N1MMPlus Use for CMARA Field Day
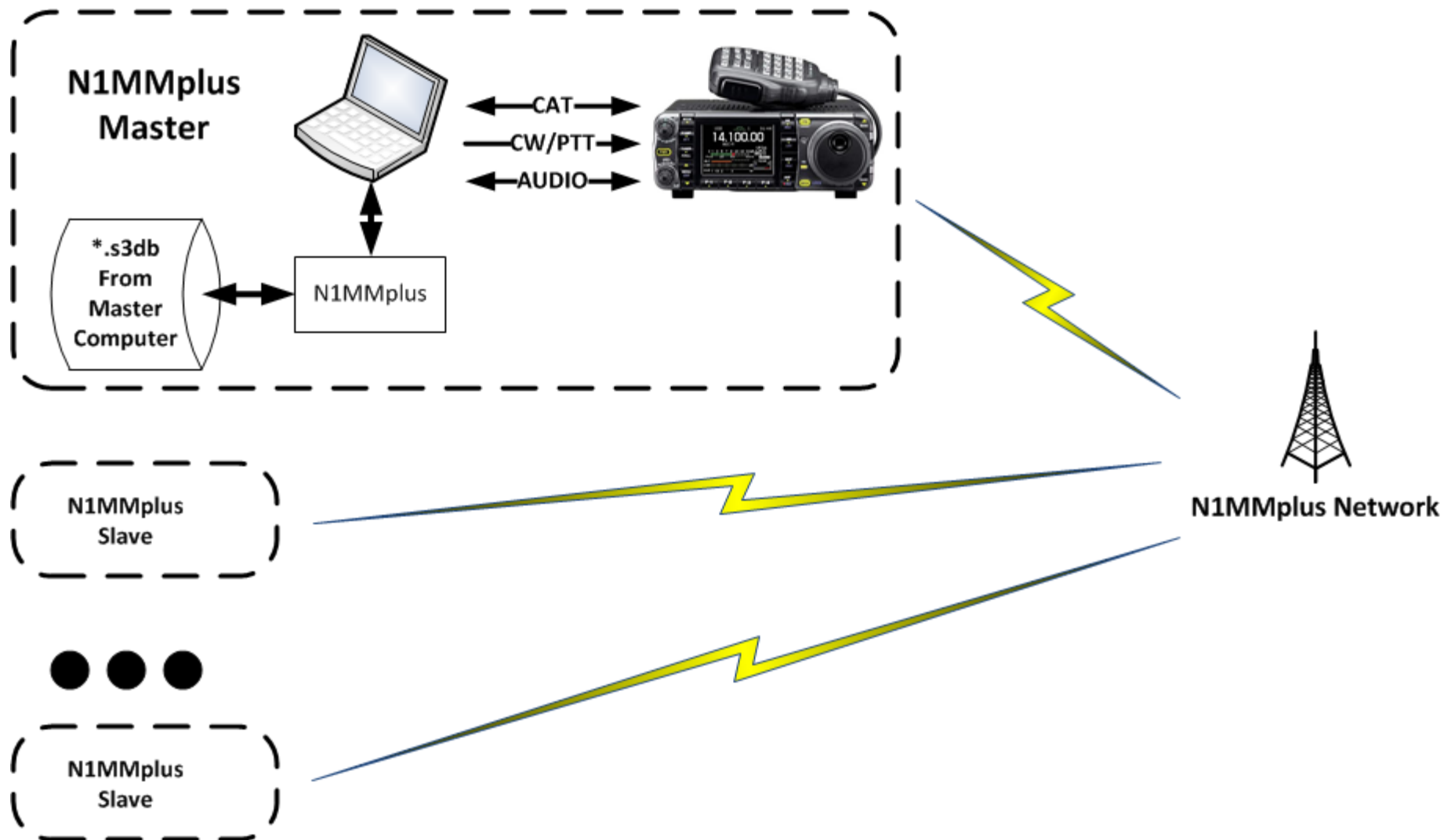
By Terry G. Glagowski / W1TR
updated 6/7/15 19:28

- N1MMplus Overview
- Software Installation
- Hardware / Software Setup
- Database Setup
- Contest Log Setup
- Band Setup
- QSO logging
- Log Consolidation and Submittal
- User Support
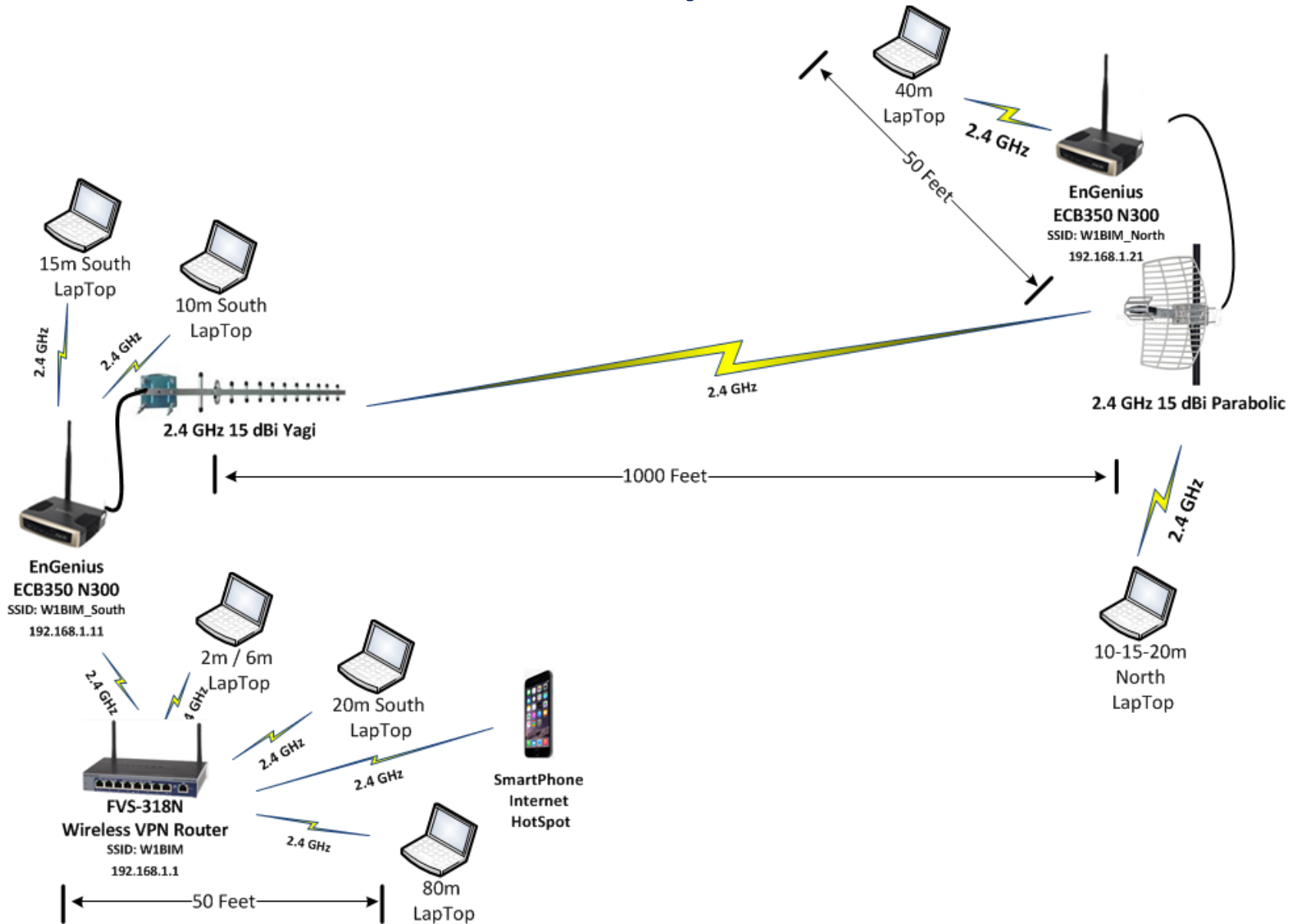- Summary
- Quick Sheet at Last Page of Presentation

N1MMplus Overview

- Totally FREE ! (no license fee)
- Runs on Windows XP, Vista, Win7, Win8 (32 or 64 bit) (no Win95 / Win98)
- Does NOT run on other operating systems (MAC, Linux)
- Nearly ALL Versions are compatible with one another (same file format)
- Supports almost EVERY contest
- Used by nearly ALL big-time contesters (and small timers)
- Actively Supported, User Groups
- Stand-Alone operation (no connection to radio required)
- Automatic Computer-Aided-Transceiver (CAT) control available
- CW Keyer with PTT (keyboard window CTRL-K)
- Voice Keyer with PTT (prerecorded phonetics & messages)
- Interface to MMTTY, MMVARI, FLDIGI, and other software
- Export to ADIF and Cabrillo Format, Import from ADIF

N1MMplus Network Block Diagram

CMARA Field Day WiFi Network

40m LapTop

2.4 GHz

50 Feet

EnGenius
ECB350 N300
SSID: W1BIM_North
192.168.1.21

2.4 GHz 15 dBi Parabolic

15m South LapTop

10m South LapTop

2.4 GHz

2.4 GHz

2.4 GHz

2.4 GHz 15 dBi Yagi

1000 Feet

2.4 GHz

EnGenius
ECB350 N300
SSID: W1BIM_South
192.168.1.11

2.4 GHz

2.4 GHz

2m / 6m LapTop

20m South LapTop

2.4 GHz

2.4 GHz

SmartPhone
Internet
HotSpot

10-15-20m North LapTop

FVS-318N
Wireless VPN Router
SSID: W1BIM
192.168.1.1

2.4 GHz

50 Feet

80m LapTop

Software Installation

- N1MM Logger + Website http://n1mm.hamdocs.com/tiki-index.php
- Select "Files"
- Download and Install "N1MMplus Full Install"
  Install by clicking on the self-installing .exe file
- Download and Install "N1MMplus Latest Update" use latest version
  W1TR will provide the standard update to use at FD meeting or FD site
  Install by clicking on the self-installing .exe file
- Use the default directories for everything (unless...)
- The N1MMplus Full Install and Standard Update are on thumb drive.
  Networking requires everyone to use the SAME EXACT version.
  Networking requires everyone to start with the same FD LOG.
- Copy the 2015 CMARA FD Log (2015 CMARA Field Day.s3db) to
  C:\Users\<USERNAME>\Documents\N1MM Logger+\Databases directory.
- Read the manual!   There is plenty of documentation:
- N1MMplus Logger Manual.pdf
  N1MMplus Quick Start Guide.pdf
  N1MMplus User Guide.pdf
- N1MM References (crib sheets)
- Help Files (some are on the Internet, you will need a connection)

Hardware / Software Setup (1)

- **Set the Computer Local Time / Zone (Eastern Daylight Time)**
Listen to WWV on 2.5, 5.0, 10.0, 15.0, 20.0 MHz or CHU on 3.330, 7.850, 14.670 MHz
Extremely Important to DO !!!, Otherwise Log Data Will Be Garbage, NO WAY to FIX!
The N1MMplus Logger will override this when your station is connected to the network.
Set the time anyway in case we have a problem with networking.

- Station Data will Already be Set in Standard FD Log

- Configure CAT Control

- Open Necessary N1MMplus Windows

- Enable Networking

Hardware / Software Setup (2)
Set Computer Clock

- Click on Desktop Clock (lower right of desktop)

- Set the Date (local time)

- Set the Time (local time)

- Set the Time Zone (eastern daylight time)

- Internet Time Will Not Work (no internet)

- With N1MMplus,
  Master will set time for SLAVES

Hardware / Software Setup (3)

