves are involved in.

Russia in their presidential elections had cameras in every voting station. Anyone could log in and see it. I did it myself. 600,000 Russians volunteered to monitor the Presidential Elections Online. ID and Russian language only was required. Paper ballots avoided fraud. Electronic voting in Amerika is a joke. Foreign observers were accepted in Russia and rejected in Communist Amerika. Any Russian could sign up to volunteer to watch out for voter fraud in person. In the end the election reflected the opinion polls from dozens of independent sources in Russia. Putin was the most popular and he was elected.

In Amerika there are only 2 main parties. Oh sure, there are others but one would never know it the way the Amerikan media hides them. Russia had 5 parties that qualified for the presidential elections. The mainstream media in Amerika demonized Putin and insulted Russians in this video. Amerika will never show Putin like this video or this on TV. Amerika calls it Russian propaganda. Again, the Communist trick is to accuse their opponent of illegal activity they themselves are involved in. The Communists were the bully in school who first threw a rock at a little boy and then immediately blamed the little boy for doing it. It's the Communist way. It's the Chicago way. They blame others for being a racist when they are really bigots themselves.

Dr. Martin Luther King

Dr. Martin Luther King said "character" was more important than the color of one's skin. The Communists had him shot. They tried to help him at first thinking they could use him to divide America. However, if "character" is more important, then they cannot divide the masses and promote social strife. They need to color code the masses and divide them just as Stalin did when he divided Russia by its ethnic boundaries. They need the blacks to hate whites not peace. Americans have been brainwashed by the Communists to be Amerikans in the new USSA, United Socialist States of Amerika.

Some people have been fooled to think that there is a cultural difference that will not allow the races to coexist. Most Hispanics, who are traditionally conservative, ally themselves with a Democratic party that promotes abortion and gay marriage. Again, they too have been happily misled. All Democrats, most Republicans and 90% of blacks hate or ignore intelligent and successful blacks like Dr. Alveda King, Alan Keyes, Allen West, and Wayne Perryman. Alan Keyes called Obama a "radical Communist" in this video in 2009 and he is correct, but no one ever acknowledged him. Intelligent minorities that can see through the Communist lies are ignored or attacked. Their own race attacks and laughs at them in almost the same way Christ was attacked by His own people before He was crucified.

Corrosion of Evil

Brave souls spoke out against this new regime but it was too late. They were in the minority. They failed to listen over 30 years ago when a prisoner from the invading country was exiled with them. He spoke out and tried to warn them before this day came.

"Destructive and irresponsible freedom has been granted boundless space. Society appears to have little defense against the abyss of human decadence, such as, for example, misuse of liberty for moral violence against young people, motion pictures full of pornography, crime and horror. It is considered to be part of freedom and theoretically counter–balanced by the young people's right not to look or not to accept. Life organized legalistically has thus shown its inability to defend itself against the corrosion of evil."

Free love, sex, drugs and rock and roll. "This is a free country, man!," they all shouted. All manner of illicit behavior was expressed publicly. They did not care what others said because they have rights do as they want. "Daddy does not exist so we can do anything." These childish mentalities only rotted away their lives and society. The foreign invaders had already taught them in school all they needed to know. Their seed had been sown in universities, colleges and public schools years ago.

Mainstream Media

"In–depth analysis of a problem is anathema to the press. It stops at sensational formulas. Such as it is, however, the press has become the greatest power within the Western countries, more powerful than the legislature, the executive and the judiciary. One would then like to ask: by what law has it been elected and to whom is it responsible?"

He knew the mainstream media was controlled by the Communists and he was trying to awaken the minds of the satisfied and well fed masses. These talking heads he warned about could but only serve their master too well. They were journalists who had sold their souls to the devil. They were given the power to change America and they did.

Communism failed in Russia so the mainstream media in Amerika always shows protesters in Russia to Americans without telling them the protesters are Communists or that the protesters are paid by the Amerikan embassy. The Amerikan media never shows religious gatherings in Russia or Putin in Jerusalem video. They hate the fact that Christian Russia overcame Communism. They also twist the words of America's founding Fathers, "separation of church and state" to mean that Christianity is outlawed in public. Deep down in their hearts they want to eliminate Christianity. It is the "opium of the people."

Destruction of the Human Spirit

"I hope that no one present will suspect me of offering my personal criticism of the Western system to present socialism as an alternative. Having experienced applied socialism in a country where the alternative has been realized, I certainly will not speak for it. The well–known Soviet mathematician Shafarevich, a member of the Soviet Academy of Science, has written a brilliant book under the title Socialism; it is a profound analysis showing that socialism of any type and shade leads to a total destruction of the human spirit and to a leveling of mankind into death."

