

STANDARDS CHANGES CATALOG (SCC)

SCC NUMBER: SCC #127 ~~R3R4R5~~

CHANGE PROPOSAL TITLE: ~~Update Media Access Configuration (MAC) & Protocol Tables for HF Radios, Data Terminal Equipment turnaround time (DTETURN), definition of radios supported, replacement of Queue Target Seconds (QTS) with the more generic Queue Size in Octets (QSO) and FEC effects. Update and reformat the Media Access Configuration (MAC) and Protocol Tables to include the changes in units of measure described in SCC 145.~~

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AFFECTED DOCUMENTS: This change is for MIL-STD-188-220C.

PRECEDENCE: Routine

RECOMMENDATIONS: None

RECORD OF PROCESSING

<u>DATE:</u>	<u>ACTION:</u>
6 June 02	Proposal
25 Sep 02	Work Item
30 Sep 02	Draft, R1
26 Dec 02	R2
21 July 03	R3
17 Sep 03	R4
16 Oct 03	R5
<u>14 Nov 03</u>	<u>Approved for MIL-STD-188-220C via email.</u>

1. STATEMENT OF THE PROBLEM: The MAC and PROTOCOL tables are not up to date. They do not presently include High Frequency (HF) radios and are limited to only a few Single Channel Ground and Airborne Radio System (SINCGARS) radios. Additionally, the DTETURN variable needs to be added to MAC Table, the effects of FEC need to be shown ~~for in~~ the tables and the unique term Queue Target Seconds (QTS) needs to be replaced with the more generic Queue Size in Octets (QSO). ~~Finally, Also,~~ based upon the testing results with HF radio, it was determined that all of the values in the tables needed to be adjusted. Finally, after generation and review of the tables, it was determined that some indices needed to be corrected, the format was inappropriate and the units of measure were inconsistent and confusing.
2. PROBLEM ANALYSIS: The MAC and PROTOCOL tables need to be updated to include HF radios, packet mode, values for the variable DTETURN and a listing of the actual radios for which the MAC values apply. Not all radios have been evaluated and therefore the values do not apply to every radio in the field. In addition, since Golay FEC has an effect upon the actual Protocol Table values, separate tables need to be generated for FEC on and FEC off, ~~and~~ the unique term QTS needs to be replaced with the more generic term QSO ~~and.~~ ~~Further,~~ all previous values had to be reviewed and modified based upon the new findings discovered during HF testing. Further, during review/evaluation of the tables, errors were discovered in the MAC values and indices, the format was found to be printer dependent and the parameters and values were no longer consistent with the MAC and PROTOCOL terminology. The additional testing performed demonstrated that MAC and PROTOCOL were not independent.
3. PROPOSED SOLUTION: Make the following changes. Refer to the updated tables to see actual changes proposed. Other changes to basic document and appendices are shown in enclosures 2, 3, 4 and 5.
 - ~~a.~~ Change the format to create a single table with multiple sheets. Eliminate the distinction of MAC and PROTOCOL and just refer to the values as the ~~protocol~~ parameter values. MIL-STD-188-220 Parameter Table.
 - a.b. Add a listing of all the radios evaluated for which the parameter values apply. Add note 1 that specifies that the SINCGARS values are only applicable to the RT-1439 (non ICOM), RT-1523 (ICOM), RT-1523C (SIP) and RT-1523E (ASIP).
 - b.c. Add the new HF values.
 - d. Create separate ~~PROTOCOL tables~~ sheets for FEC on and FEC off.
 - ~~d.e.~~ Add note to all tables that the parameter values were derived and have not yet been tested and may change in near future. In Addition, add Add note that tables support wireline, SINCGARS VHF FM and HF.
 - e.f. Add a new column called DTETURN to the ~~MAC~~ table and add the values for this new term.

~~f.g. Add a new section sheets to the PROTOCOL tables~~ to include HF. A separate section is required because the large delays associated with HF make the Maximum Transmit ~~Time Tenths~~ (MTT) values used for SINCGARS inappropriate.

~~g. Modify the cover pages of the PROTOCOL table to note the separate section for HF.~~

h. Correct values for Data Terminal Equipment acknowledgement preparation time (DTEACK) and for Data Terminal Equipment processing time (DTEPROC). The present values do not include Push to talk relay activation time (PTT) or transfer delays.

i. Delete column for Queue Target Seconds (QTS) in PROTOCOL table and ~~add a~~ replace with a new term called Queue Size in Octets (QSO) ~~to~~ in the MAC-reformatted table.

j. Modify all other values to be consistent with new information derived during HF testing.

k. Correct the values and indices in the existing MAC table that are in error and use the corrected values in the new reformatted table.

l. Remove MAC designations in Appendix E Table XX (see enclosure 2).

m. Remove MAC designation in Appendix E Table XXXIII (see enclosure 3).

n. Update index in basic document to reflect removal of MAC and PROTOCOL designations in parameter tables and Appendices. (see enclosure 4)

o. Update basic document to remove references to MAC and PROTOCOL tables and use MIL-STD-188-220 Parameters and Parameter Values as new reference. (See enclosure 5).

p. Delete MAC from Definitions (Chap 3) in Basic document. (See encl 6).

q. Delete references to MAC in Notes (Chap 6) in Basic document. (See encl 7)

r. Update Appendix C to remove references to MAC and PROTOCOL tables and use MIL-STD-188-220C Parameter Tables as new reference. (See enclosure 8).

s. Update Appendix B to remove references to MAC tables (See enclosure 9).

t. Change the units of measure in the reformatted tables to seconds, except MUP that will remain in minutes, in accordance with SCC-145.

4. ALTERNATIVE SOLUTIONS: None.
5. SYSTEM CHANGES REQUIRED: Some communication processors and their interfaces will require change to accommodate the new variables.
6. CONFIGURATION ITEM DOCUMENTATION CHANGES: MIL-STD-188-220C.
7. IMPACT ON INTEROPERABILITY: Improves interoperability.
8. IMPACT ON RELATED DOCUMENTS: None.
9. IMPLEMENTATION DATES: ~~First quarter of CY 2005~~Oct 2003.
10. OTHER CONSIDERATIONS: None.
11. REFERENCES: None.
12. TROUBLE REPORTS (TRs) ADDRESSED IN THIS SCC: None.