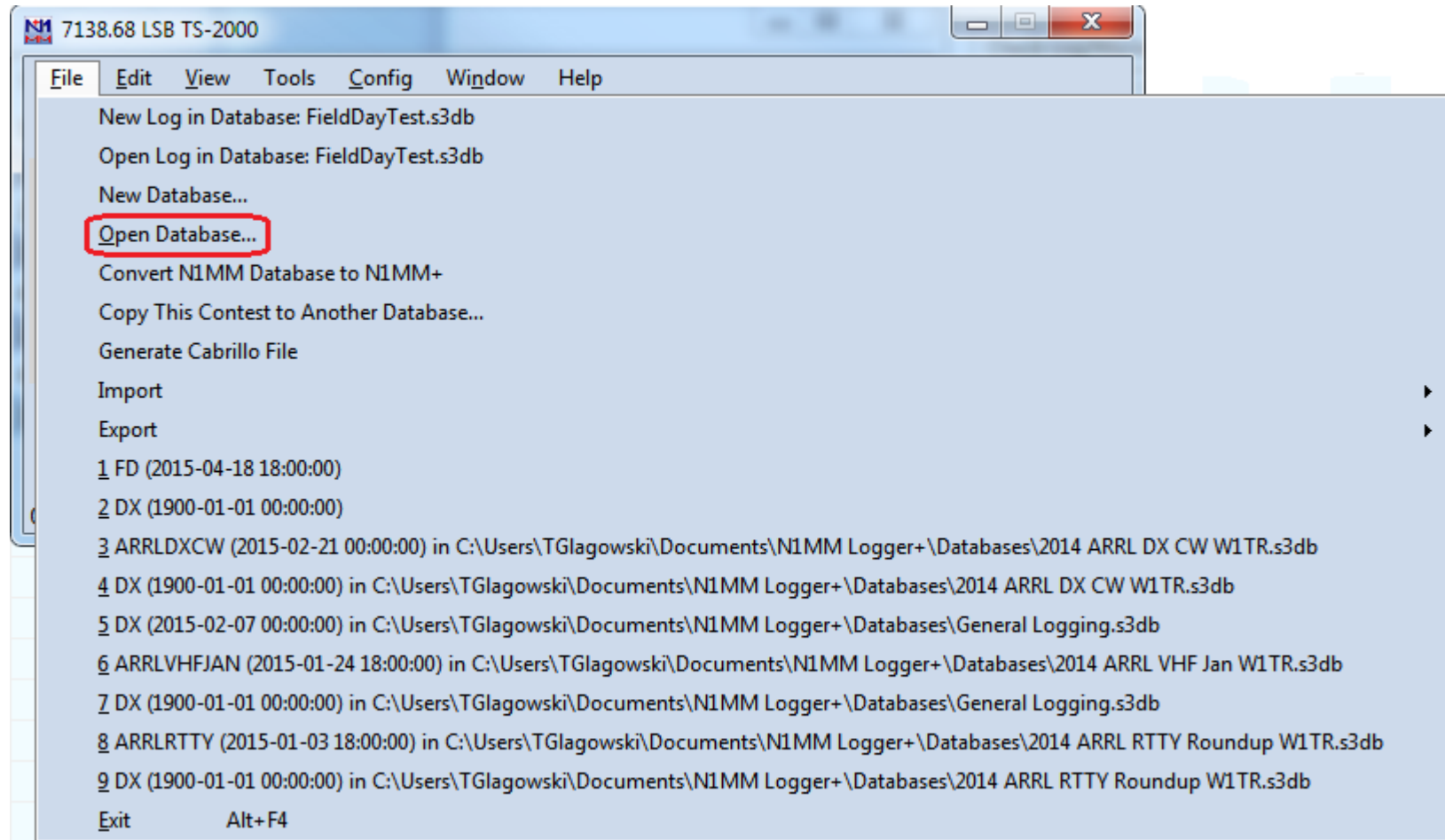## Set Computer Clock
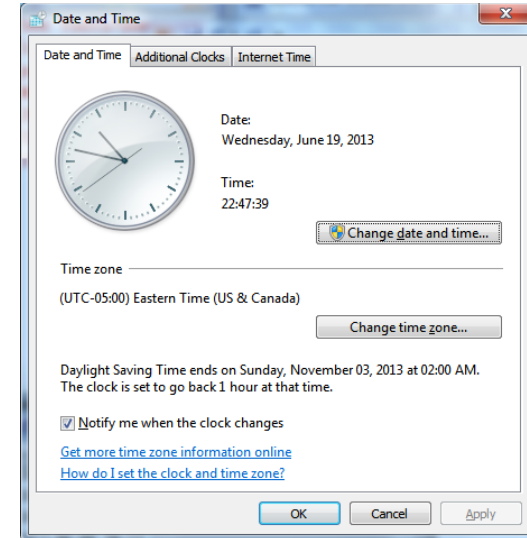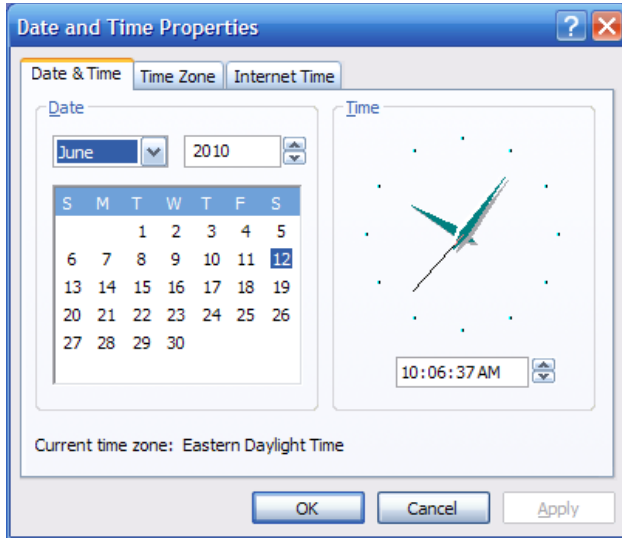
WinXP
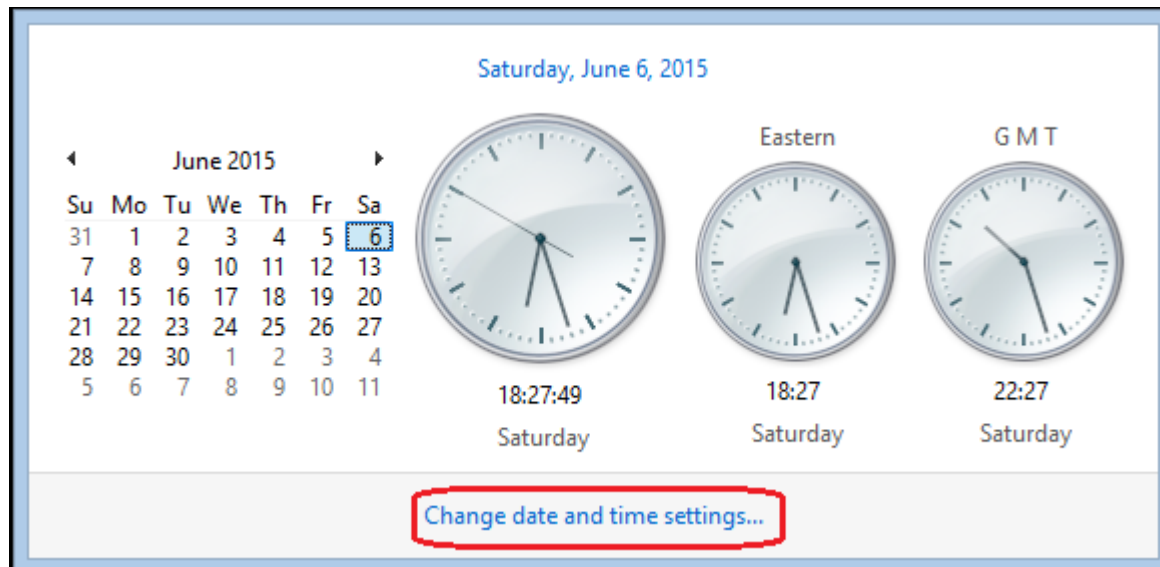
Win7

Win8

N1MMplus QSO Entry Form

When you start N1MMplus, the Main Window opens.
Close ALL other N1MMplus windows (for now).
Select the File Menu Item to Open the FD Log.
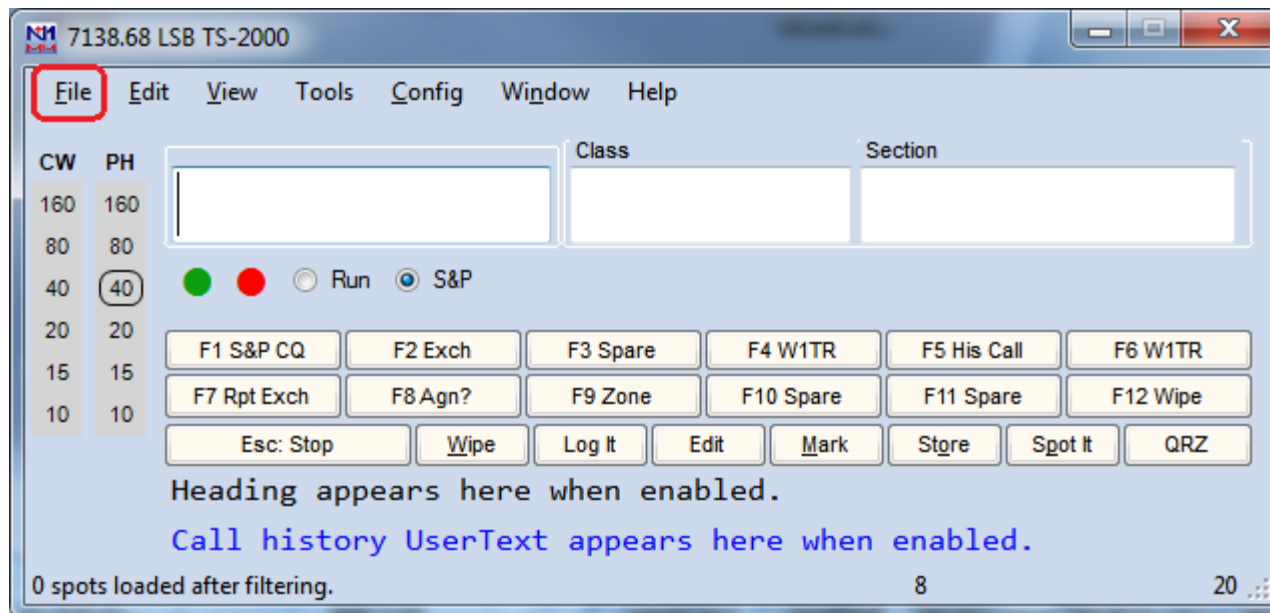
Open Database

Select: Open Database

Select Log
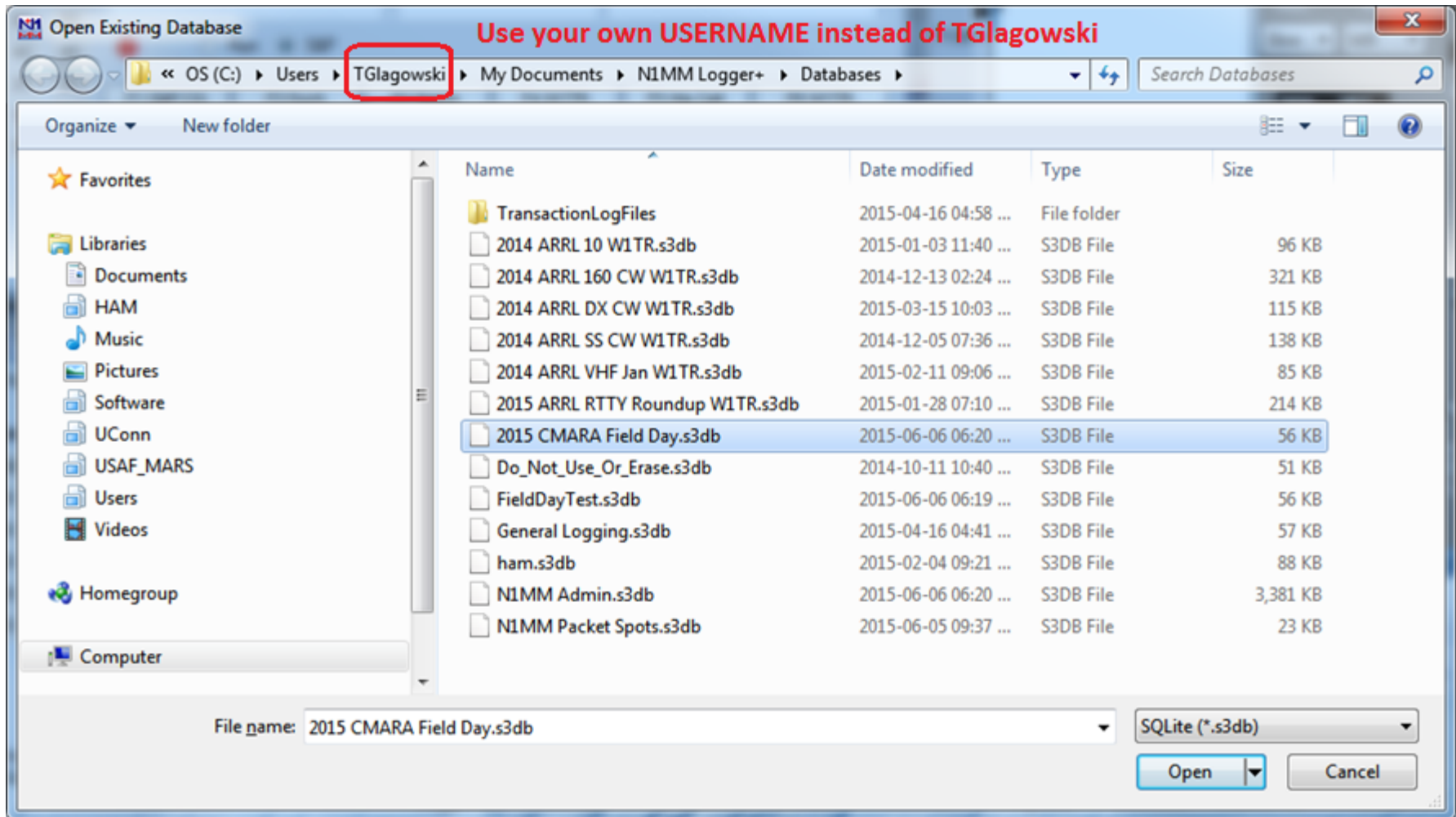
Log Database Is In a Standard Place