Obvious Warnings

"There are meaningful warnings that history gives a threatened or perishing society. Such are, for instance, the decadence of art, or a lack of great statesmen. There are open and evident warnings, too. The center of your democracy and of your culture is left without electric power for a few hours only, and all of a sudden crowds of American citizens start looting and creating havoc. The smooth surface film must be very thin, then, the social system quite unstable and unhealthy."

Invasion Has Begun

"But the fight for our planet, physical and spiritual, a fight of cosmic proportions, is not a vague matter of the future; it has already started. The forces of Evil have begun their decisive offensive, you can feel their pressure, and yet your screens and publications are full of prescribed smiles and raised glasses. What is the joy about?"

Liberation into Moral Poverty

"..in early democracies, ... all individual human rights were granted because man is God's creature. That is, freedom was given to the individual conditionally, in the assumption of his constant religious responsibility. Such was the heritage of the preceding thousand years. Two hundred or even fifty years ago, it would have seemed quite impossible, in America, that an individual could be granted boundless freedom simply for the satisfaction of his instincts or whims. Subsequently, however, all such limitations were discarded everywhere in the West; a total liberation occurred from the moral heritage of Christian centuries with their great reserves of mercy and sacrifice. State systems were becoming increasingly and totally materialistic. The West ended up by truly enforcing human rights, sometimes even excessively, but man's sense of responsibility to God and society grew dimmer and dimmer. In the past decades, the legalistically selfish aspect of Western approach and thinking has reached its final dimension and the world wound up in a harsh spiritual crisis and a political impasse. All the glorified technological achievements of Progress, including the conquest of outer space, do not redeem the Twentieth century's moral poverty which no one could imagine even as late as in the Nineteenth Century."

Alexander Solzhenitsyn, one of the greatest writers of our time, stood up to the tyranny that enslaved his country. He exposed the atrocities being done on his homeland in the gulags and slave camps. Over thirty years ago he warned others in this new country only to be ridiculed as being a "boy scout" and ignorant of the real world. He did not serve their purpose. He was ignored or laughed at. When he returned home he received the highest award in Russia, "The Order of St. Andrew."

Russia's Freedom Costly

How did Russia free itself from an atheistic government? Through the blood of martyrs and prayers of the faithful, Russia's penance purified its soul and allowed it to embrace its Savior. Like the prodigal son Russia came to its senses and went home to his Father. The living are at peace and the tortured and murdered faithful are in paradise.

And I Saw Them That Had Overcome the Beast

"These are they who are come out of great tribulation, and have washed their robes, and have made them white in the blood of the Lamb. And God shall wipe away all tears from their eyes: and death shall be no more, nor mourning, nor crying, nor sorrow shall be any more, for the former things are passed away; And I heard a voice from heaven, as the noise of many waters, and as the voice of great thunder; Singing the canticle of Moses and the canticle of the Lamb, saying: Great and wonderful are thy works, O Lord God Almighty; just and true are thy ways, O King of ages. Who shall not fear thee, O Lord, and magnify thy name? For only thou art Holy!"

The last priest of St Basil's Cathedral was Fr. Ioann Vostorgov. He had written earlier, "... there is not and cannot be complete and absolute freedom for man, that it is limited and must be directed by the Law of God." The free thinking and lovers of mankind, the Communists, did not like what he said so they shot him in 1918. How tolerant they were. All liberals are this way. They talk about the best for mankind and give speeches on tolerance, equality and justice for all while they fill their pockets with riches and impoverish the rest. If you disagree with them they ignore you, shout at you or prefer you dead.

Witnesses

Many other witnesses came forth like Solzhenitsyn who had won a Nobel Prize in Literature in 1970. Others were more demonstrative. In 1990 a monk from the Russian Orthodox monastery at Zagorsk, carrying a life–sized crucifix seven feet tall travelled to Moscow. He stood before Lenin's tomb and straightened the cross before all to see. He raised his head and shouted to Gorbachev and his cronies in a voice of thunder: "Mikhail Sergeyevich, Christ is Risen!" A year later the Soviet Union fell.

Conclusion

Is there a Communist in every closet? No, but the threat was a horrible reality in Russia as it is now in Amerika. Do they admit they are Communists? How naive you are if you think they will openly say that word. Many do not even know that they are. They prefer to ridicule anyone who uses the word "Communist." The peaceful solution is to repent from sin.

Penance is necessary. Laugh if you will all you cynics and enjoy your suffering! "Christ's death on the cross is nonsense to those who are being lost; but for us who are being saved it is God's power" – St Paul. Christianity is the only religion where God sacrifices his son to have us share eternal life with Him. Scream your hearts out all you adversaries and possessed and declare our imperfections and failures! Side with the accuser the devil and enjoy your torment tomorrow! The effects of Communism were already manifested in Russia during the last century. To ignore it or to think somehow it will work elsewhere is to condemn oneself to complete darkness.

