

IEEE P802.15
Wireless Personal Area Networks

Project	IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)
Title	TG7r1 CIRs Channel Model Document for High-rate PD Communications
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Re:	
Abstract	
Purpose	Providing Channel Impulse Responses of channel models which allow a fair comparison of different physical layer (PHY) High Rate PD Communications proposals submitted to TG7r1 in response to the Call for Proposals (CFP).
Notice	This document has been prepared to assist the IEEE P802.15. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.
Release	The contributor acknowledges and accepts that this contribution becomes the property of IEEE and may be made publicly available by P802.15.

1. Introduction

The files provided in this folder are channel impulse responses described in the document “TG7r1 Channel Model Document for High-rate PD Communications” P802.15-15-746r0. This document provides information about how to use the folder.

Each folder includes mat files for each receiver defined in the scenario.

The time resolution (time spacing) of all CIRs are 1 ns.

Distance Units are Millimeters.

Folders in the zip file:

%% Folder "Scenario 1"

1) This folder includes the CIRs for open office room and open office with cubicles. Number of CIRs (corresponds to test points) for each case are 24 such as D1-D24.

2) Coordinates of test points are as follows:

D1:(3400,2500,1700)	D5:(3400,-2500,1700)	D9:(3400,-7500,1700)
D13:(1950,-200,950)	D17:(-2050,-5700,950)	D21:(-5900,0,1100)
D2:(-200,2500,1700)	D6:(-200,-2500,1700)	D10:(-200,-7500,1700)
D14:(-2050,-200,950)	D18:(-6050,-5700,950)	D22:(2100,-5500,1100)
D3:(-3800,2500,1700)	D7:(-3800,-2500,1700)	D11:(-3800,-7500,1700)
D15:(-6050,-200,950)	D19:(2100,0,1100)	D23:(-1900,-5500,1100)
D4:(-7400,2500,1700)	D8:(-7400,-2500,1700)	D12:(-7400,-7500,1700)
D16:(1950,-5700,950)	D20:(-1900,0,1100)	D24:(-5900,-5500,1100)

3) Coordinates of luminaries are as follows:

S1:(-5250,5950,3000)	S5:(-5250,4250,3000)	S9:(-5250,2550,3000)
S13:(-5250,850,3000)	S17:(-5250,-850,3000)	S21:(-5250,-2550,3000)
S25:(-5250,-4250,3000)	S29:(-5250,-5950,3000)	S2:(-1750,5950,3000)
S6:(-1750,4250,3000)	S10:(-1750,2550,3000)	S14:(-1750,850,000)
S18:(-1750,-850,3000)	S22:(-1750,-2550,3000)	S26:(-1750,-4250,3000)
S30:(-1750,-5950,3000)	S3:(1750,5950,3000)	S7:(1750,4250,3000)
S11:(1750,2550,3000)	S15:(1750,850,3000)	S19:(1750,-850,3000)
S23:(1750,-2550,3000)	S27:(1750,-4250,3000)	S31:(1750,-5950,3000)
S4:(5250,5950,3000)	S8:(5250,4250,3000)	S12:(5250,2550,3000)
S16:(5250,850,3000)	S20:(5250,-850,3000)	S24:(5250,-2550,3000)
S28:(5250,-4250,3000)	S32:(5250,-5950,3000)	

4) Specifications of detector:

FOV: 85 degrees

Area: 1 cm²

5) Specifications of luminary:

Brand: LR24-38SKA35 Cree Inc

Half Viewing Angle: 40 degrees

%% Folder " Scenario 2"

1) This folder includes the CIRs for office room with secondary light. Number of CIRs (corresponds to test points) are 3 such as:

- * Ceiling Light (Source) To Desk Light (Relay) Receiver

- * Ceiling Light (Source) To Destination

- * Desk Light (Relay) Transmitter To Destination

2) Coordinates of test points are as follows:

Destination:(-1190,1350,880)

Desk Light (Relay) Receiver:(-1260,1280,1500) Tilt angles in X, Y, Z: (45,225,0)---Towards the source

3) Coordinates of luminaries are as follows:

Ceiling Light (Source):(0,0,3000)

Desk Light (Relay) Transmitter:(-1190,1350,1330)

Tilt angles in X, Y, Z: (0,219,0)---Towards destination

4) Specifications of detector:

FOV: 85 degrees

Area: 1 cm²

5) Specifications of luminary:

Brand: LR24-38SKA35 Cree Inc

Half Viewing Angle: 40 degrees

%% Reference Channel Model: "Scenario 3"

1) This file includes the CIRs for home environment. Number of CIRs (corresponds to test points) are 8 such as D1-D8.

2) Coordinates of test points are as follows:

D1:(600,-1000,600)	D5:(-200,1500,900)
D2:(-2000,-2000,1700)	D6:(-1000,1850,900)
D3:(2000,2000,1700)	D7:(-1000,1150,900)
D4:(-1800,1500,900)	D8:(1700,-1800,1100)

3) Coordinates of luminaries are as follows:

S1:(-2500,2500,3000)	S5:(0,0,3000)
S2:(0,2500,3000)	S6:(2500,0,3000)
S3:(2500,2500,3000)	S7:(-2500,-2500,3000)
S4:(-2500,0,3000)	S8:(0,-2500,3000)
S9:(2500,-2500,3000)	

4) Specifications of detector:

FOV: 85 degrees

Area: 1 cm²

5) Specifications of luminary:

Brand: CR6-800L Cree Inc

Half Viewing Angle: 40 degrees

%% Folder "Scenario 4"

1) This folder includes the CIRs for one manufacturing cell. Labels and Number of CIRs are as follows:

"Individually"-----48: For LEDi-Dj i=1:6 & j=1:8

"Simultaneously"----8: For LED(1-6)-Dj

2) Coordinates of test points are as follows:

D1:(-2810,-3594,2500)	D5:(2984,4042,2500)
D2:(0,-3594,2500)	D6:(-310,4040,2500)

D3:(2810,-3594,2500) D7:(-2509,5645,2500)
D4:(2370,500,2500) D8:(-2510,1025,2500)

3) Coordinates of LEDs are as follows:

S1:(1170,-10,2080) S4:(1200,-100,2050)
S2:(1200,-45,2190) S5:(1125,-100,2130)
S3:(1230,-150,2140) S6:(1270,-45,2105)

4) Specifications of detector:

FOV: 35 degrees

Area: 1 cm²

5) Specifications of LEDs:

Brand: MC-E Cree Xlamp Inc

Half Viewing Angle: 60 degrees