- Log Database Folder Name
C:\Users\<USERNAME>\Documents\N1MM Logger+\Databases
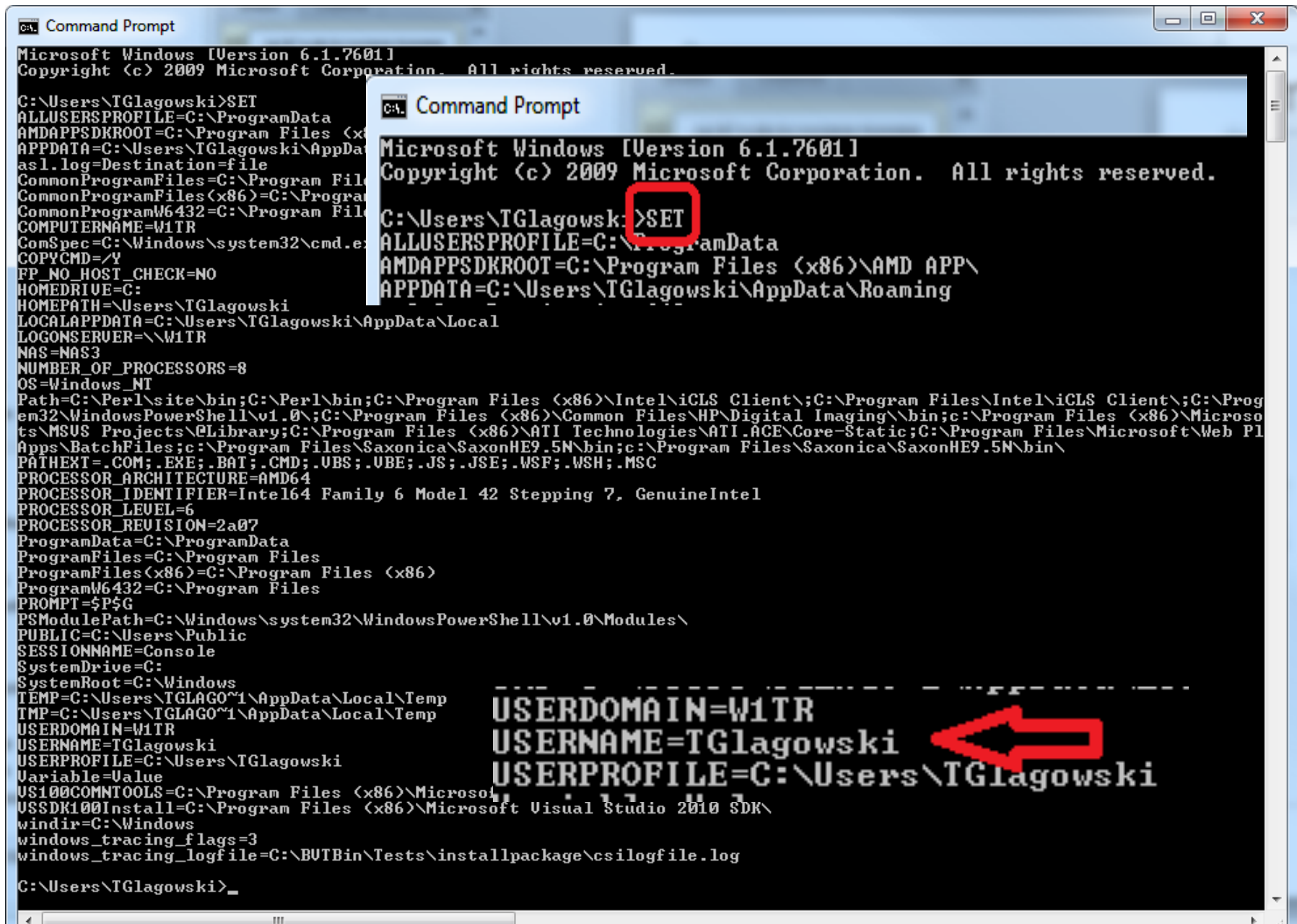
- Log Database File Name
2015 CMARA Field Day.s3db

- How to Determine <USERNAME> (next slide)

- The MASTER computer in the N1MM network will have the ENTIRE log at end of contest (W1TR)

- So will all the SLAVE computers !

How To Determine <USERNAME>

- Open Command Prompt Window from Start Button

- Type SET command
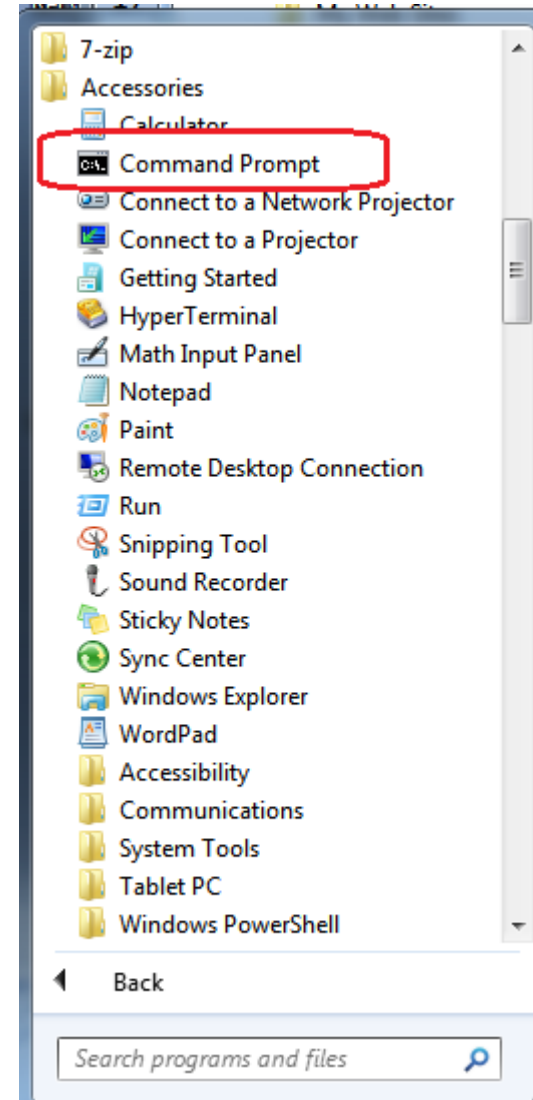
Use SET to Get Environmental Parameters

Open Log in Database

CAT Control Setup (1)

CAT Control Setup(2)

Configurer

Radio Type

Hardware | Function Keys | Digital Modes | Other | Winkey | Mode Control | Antennas | Score Reporting | Audio

CAT Port

○ SO1V   ○ SO2V   ○ SO2R

Port	Radio	Digi	CW/Other	Details	
COM6	TS-2000	☐	☐	Set	57600,N,8,2,DTR=Always On,RTS=Always On,Tx=1
COM7	None	☐	☑	Set	DTR=CW,RTS=PTT,Tx=1
COM8	None	☐	☐	Set	
COM3	TS-2000	☐	☐	Set	57600,N,8,2,DTR=Always On,RTS=Always On,Tx=2
COM4	None	☐	☑	Set	DTR=CW,RTS=PTT,Tx=2
None	None	☐	☐	Set	
None	None	☐	☐	Set	
None	None	☐	☐	Set	
LPT1			☐	Set	
LPT2			☐	Set	
LPT3			☐	Set	

CW / PTT Port

- • Use SO1V
- • Setup Radio Type
- • Setup CAT Port
- • Setup CW/PTT Port (optional if computer CW)
- • Set Details for CAT Port
- • Set Details for CW/PTT Port

OK   Cancel   Help

Details for CAT Port

- Set Speed (Baud Rate) for YOUR Radio
- For some radios (ICOM) you may need to set HEX address
- On Radio and on N1MM
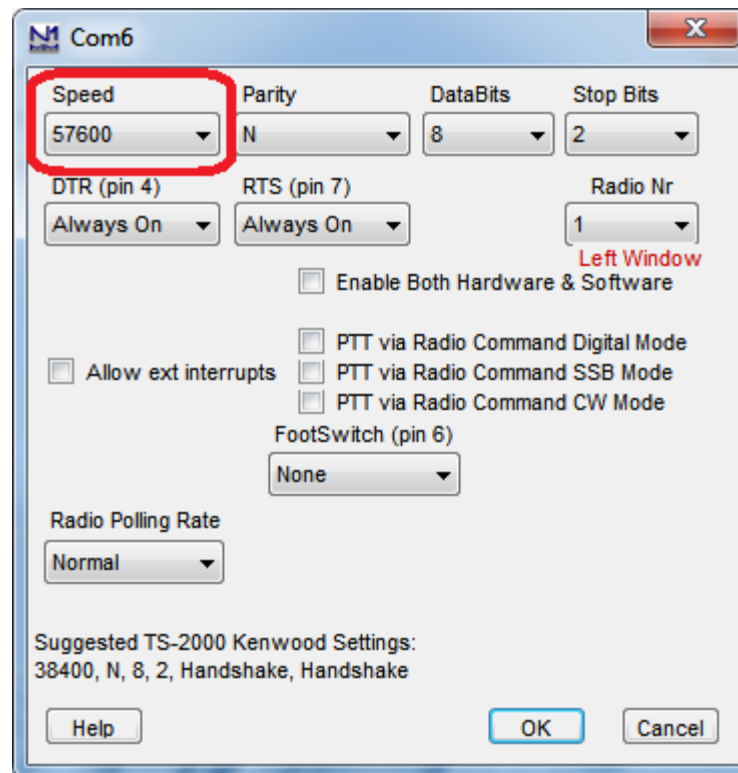
Details for CW/PTT Port

- Set DTR = CW
- Set RTS = PTT
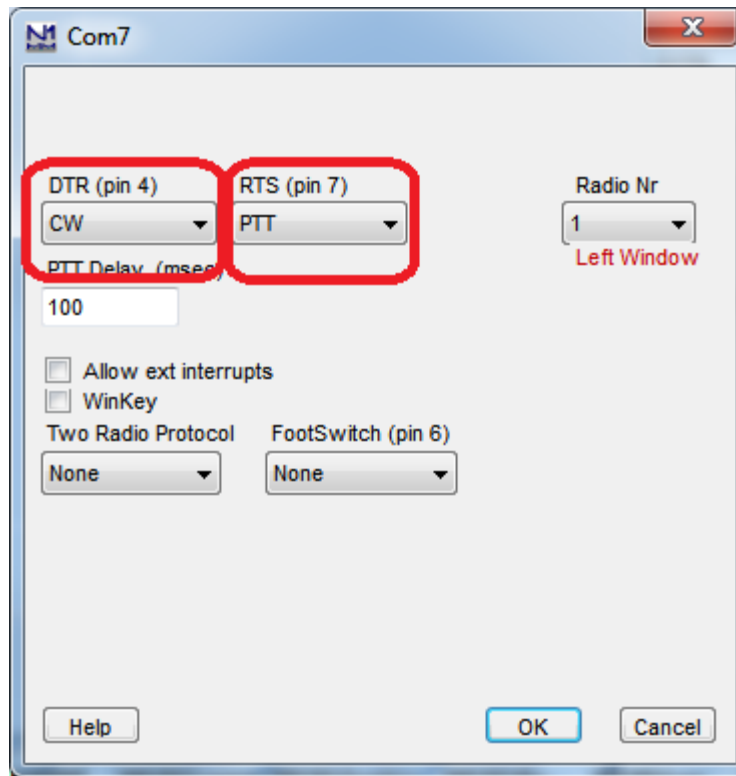
Activate N1MMplus Windows

- **All Stations Use**
  - Entry Window (Default Window, already set up)
  - Network Status – to enable networking and know what other stations are doing
  - Log Window – to see what has been logged
- **Optional Windows**
  - Info – shows QSO rate
  - Score Summary – shows score by band and mode
  - Check – determine if there might be callsign typos
- **CW Stations Use CW Key for ad-lib transmissions (CTRL+K)**
- **Digital Stations Use Digital Interface**
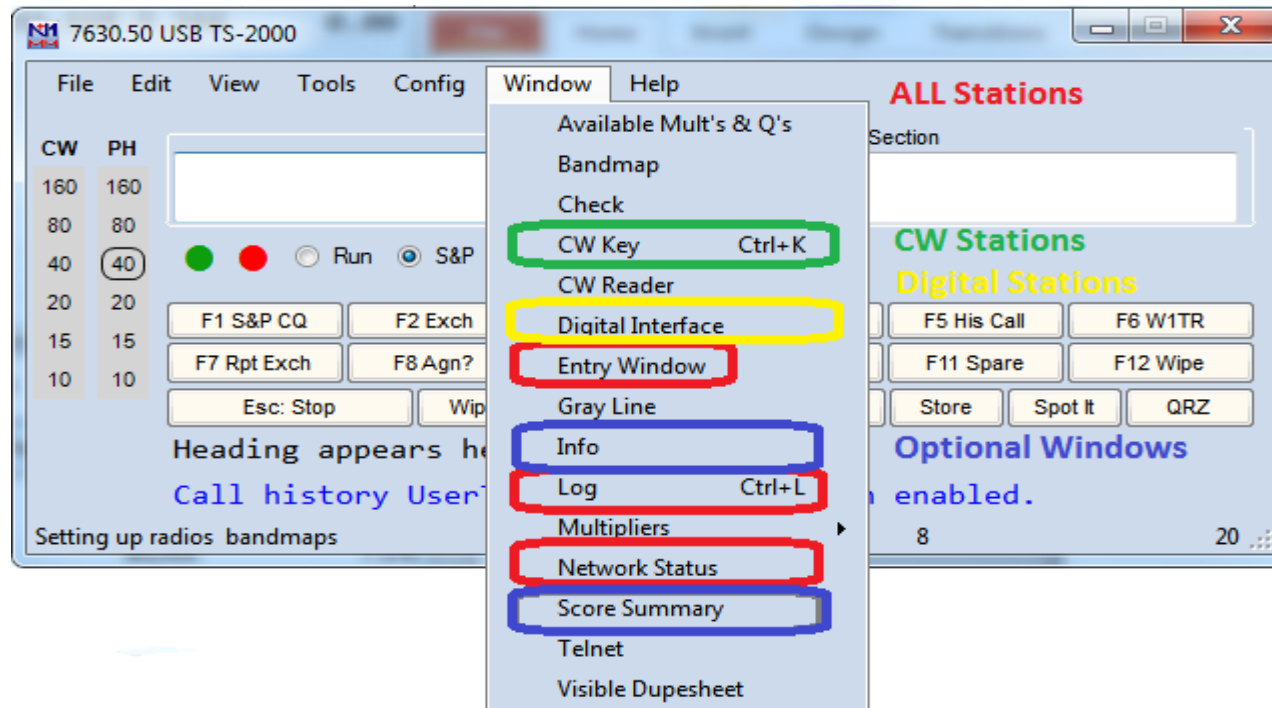
Entry Window

This window shows current QSO information

Callsign, Class, Section (these vary with contest type)

Title Bar at Top of Window shows Frequency and Radio Type.

