



MANATEE COUNTY

IT RADIO DIVISION

BDA Testing Procedures Summary

- 1. Required equipment:
 - Calibrated PCTEL SeeGull IBflex Device
 - DL Control Channel 855.3875MHz, PASS/FAIL threshold set for -102dBm, AVERAGE Mode, BW @ 100Khz (FBER and S/N removed from the report)
 - Two Calibrated Motorola APX P25 P1 Portables with Lapel Mics (signed out from Manatee County IT Radio Division on day of testing and returned promptly upon completion, address is 1801 5th Street W, Bradenton, FL 34205).
- 2. 'Preliminary' Test is conducted with the building 'CLOSED'. UL/DL Test on a 20X grid overlay of each floor. Within each grid a DL is recorded AND a 5 second radio transmission is announced with floor #, Grid #, Critical Area Location...Outside unit repeats the transmission and assigns a DAQ Number for inside unit to record. The radio channel to use is assigned by IT Radio Division or AHJ. If upon PTT the radio does NOT get a channel assigned a DAQ 0 is entered into the grid. (FYI, these are recorded channels by 911 dispatch).

Two individuals speak to each other over radios (Harvard sentences) and assess the "delivered audio quality"

Delivered Audio Quality Metrics (DAQ):

DAQ 1 Unusable. Speech present but not understandable.

DAQ 2 Speech understandable with considerable effort. Requires frequent repetition due to noise/distortion.

DAQ 3 Speech understandable with slight effort. Requires occasional repetition due to noise/distortion.

DAQ 3.4 Speech understandable without repetition. Some noise/distortion present.

DAQ 4 Speech easily understood. Occasional noise/distortion present.

DAQ 5 Speech easily understood.

Real speech assessment up and down
Subjective, individual opinion, expensive

Reliable equipment measures the radio power (signal strength, RSSI) and quality (signal relative to the radio noise)

Radio	DAQ 3.0	DAQ 3.0	DAQ 3.4	DAQ 3.4
	BER %	SINR	BER %	SINR
P25 C4FM	2.6	17.4	2	19
P25 CQPSK	2.6	15.7	2	17

Source: TIA A Table A1 11/2018
TSB-88.1E Annex

Focus on the radio signal
Objective, uniform, repeatable, accurate
Ideally up link measurements as well

23 **PCTEL provides decoding SINR/BER on P25, DMR and TETRA**

- 3. Submit the report to Manatee County IT Radio Division and AHJ for review.
- 4. If a system is approved for install, the Acceptance Test Procedure (ATP) is same as Preliminary (see item 2 above).
- 5. Submit the report to Manatee County IT Radio Division and AHJ for review.

For any further information contact:

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