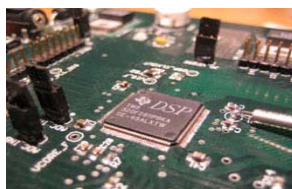




THE MARCONI PROJECT

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Transparent Wireless Modem Prototype Checklist

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1 Prototype Checklist

1.1 Functional Requirements

Priority	Name	Description	Pass (P) / Fail (F)
MUST	Radio Interfacing	Modem has 3.5mm audio connectors for signal input and output for interfacing with audio interface of voice-band radios	
MUST	Modem Output Signal Bandwidth	Modem output signals must fit within audio bandwidth of radios (300Hz to 3kHz)	
MUST	RS-232 Interfacing	Must interface with other equipment over a standard RS-232 serial interface	
MUST	Modem Operation Transparency	Must provide transparent operation through RS-232 and behave similarly to landline modems or null-modem connections	
SHOULD	Error Correction Scheme	Modem has a forward error correction scheme to reduce error rate of the received data	
SHOULD	Data Transmission Mode	Modem operates in a half-duplex mode for two-way operation over a single radio channel	
SHOULD	Input Signal Amplitude Tolerance	Can tolerate reasonable range of input signal amplitudes, from -20dBV to -3dBV (NOTE: This has been revised slightly from initial specification)	
SHOULD	Output Signal Amplitude Range	Can produce reasonable range of output signal amplitudes, from -20dBV to -3dBV into a 600Ω load (NOTE: This has been revised slightly from initial specification)	
Comments:			

Priority	Name	Requirement	Pass (P) / Fail (F)
MUST	Size	PCB must be less than 25 cm in either direction	
MUST	Weight	The modem must be less than 3.0 kg in weight	
SHOULD	Power	Should not require over 6 VDC @ 800 mA	
SHOULD	Portability	Should be small and light enough to be portable	
Comments:			

Priority	Name	Description	Pass (P) / Fail (F)
SHOULD	Net Data Transfer Rate	Must transfer data at minimum rate of 100 bits/s over voice-band radio link	
SHOULD	Bit Error Rate (BER)	Must not exceed 1 bit error per 1000 bits over reasonable channel conditions (15 dB Eb/No)	
Comments:			

1.4 Cost

Priority	Description	Pass (P) / Fail (F)
SHOULD	Each modem should cost less than \$300 CAD each	
Comments:		

1.5 Overall Comments

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Letter Grade: _____

Consultant Signature: _____

Date: _____