Indicator for current band and mode

Indicator for Run / S&P

Function Keys for use with Mouse, legend key for using F-Keys on Keyboard

Call History when Available

Azimuth Heading when Available
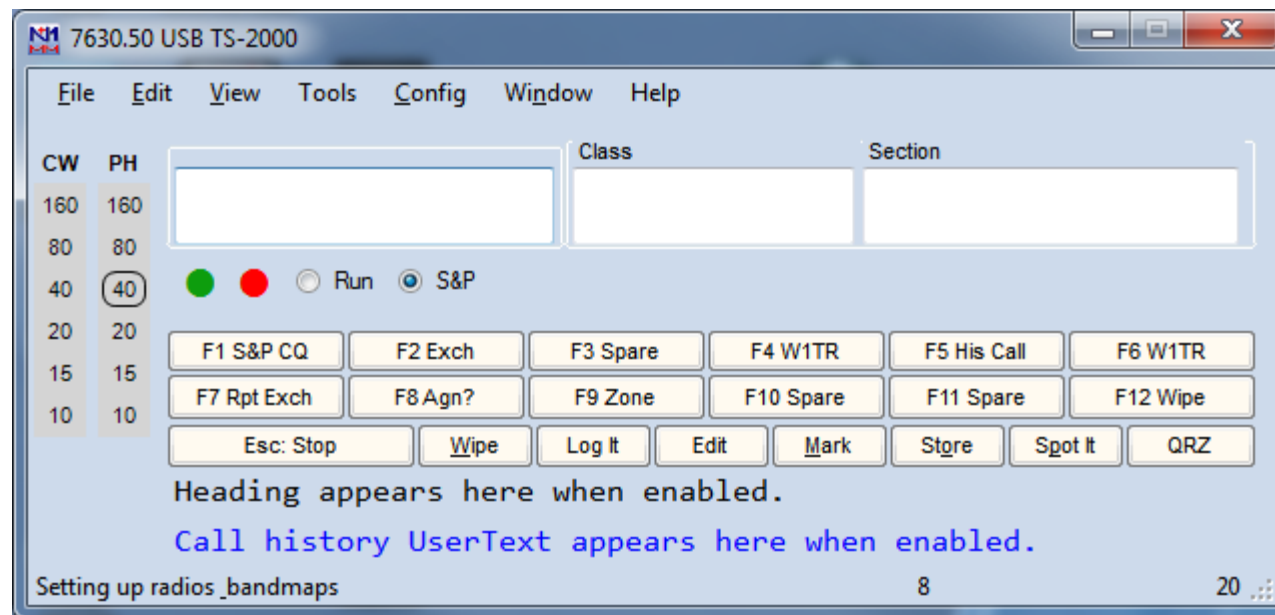
Network Status Window (1)

This window shows computers currently on the network

Computer Name, IP, Pass Freq, Run/S&P, QSO Stats, Freq, Op, Msg, Send, Recv, Master

If the Network Status Window Looks Like This,
Click on the Orange Button to Start Networking.
Do NOT check MASTER, your station is a SLAVE!

Network Status W1TR 192.168.9.244 (((*)))

| Stations | Resynchronize | Rescore | Options | Actions | Messages |

Computer	IP Address	Pass	Run	10	100	Freq	Op	Msg	Send	Receive	Master

Networked Computer Mode is off
Click here to turn on

Network Status Window (2)

This window shows computers currently on the network
Computer Name, IP, Pass Freq, Run/S&P, QSO Stats, Freq, Op, Msg, Send, Recv, Master

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Network Status W1TR 192.168.9.244 - 1 Stations in network

| Stations | Resynchronize | Rescore | Options | Actions | Messages |

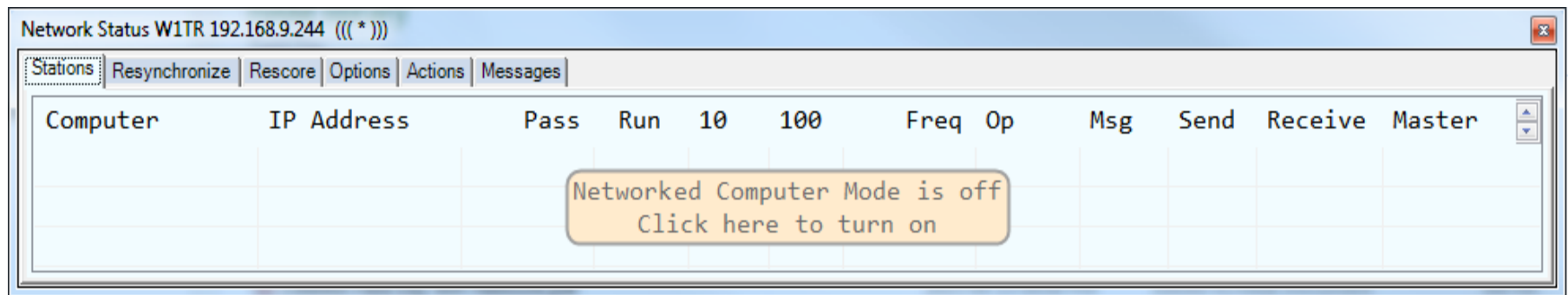| Computer	IP Address	Pass	Run	10	100	Freq	Op	Msg	Send	Receive	Master
W1TR	192.168.9.244	0.00	S&P	60	60	7630.50	W1TR		Ok	Ok	☑

Normally there would be other computers listed when network is fully populated

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Network Status W1TR 192.168.9.244 - 1 Stations in network   **Options Should Be Set as Shown**

| Stations | Resynchronize | Rescore | Options | Actions | Messages |

- ◉ Run1   ○ Run2/Mult
- ☑ Log QSOs at all Stations
- ☐ Don't work non-mults
- ☐ Don't automatically change to S&P mode
- ☐ Wipe callsign when logged by stack target
- ☐ Trace Networked Computer Messages
- ☐ Force ALL other stations to stop transmitting when I transmit
- ☐ Block my Tx only if other station transmitting on same band and mode (multi-one)

Network Status W1TR 192.168.9.244 - 1 Stations in network   **Use This to Send Text Messages to Other Computers**

| Stations | Resynchronize | Rescore | Options | Actions | Messages |

- Talk (Ctl-E)   Stop Networking   Force Time Sync   Reset Serial Numbers at all Stations
- Set Your Pass Frequency   Edit Computer Addresses

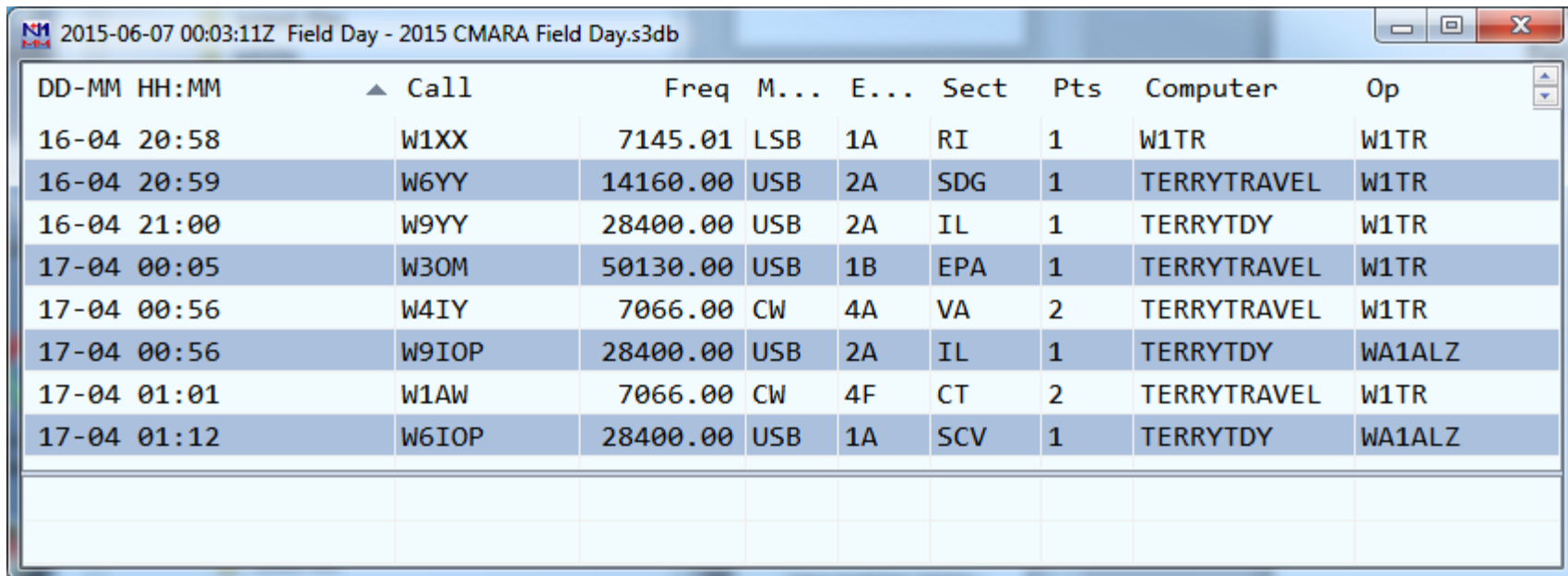**Network Status W1TR 192.168.9.244 - 1 Stations in network**   **Use This to View Messages**

| Stations | Resynchronize | Rescore | Options | Actions | Messages |

Log Window

This window shows stations CMARA has worked

Date, Time, Call, Frequency, Mode, Section, Points, Computer, Operator.
Title Bar at Top of Window shows Date/Time, Contest Name, Database Name.

DD-MM HH:MM	▲ Call	Freq	M...	E...	Sect	Pts	Computer	Op
16-04 20:58	W1XX	7145.01	LSB	1A	RI	1	W1TR	W1TR
16-04 20:59	W6YY	14160.00	USB	2A	SDG	1	TERRYTRAVEL	W1TR
16-04 21:00	W9YY	28400.00	USB	2A	IL	1	TERRYTDY	W1TR
17-04 00:05	W3OM	50130.00	USB	1B	EPA	1	TERRYTRAVEL	W1TR
17-04 00:56	W4IY	7066.00	CW	4A	VA	2	TERRYTRAVEL	W1TR
17-04 00:56	W9IOP	28400.00	USB	2A	IL	1	TERRYTDY	WA1ALZ
17-04 01:01	W1AW	7066.00	CW	4F	CT	2	TERRYTRAVEL	W1TR
17-04 01:12	W6IOP	28400.00	USB	1A	SCV	1	TERRYTDY	WA1ALZ

Title bar: 2015-06-07 00:03:11Z Field Day - 2015 CMARA Field Day.s3db
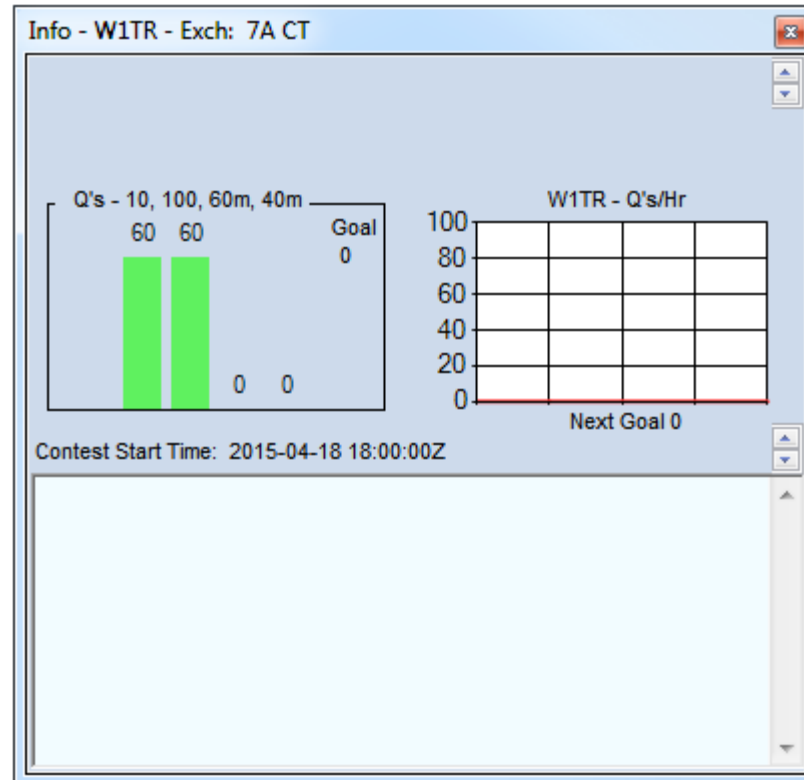
Info Window

This window shows QSO rate statistics versus goals.