There are physical laws and there are also spiritual laws that govern this universe. Ignore the spiritual laws if you will but they still exist unseen as the wind. The physical world is a shadow of the spiritual world. As Malachi Martin, the author of Hostage to the Devil wrote, "A bird flies not because it has wings, but because it is a bird." There is nothing new under the sun. Human nature is the same throughout the annals of antiquity. The people of Rome no longer have slaves and persecute Christians in the arena. Follow Russia's lead out of the same tyrannical darkness. Repent or be enslaved. I remind those in the USA who have remained faithful:

"But they that hope in the Lord shall renew their strength, they shall take wings as eagles, they shall run and not be weary, they shall walk and not faint." –Isaiah 40:31

And the public reacts to the Obama's regime continued attacks on our 2nd Amendment rights:

Sunday

Monday

Tuesday

"High–Capacity" Magazine Rack – Sold Out

The Jewish attack on Christian nations continues... Remember, most of these "atheists" are really Jews trying to strip our nation of its Christian identity, much like the Jewish Bolsheviks did to Russia after 1917.

Anti–Nativity Scrooges Selective In What Gods They Toss Out Into The Cold

December 21, 2012 – *From: bloggernews.net*

by Frederick Meekins

For decades, Santa Monica churches erected nativity scenes on municipal park land there in celebration of the Christmas season. However, the onward march to abolish the assorted foundations upon which America was built continues unabated and is now even seeming to accelerate as evidenced by increasing numbers of the able bodied voting for demagogues promising bounty the recipients did not have to lift a finger for and to solemnize with one of society's highest recognitions relationships once considered so far beyond the boundaries of acceptability that the respectable were often too ashamed to even speak of. As such, even those trappings held over from the previous world order that brought joy and happiness to the adherents of beauty and truth must be eliminated.

In 2011, the authorization process for erecting the Nativities was altered so that many of the permits ended up going not to churches but rather to a motley assortment of unbelievers. As a result of the hassle and embarrassment, under the excuse of the necessity maintaining an unobstructed seaside view, municipal authorities decided to do away with depictive winter displays altogether.

The ultimate reason though is to deny access by any particular viewpoint by suppressing them all equally. Sort of the socialistic notion that everyone is equal because everyone is equally miserable.

Cutting edge commentary will likely focus on the here and now with how the tradition has been abolished in its entirety. However, the way the issue was handled in 2011 still gives rise to observations as pertinent today as they aptly apply to the overall tenor of the age in which we live rather than the narrow focus of a particular year which has already elapsed.

In 2011, one of the displays erected by the apostates and unregenerates read "What myths do you see? 37 million Americans know myths when they see them." Pictured along with the slogan were images of Neptune, Santa Claus, Jesus and Satan.

Of course, the Old Deluder, the Devil himself, has no problem being depicted as a buffoonish cartoon villain since, though he has a massive ego having at one time conspired to set his throne on the mount of the congregation in his attempt to usurp the place of the Almighty. At this point in the game, he is more concerned about dragging down as many as he can with him to eternal damnation rather than to get as many as possible to swear an eternal positive affirmation to his infernal name.

Of course, especially in a place like California, it really doesn't take all that much courage to thumb one's nose at Christ either. After all, He was the one that admonished the insulted to turn the other cheek and those ready to call for Crusades on behalf of His name, even if not in His spirit, don't exactly hold the sway they once did.

So shouldn't those wanting to take a courageous stand in the name of the Great Emptiness or however else one might be inclined to depict nothing whatsoever take on a figure whose backers show a little more teeth? For instance Islam? These fanatics threatened the producers of South Park for even obscuring the view of the specific personage that was suppose to be in the bear costume.

However, it seems these leftists converging upon California only go out of their way to have Judeo–Christian religious figures removed from view on public property. They seem to exhibit little opposition to deities advocated by less than Biblically acceptable religions and forms of belief.

For in California, in the mid 90's a monument costing the taxpayers nearly $500,000 was erected to Quetzalcoatl. Quetzalcoatl is the winged serpent god from Aztec mythology around which a number of Hispanosupremacist front organizations hope to repaganize and de–Christianize this targeted demographic in preparation for the uprising against the United States when insurgents intend to slaughter the remaining Whites in disputed Southwestern territories.

Atheism is the belief that God does not exist. To be consistent, that would include those of a non–Christian variety as well.

Thus, it would be reasonable to conclude that there must be a greater overarching, more pragmatic commonality linking those that believe in no God and those that believe that higher order beings condescended down to our level who, rather than shed their blood and died on our behalf, insisted that our blood be shed and lives sacrificed to placate the base lusts of these craven entities whether the victims were willing or not. That shared commonality is nothing less than an outright hatred of the God that is there and a desire to see His followers silenced.