

Digital Communications 101 Preparation for Effective Use of FLDIGI for EMCOM use.

Presented by
Eldon Peterson
MSEE, W5UHQ
To Central Ohio Operators Klub Extra-Novice

Overview Part I - December

- Comparing Analog and Digital Data Communication Modes.
- We are covering the information transferred and not how various elements of a transmitting and receiving system are implemented.
- A Little History of Amateur Digital Modes
- Digital Terms Vocabulary
- Hardware Modems (TUs) vs Software based modulation and de-modulation of digital signals using a PC and soundcard.
- Just a little bit of information theory for foundation
- Recognizing the sounds and spectra of various digital modes.
- Comparison of various popular digital modes
 - Efficiency over various amateur channels.
 - Throughput
 - Error rate and Error Handling
 - Required Bandwidth and Why that is important
- Digital Mode Questions on General and Extra Exams will be referenced when appropriate.
- Questions and Review Part I
- Download a copy of FLDIGI and FLMSG prior to next meeting. Bring it with you on your laptop if possible for January and February Meetings.

Overview Part II - January

- What is FLDIGI Anyway?
- Loading the software - Target Operating Systems
- Hardware requirements and recommendations
- The PC / Radio Interface
- Cabling, signal levels, and ground loop elimination.
- Soundcard sharing nightmares and a good solution.
- RFI proofing your interfaces.
- Digital Modes Supported.
- Configuring FLDIGI for your setup.
- Practice (bring your own laptop – and input device)
- Download a copy of FLDIGI and FLMSG prior to meeting
- Questions and Review Part II

Overview Part III – February

- FLDIGI / NBEMS and EMCOM
- Ohio Digital Standards.
- Ohio HF Digital Net
- Licking County Digital EMCOM Net (WIP)
- Supporting software for NBEMS use.
- When to use what mode.
- Practice sending messages via keyboard, macros, and file attachments.
- Practice sending ICS-213 text messages, and spreadsheet data to and from other net members using FLMSG program.
- Practice sending and receiving (wrapped) picture files.
- Interfacing with wire line and cell interfaces still working.
- Interfacing digital media with our served agencies (CERT and ARES applications)
- Final Questions and Review
- Brainstorm an exercise to use new skills this spring.