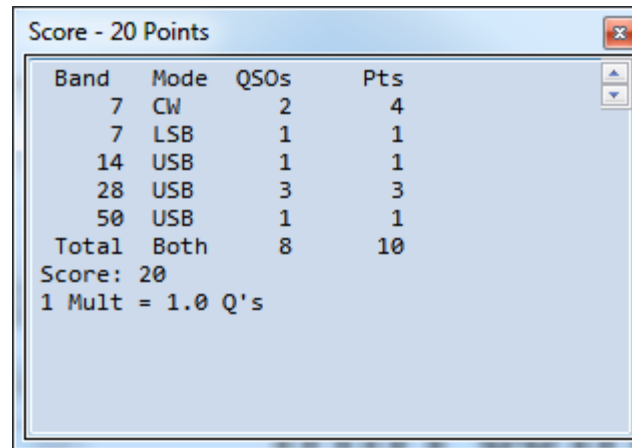10 – rate for last 10 QSOs

100 – rate for last 100 QSOs

60m – rate for last 60 minutes

40m – rate for last 40 minutes

Score Summary Window

This Window Shows Current Score by Band and Mode, and Total

Score - 20 Points

| Band	Mode	QSOs	Pts
7	CW	2	4
7	LSB	1	1
14	USB	1	1
28	USB	3	3
50	USB	1	1
Total	Both	8	10

Score: 20
1 Mult = 1.0 Q's

Check Window

This Window Shows Partial Matches of Callsign in QSO Entry Window with Log, Master Callsign Database, Telnet Window, Call History File. Use to check for TYPOs or mis-copied callsigns.

Log   Callsign Master Database   Telnet   Callsign History

Check Log/Master/Telnet/Call history/Reverse lookup

W2TR	K2TR		W2GR
	W1TR		W2TN
	W7TR		
	W2CR		
	W2GR		
	W2OR		
	W2RR		
	W2SR		
	W2YR		
	W2TA		
	W2TB		
	W2TD		
	W2TF		
	W2TT		

CW Transmit Window

Use this Window to send CW Messages not Preset in Macros.
Particularly Useful if NO Paddle or Key is Connected to Radio.
ENTER Key Ends Transmission and Closes Window.
Window must be closed before other actions can be taken.
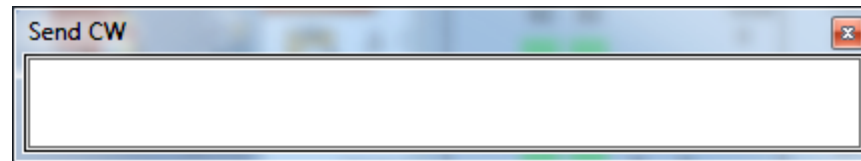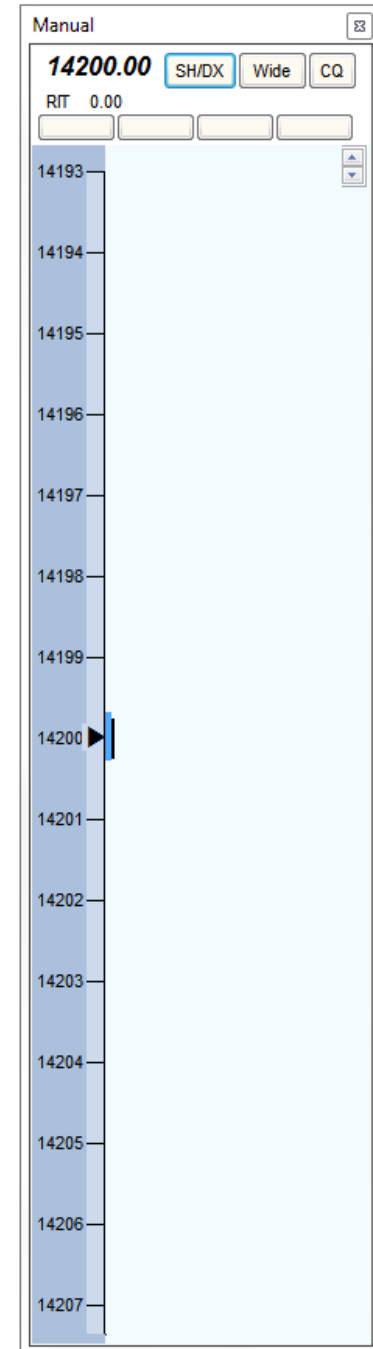
Band Map Window

This Window Shows Spots from
1. Self
2. Others
3. Packet Cluster

Station Callsigns will be Shown Next to Frequency.
Click on Callsign to Move VFO to Frequency
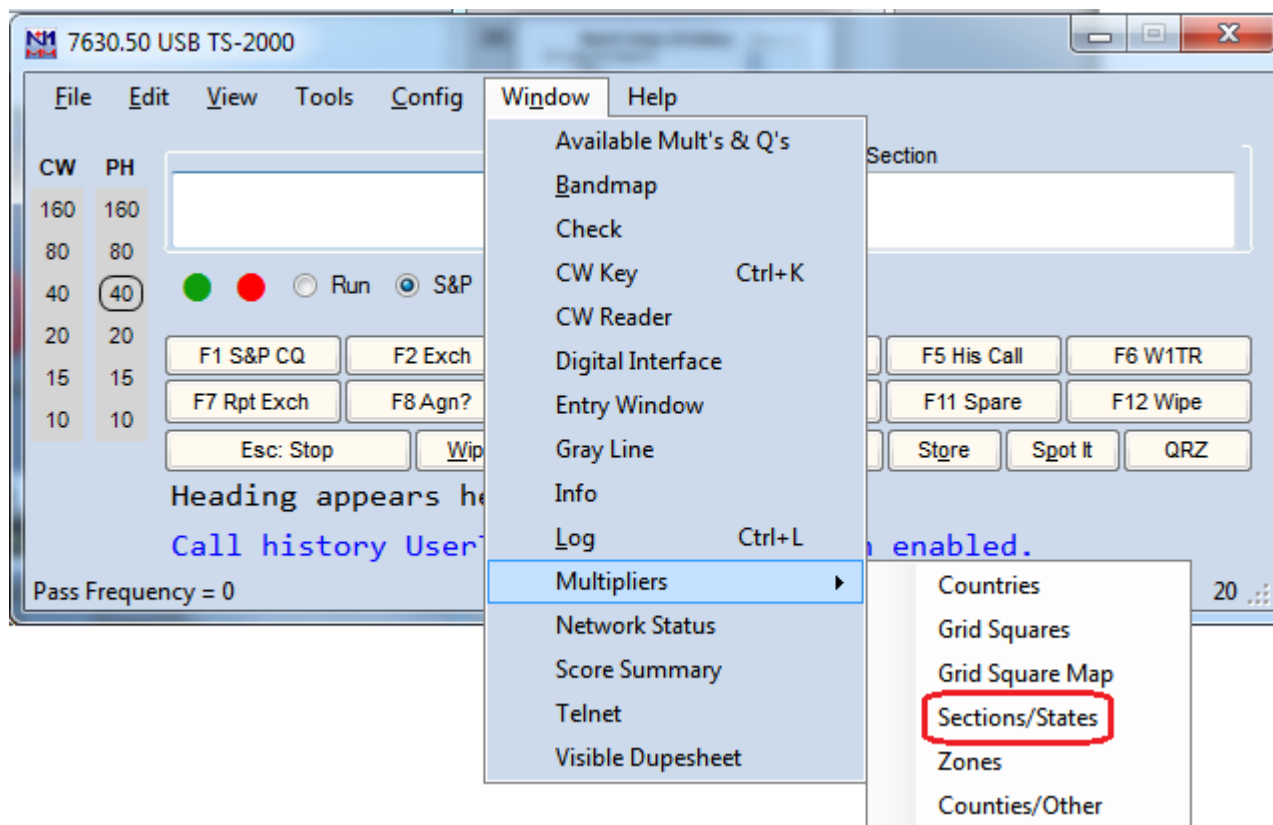Note: we are NOT using Packet Cluster!

Multiplier Window Selection

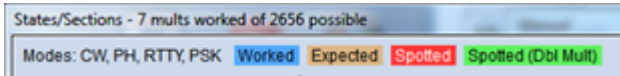Select an Appropriate Multiplier Window.
Field Day uses Sections.
However, Sections are NOT a Field Day Contest Score Multiplier.
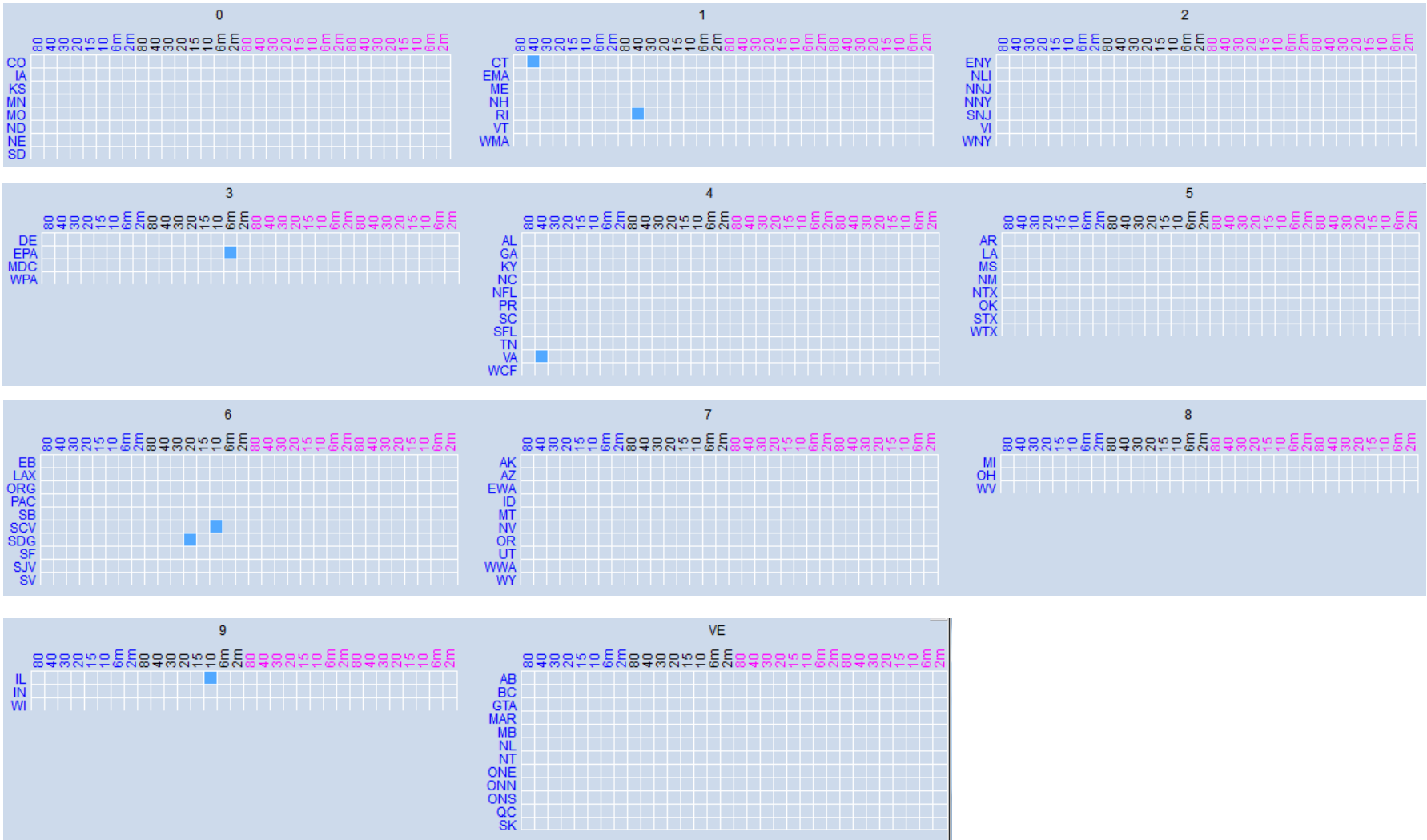Use for Information ONLY.

