



Medical Body Area Networks (MBANs)

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MBANs Recon Order and FNPRM

- FCC released a First Report and Order (R&O) and Further Notice of Proposed Rulemaking (FNPRM) in May, 2012 amending the Part 95 Medical Radio (MedRadio) rules to permit development and operation of wireless Medical Body Area Networks (MBANs)
 - FNPRM issued to seek comment on qualifying criteria and selection process for choosing an MBAN frequency coordinator
- Details regarding technical requirements for this new radio service were presented at the April 2013 TCB Workshop
- Order on Reconsideration and Second Report and Order released on August 21st, 2014.
 - This presentation will provide an overview of this recent regulatory action



Review of MBAN Service

- MBANs are low power medical networks that support wireless data communications between body (patient)-worn sensors and a dedicated programmer/control device.
- MBANs are authorized to use the 2360-2400 MHz frequency band on a secondary basis with respect to existing primary radio services
 - MBANs must not cause harmful interference to, and must accept interference from, other stations operating within the primary service(s) allocation.



Review of MBAN Service (cont.)

- In order to facilitate interference protection to primary radio services sharing the band, particularly the Aeronautical Mobile Telemetry (AMT) service operating in the 2360-2390 MHz segment of the band, requirements were adopted for the registration and coordination of all MBAN operations within the 2360-2390 MHz band segment with an MBAN frequency coordinator to be designated by the Commission
- See April 2013 TCB Workshop presentation and/or FCC 12-54 for additional details



Changes to MBAN Rules by Order on Reconsideration

- Health care facility definition
 - Revised §95.1203 to limit the use of the 2360-2390 MHz band segment to hospitals and health care facilities that provide patient use beyond a 24-hour period for rendering medical treatment
- Antenna location limitations
 - Revised §95.1214 to remove perceived constraints on MBAN antenna siting in the 2390-2400 MHz band segment
- MBAN configurations with a single body-worn device
 - Appendix 1 to Subpart E of Part 95 amended to permit pairing of a program/control transmitter with a single body-worn sensor



Changes to MBAN Rules by Order on Reconsideration (cont.)

- Flexibility in MBAN system design
 - Modified §95.1209(g) to permit communications between programmer/control devices associated with separate MBANs for the sole purpose of avoiding mutual interference
- Communication between body-worn sensing devices
 - Amended §95.1209 to eliminate language that precludes body-worn devices from communicating with one another



Changes to MBAN Rules by Order on Reconsideration (cont.)

- “Coordinator node” functionality
 - The modification to §95.1209 permitting communication between body-worn devices is deemed adequate to allow for designation of either the programmer/control or body-worn device to perform as a “coordinator node” as requested by petitioners
- Transmission cessation in absence of control message
 - Revised §95.628(c) to clarify that the requirement to cease transmission in absence of a control message also applies to body-worn sensing devices



Changes to MBAN Rules by Order on Reconsideration (cont.)

● Registration requirements

- Modified §95.1223(a) to require that all MBANs capable of operation in 2360-2390 MHz band segment register with the MBAN coordinator, even if planned use is constrained to the 2390-2400 MHz band segment
- Changed §95.1223(a) to limit registration requirements to programmer/control transmitters (*i.e.*, body-worn sensors exempted)
- Modified §95.1223(b) to clarify that programmer/control transmitter replacements with same technical characteristics (*i.e.*, same manufacturer, model, and FCC ID) do not require additional registration notification

● MBAN location changes

- Revised §95.1223(b) to clarify the procedures for how the AMT coordinator is to be consulted prior to an MBAN location or operational change



Second Report and Order

- The new rules require that MBAN operations in the 2360-2390 MHz band segment be registered and coordinated with an MBAN coordinator to protect AMT operations from harmful interference.
- In the FNPRM, comment was requested on a number of issues related to designating an MBAN coordinator or coordinators.
- The 2nd R&O adopts specific procedures regarding the MBAN coordinator selection, terms of service, qualifying criteria and fees for service.
 - Refer to FCC 14-124 for more details (available on-line at: <http://www.fcc.gov/document/commission-finalizes-rules-operation-medical-body-area-networks>)



Certification Considerations

- MBAN devices are on PBA List
 - Application for certification may be filed with a TCB but a PBA must be filed with the FCC
 - The MBAN operational description must clearly define how communications with the Control Point/Frequency Coordinator will be managed.
 - A complete description of the communications protocol shall be provided for review.
- Now that the MBAN rules have been finalized, a detailed compliance measurement guidance KDB is under preparation and will soon be released for comment.
 - If questions arise before publication of the KDB guidance, they should be submitted to the FCC laboratory via the KDB inquiry system.



Questions and Answers

Thanks!