Multiplier Window

This Window Shows Sections Worked versus Band and Mode

States/Sections - 7 mults worked of 2656 possible

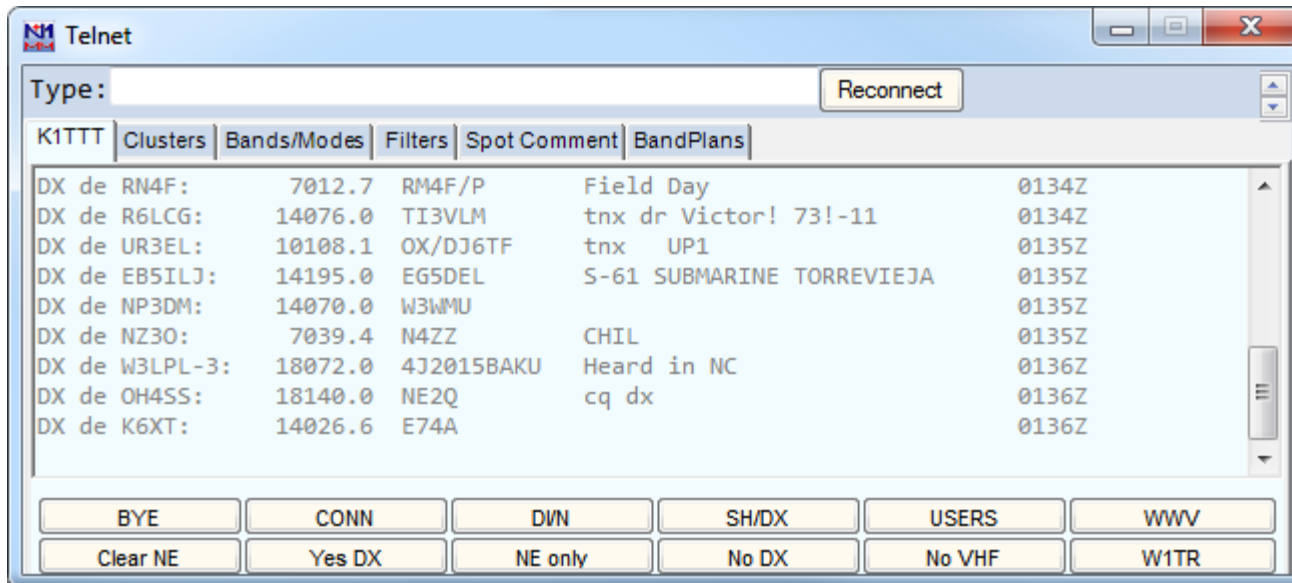Modes: CW, PH, RTTY, PSK | Worked | Expected | Spotted | Spotted (Dbl Mult) |

Note: Window is Very Wide, Window Segments are shown!

Telnet Window

This Window Shows Spots from Internet DX Clusters
We do NOT Plan to Use DX Clusters for Spotting / Assisted Mode
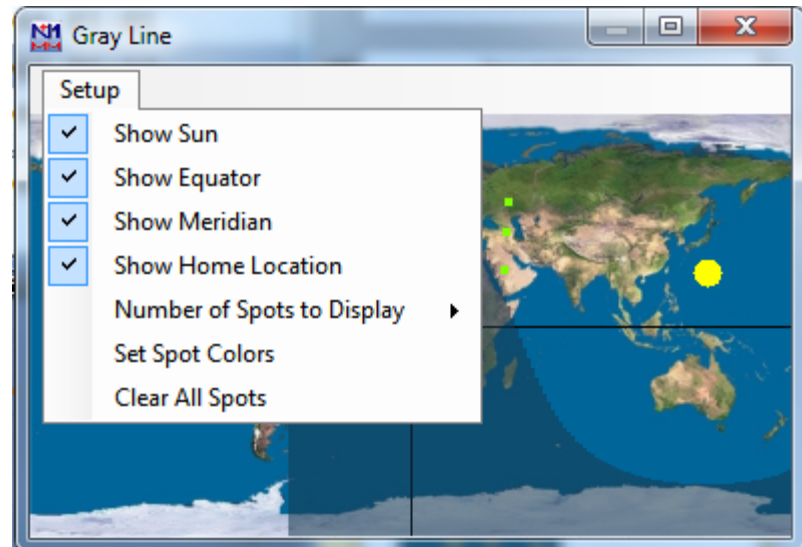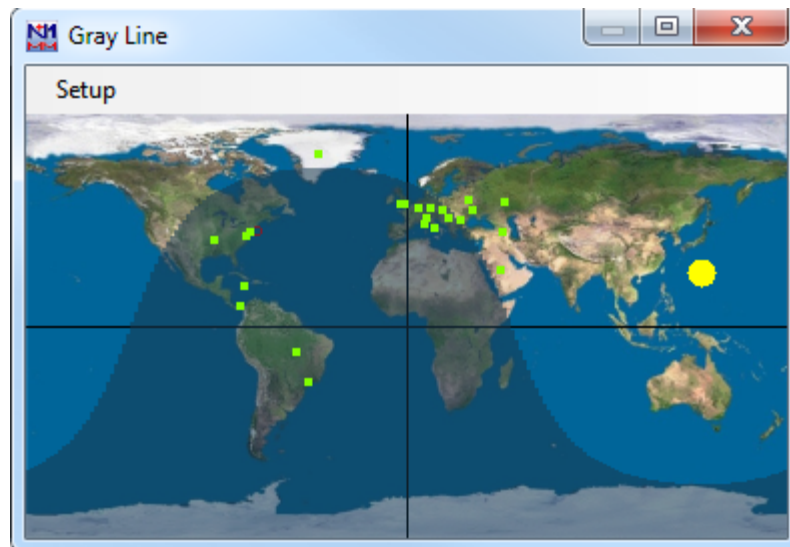
Grey Line Window

This Window Shows

1. The Grey Line between Day Time and Night Time
2. Spots from Internet DX Clusters by Location

We do NOT Plan to Use DX Clusters for Spotting / Assisted Mode

A Setup Menu Provides a Choice of What to Display

Band Setup

This Year, CMARA is using CAT Control ☺
So THIS should NOT Be Necessary, But Just In Case! ☹
Use the N1MMplus QSO Entry Form to set Frequency and Mode

- ## Set Frequency
  Type Frequency in <u>KHz</u> (e.g. 3550 or 21350) into callsign field
  Extremely Important to DO !!!, Otherwise Log Data Will Be Garbage.
  With CAT control, simply use your bandswitch and VFO.

- ## Set Mode
  Type Mode (e.g. CW, USB, LSB, AM, FM, RTTY, PSK31) into callsign field
  Extremely Important to DO !!!, Otherwise Log Data Will Be Garbage.
  With CAT control, simply use your mode switch.

- ## Very Important to Set These Items
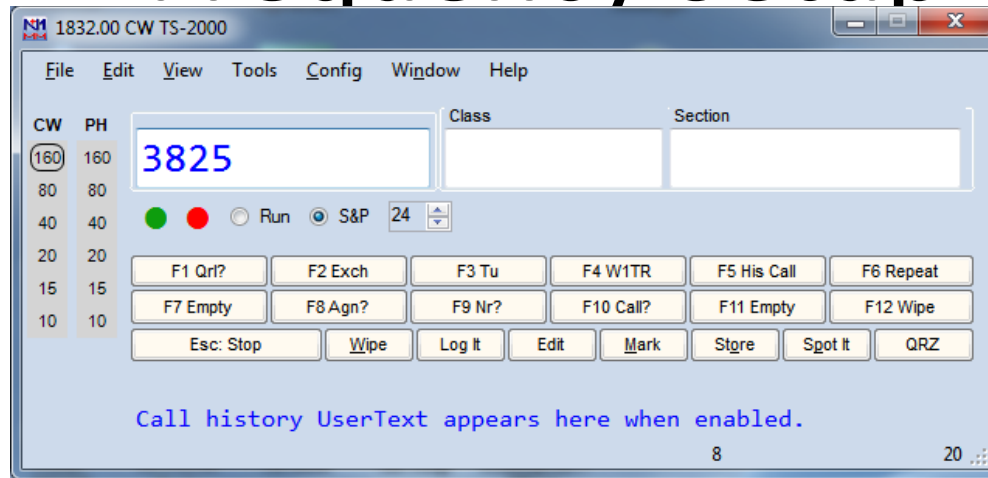 It is possible to correct all other items later *except*:
  Date/Time (computer clock) – Computer Should Synchronize with Master
 Frequency – Should Be Using CAT Control
  Mode – Should Be Using CAT Control
 <u>Operator – Whenever Change of Operator Occurs (CTRL-O)</u>

Frequency Setup

To Set or Change Frequency:
type the Frequency in KHz in the Callsign Field (left).
Use a typical Phone or CW Frequency if NOT CAT Controlled,
but N1MMplus only needs to know the Band.
NO NEED to CHANGE it as you tune up and down the band.
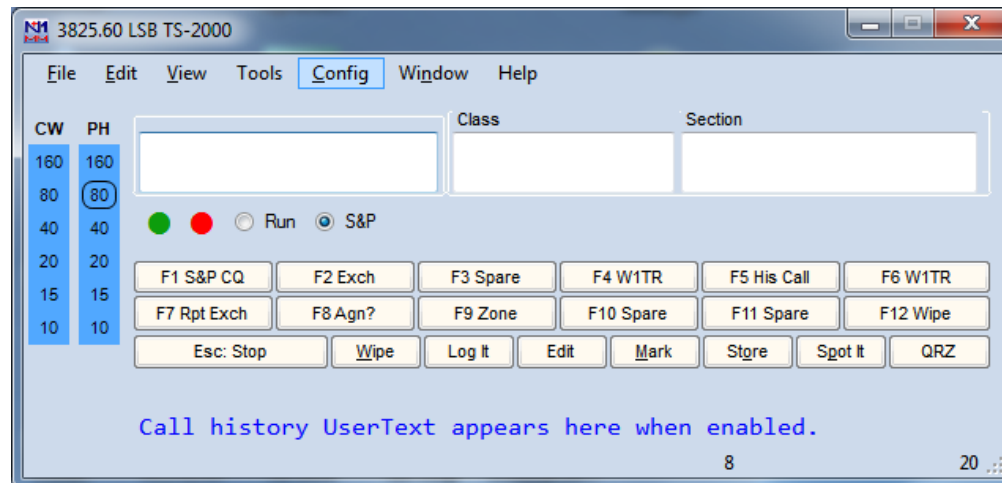Note: the Title Bar of the Main Window will reflect the change
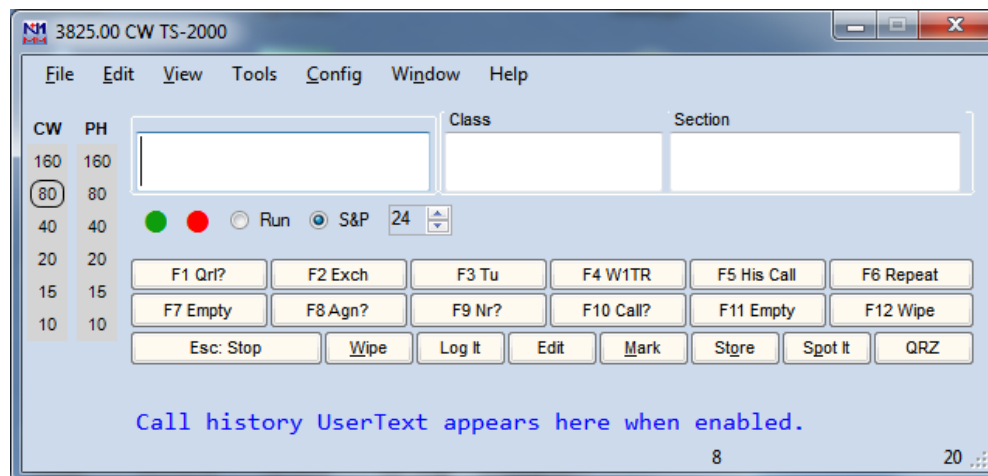
Mode Setup
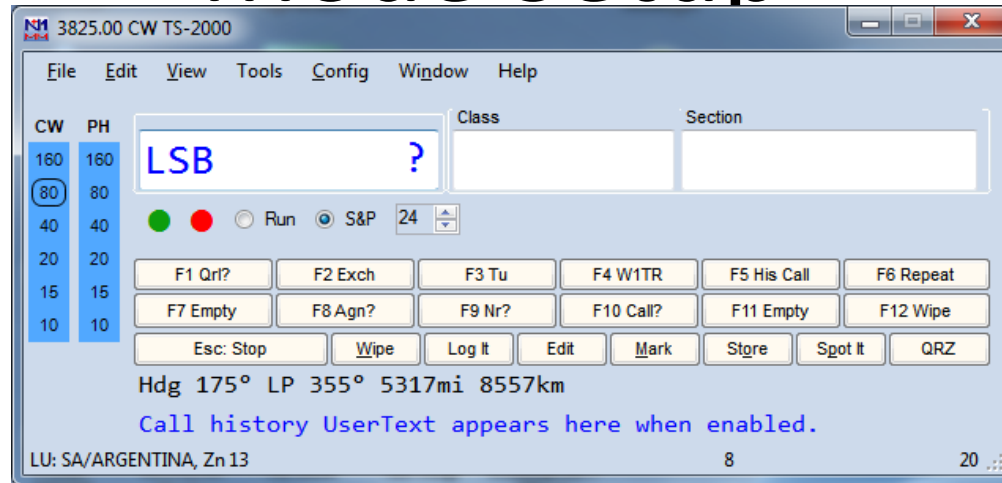
To Set or Change Mode:
Type the Mode (CW, USB, LSB, AM, FM, RTTY, PSK31)
into the Callsign Field (left).
Note: the Title Bar of the Main Window will reflect the change

Operator Setup
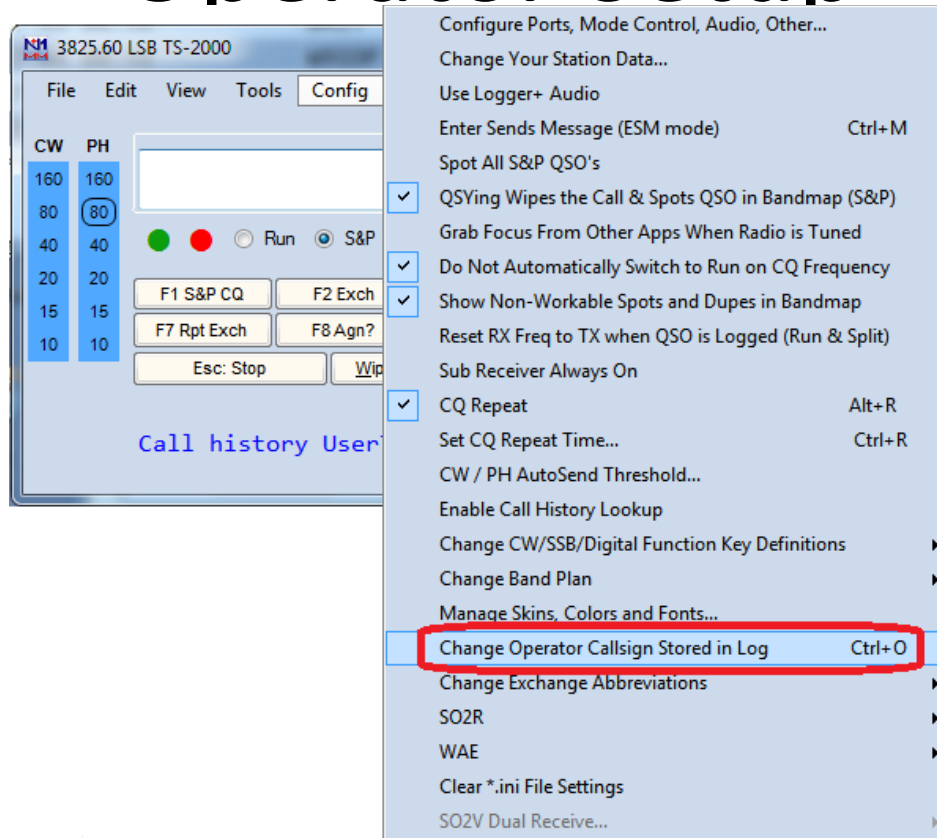
Use your own PERSONAL CALLSIGN here
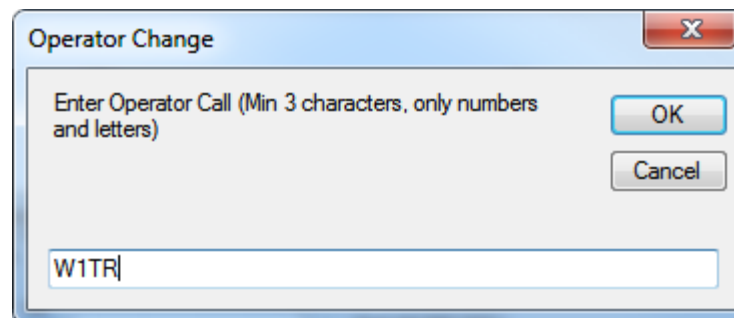
QSO Logging (1)

- Enter
  - Callsign
  - Class
  - Section
  - New in 2012 – Ontario is no longer ON
    ARRL made 4 sections out of Ontario (ON):
    ONE – Ontario East
    ONN – Ontario North
    ONS – Ontario South
    GTA - Greater Toronto Area (West)

- Dupes will be Indicated

QSO Logging (2)

Note: the LOG Contains Some Contacts, but NOT W2TR
To log W2TR 1B NNJ, type the information as follows:
Note: the ? Indicates Callsign is NOT in
Log, Master Database, Telnet, or Call History File

QSO Logging (3)

the LOG NOW Contains W2TR 1B NNJ
Note:
      The Orange Color Indicates W2TR is NOT in
      Master Database, Callsign History File
Dates / Times are Fictitious here, It's a Demo!
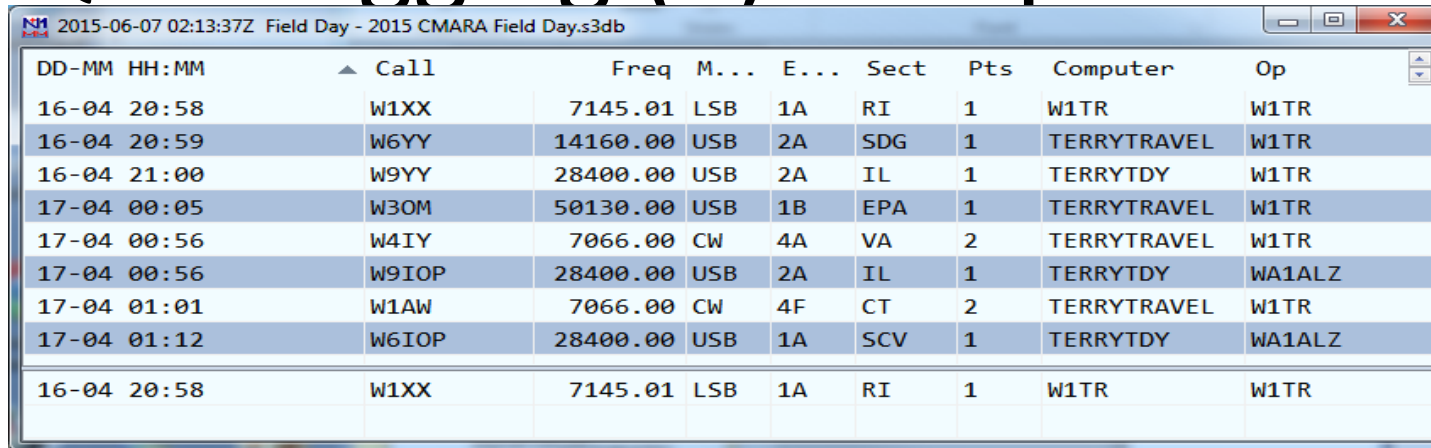
QSO Logging (4) – Dupe Check

DD-MM HH:MM		▲ Call	Freq	M...	E...	Sect	Pts	Computer	Op
16-04 20:58		W1XX	7145.01	LSB	1A	RI	1	W1TR	W1TR
16-04 20:59		W6YY	14160.00	USB	2A	SDG	1	TERRYTRAVEL	W1TR
16-04 21:00		W9YY	28400.00	USB	2A	IL	1	TERRYTDY	W1TR
17-04 00:05		W3OM	50130.00	USB	1B	EPA	1	TERRYTRAVEL	W1TR
17-04 00:56		W4IY	7066.00	CW	4A	VA	2	TERRYTRAVEL	W1TR
17-04 00:56		W9IOP	28400.00	USB	2A	IL	1	TERRYTDY	WA1ALZ
17-04 01:01		W1AW	7066.00	CW	4F	CT	2	TERRYTRAVEL	W1TR
17-04 01:12		W6IOP	28400.00	USB	1A	SCV	1	TERRYTDY	WA1ALZ
16-04 20:58		W1XX	7145.01	LSB	1A	RI	1	W1TR	W1TR

2015-06-07 02:13:37Z Field Day - 2015 CMARA Field Day.s3db

Note: We already worked W1XX on 40 LSB, that station is IN THE LOG.
If we try to LOG him again, same band, same mode,
the DUPE! message will show.
N1MM handles dupes OK by not scoring them.
If the other station insists, work him anyway, don't waste time arguing!
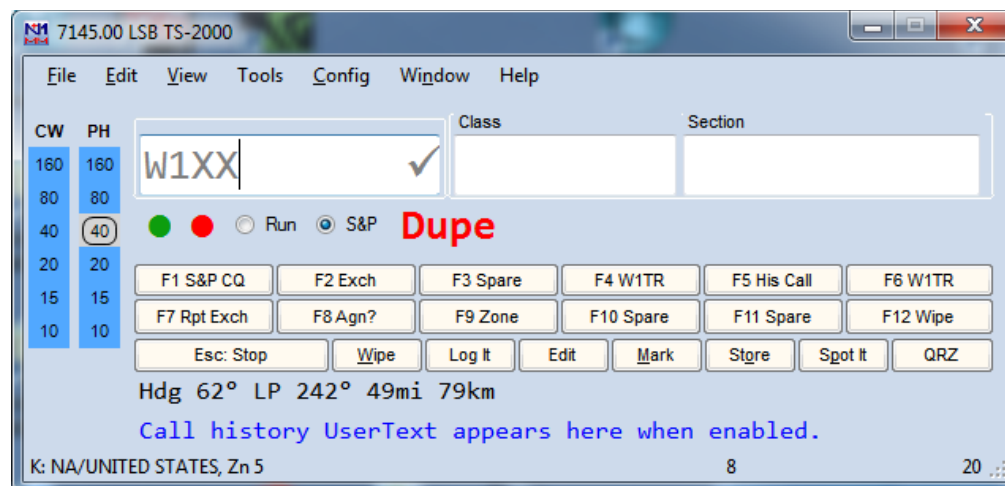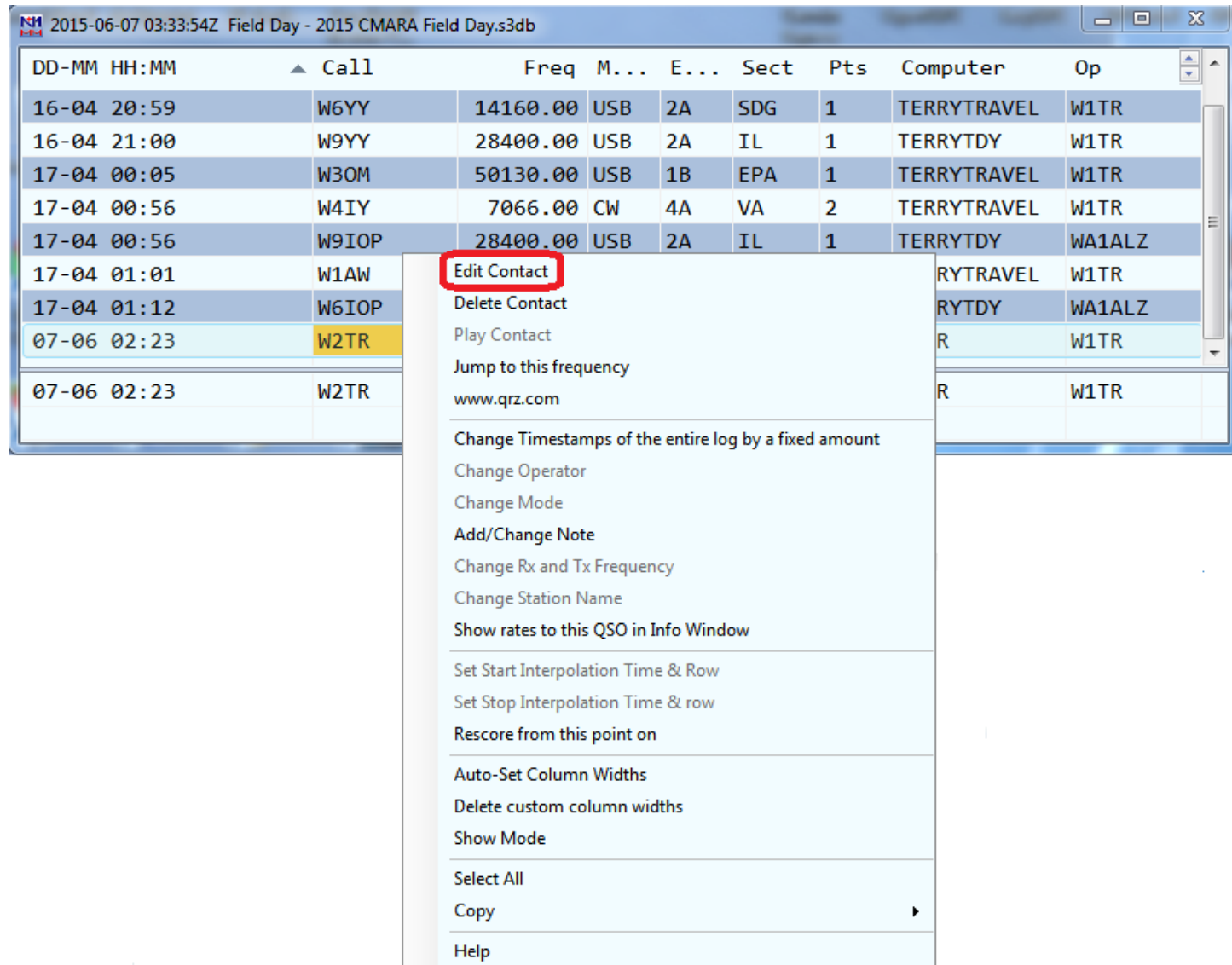
Edit Log – Make Corrections (1)
Right Click on Log Entry to be Edited

Edit Log – Make Corrections (2)
Make Changes in Edit Contact Form

Restarting N1MM Mid Contest

- If a Computer Fails, Substitute a NEW computer.
  Do NOT Name the NEW Computer Same as the OLD.
  Use a DIFFERENT Name.

- If the Generator Goes Out,
  or Station (Computer) is Shut Down Normally…
  - N1MMplus should REMEMBER
    what Database and Log it is using and restart OK.
  - After Restart, or Changing Operators
    Check the Network Status Window to see
    Who is on What Bands and Modes Before Operating
  - The Database and Log Name Appear at the
    Title Bar at the TOP of the Log Window
  - IF NOT Correct:
    - File / Open Database instead of New Database
    - File / Open Log in Database instead of New Log In Database

At End of Field Day ...

- Close N1MMplus Logger
- Wait for the Field Day Chairman (W1TR)
  to check that the FD Log seems OK on Master
  ALL QSOs should be in the log on everyone's
  computer, including the MASTER.
- Any Questions, Ask the Field Day Chairman
  (W1TR)

Log Consolidation and Submittal

This is what the Field Day Chairman will do to submit FD Logs to ARRL:

1) Check that Log is OK on Master Computer
2) Give OK to Shut Down Computers, Stations
3) If NOT OK, Problem Resolution will Begin
   Computers stay ON
   Stations can Begin Tear Down
4) The Field Day Log, *.s3db, will be Loaded into N1MMplus
5) The Log will be Exported to Cabrillo Format for ARRL Submission
6) The Cabrillo File will be sent to ARRL via EMAIL
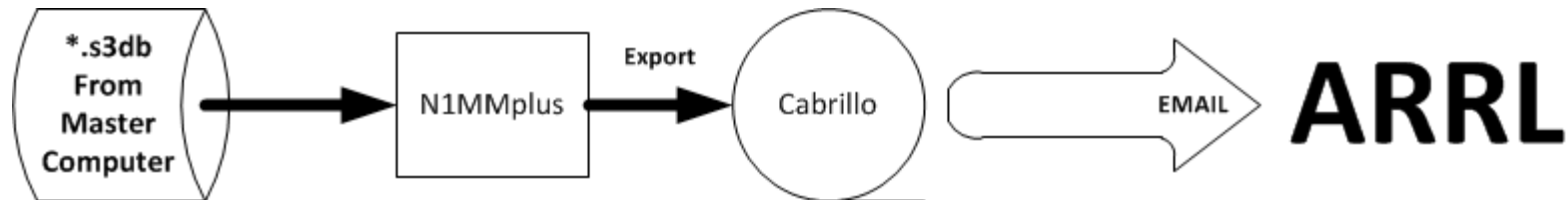
User Support

- ## N1MMplus Web

  http://n1mm.hamdocs.com/tiki-index.php

  Home source of information about N1MM, downloads, documentation, etc.

- ## N1MMplus Email User Groups

  http://n1mm.hamdocs.com/tiki-index.php?page=Overview#N1MM_Logger_Discussion_Groups

  Get notification of bugs and hints & kinks on how to use N1MM

  Post questions, comments, and report BUGS to the developers

Summary

- Free !! ☺ ☺
- Widely Used and Supported ☺
- Works on Microsoft Windows (only), XP thru Win 8 ☹
- Supports nearly EVERY contest ☺
- Works with most radios, coupled, or stand alone ☺
- CW automatic keying
- Digital Voice Keying (uses computer sound card)
- Digital sound card modes: MMTTY, MMVARI, FLDIGI
- Easy to setup
- Easy to use
- Remember to Setup:
  Operator – CTRL+O
  Frequency and Mode are Automatic – CAT Control
  Date / Time are Automatic – N1MMplus Networking

Extra Topics

- W1TR Go-Kit Diagram
- CAT Control
- CW Keying
- Digital Voice Keying (DVK)
- Audio Files
- Audacity Audio Editor
- Digital Modes (RTTY, PSK, Etc.)

W1TR Go-Kit Diagram

Keyer Paddle

Headset with Boom Microphone

110 vac Power Strip

12 vdc Power Supply

Portable XCVR
(IC-7000)

RigBlaster USB

RJ-45 to
mini-phono

NetBook or LapTop
Computer

Automatic Antenne Tuner
Unit (ATU)
AT-7000 / IT-100

Antenna System

Carrying Case
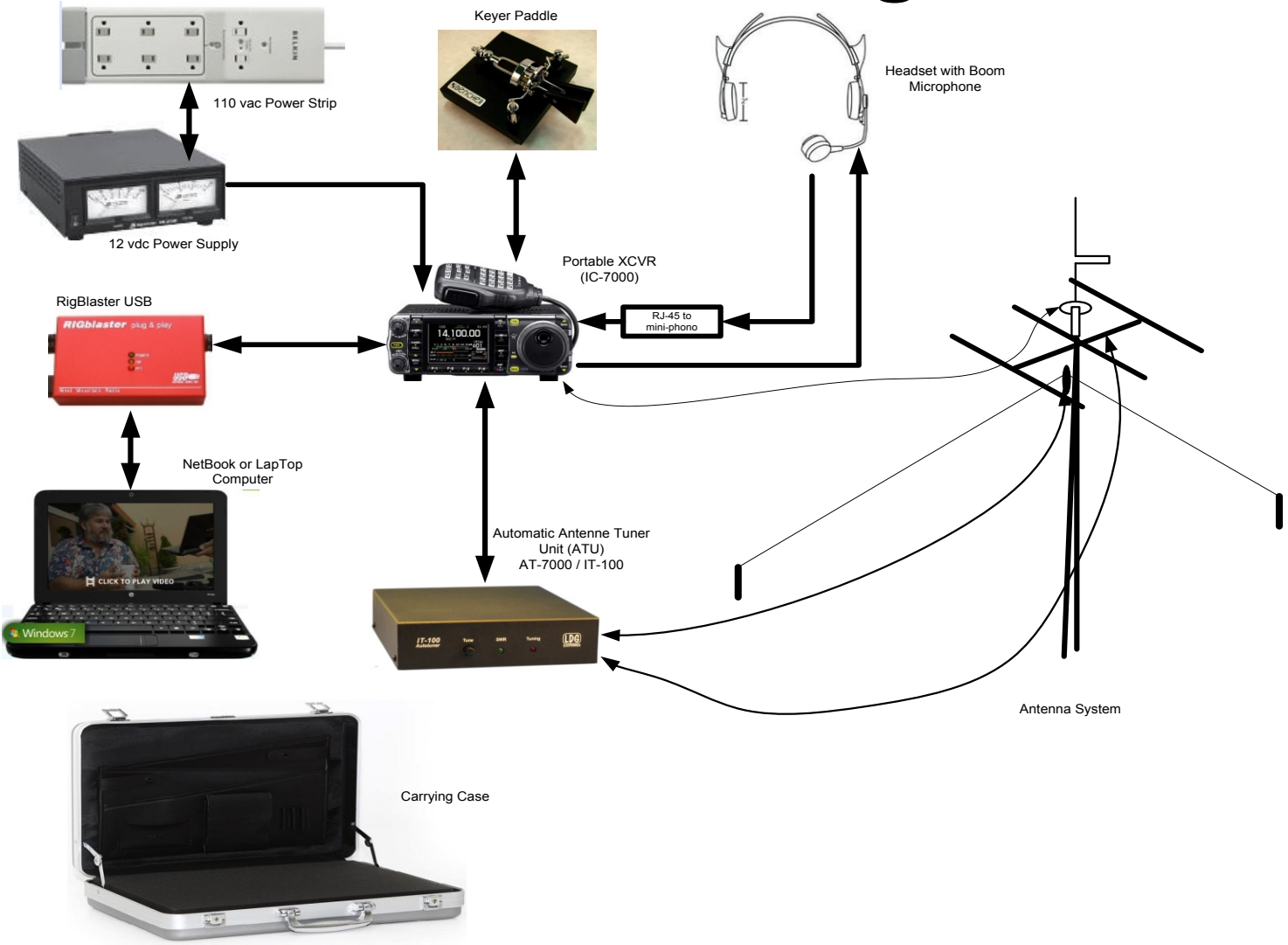
CAT Control

- USB or RS-232 to CI-V translator to Rig (ICOM)

- RS-232 directly to Rig (Kenwood)

- RS-232 to TTL converter to Rig (Yaesu)

- USB to RS-232 converter may be needed
Most USB to RS-232 converters work OK for CAT control
and for PTT, CW, FSK RTTY using EXTFSK

- CAT Control Monitors Rig Data (frequency, mode)

- CAT Control Can Control Rig Data (frequency, mode)

- Other items can be Monitored / Controlled
Mic Gain, CW Speed, RF Gain (depends on RIG)

CW Keying

- RS-232 or LPT used

- USB to RS-232 may be needed

- RS-232 DTR for CW Keying

- RS-232 RTS for PTT

- RS-232 TXD for RTTY FSK

- Need RS-232 (± 12 VDC) to TTL (0/+5 vdc)
  Level Converter (RigBlaster Provides This)

- Function Key Macros Automatically Send CW

- Ctrl-K Keyboard Window
  Eliminates Need for Keyer Paddle
  Most Operators Keep the Keyer Paddle Anyway, Just In Case !!

Digital Voice Keying

- Use Computer Sound Card

- Computer Microphone to Rig Speaker Output

- Computer Speaker Out to Rig Microphone Input

- Isolation Transformer for Both
  (RigBlaster Provides This)

- All Modulation and Demodulation in Software
  (Digital Modes)

Digital Modes Equipment Interconnect

IC-7000 RigBlasterPnP CAT Diagram

IC-7000 RigBlasterPnP CAT Diagram.vsd Revised 6/22/2010 12:07 AM

spkr

Data Jack

Audio Out →

Audio In ←

PTT (RTS) ←

CW (DTR) ←

CAT — C-IV →

FSK PTT

RS-232 to TTL

← FSK (TXD)

← PTT (RTS)

USB to RS-232

KEY ← KEY (DTR)

CAT ADDR 70h 19200 baud

IC-7000

Mic / PTT

RigBlaster PnP

Line In →

Audio Out ←

USB COM5 ←

USB HUB

USB COM6 ←

Sound Card

USB

NetBook Computer

Software:
WinXP
N1MM Logger
MMTTY
MMVARI
EXTFSK
HRD
Audacity

RS-232 to TTL Signal Level Converter Circuit

RS-232

2.2K ohm

2n3906

TTL

Audio Files

- Pre-Recorded Messages (CQ, This Is…, etc)
- Letters (Phonetics) and Numbers, Pieced Together
- N1MMplus can play back messages
  as defined in macro files associated with program function keys (Function Keys)
- N1MMplus can play back internal data items
  Callsign of other station
  Your callsign
  Signal report
  Contest exchange
  using letter phonetics and numbers pieced together
- It is possible to work a phone contest
  without ever saying a single word
  into the microphone

Audacity Audio Editor

- Use Audacity to Edit Audio Phrases
- Audacity Web Site
  http://audacity.sourceforge.net/download/

Digital Modes (RTTY, PSK, Etc.)

- N1MMplus does NOT do Digital Modes by Itself

- N1MMplus works with MMTTY for RTTY (FSK)
  Use of USB to Serial Device for FSK MAY need EXTFSK driver (software)
  http://mmhamsoft.amateur-radio.ca/

- N1MMplus works with MMVARI for Digital Modes
  http://mmhamsoft.amateur-radio.ca/

- N1MMplus works with FLDIGI for Digital Modes
  http://www.w1hkj.com/Fldigi.html

N1MMplus Quick Sheet

- Set Date/Time on Computer to WWV (2.5,5,10,15,20 MHz)
  CHU on 3.330, 7.850, 14.670 MHz
  N1MM Networking should take care of this.

- Install N1MMplus Software (Full Install then a Recent Update)

- Recent Update will be provided by the Field Day Chairman (W1TR)

- Open Existing Database …\2015 CMARA Field Day.s3db

- Open Log In Database - FD

- All Station and Contest Parameters are Already Setup

- Set Operator Callsign (KB1VUA, etc) not to be confused with Station Callsign – CTRL-O

- Set Frequency in KHz (e.g. 3550, 3850) use typical CW or SSB frequency accordingly

- Set Mode (USB, LSB, CW, AM, FM)

- With CAT Control, just dial up Frequency and Mode with Bandswitch, VFO, Mode Switch

- Enter QSO: Callsign, Class, Section while logging

- Remember ON (Ontario) is now ONN, ONE, ONS, GTA starting Fall 2012

- Edit or Quick Edit to fix Errors

- Delete to Remove bad QSOs