

Tips on Giving Technical Presentations

Adapted from Bing Wang and John Chandy's Senior Design Notes

Introduction

- Communication is key to
 - Conveying the importance of your ideas
 - Nobody cares if they can't understand what you are talking about
 - Manage your project
 - Getting your project funded
 - Sell the merits of your project
- Communication skills required
 - Oral presentations
 - Written proposals

Outline

- Oral Presentations
 - Know your audience
 - Organization and Focus
 - Talk to the audience (and not to the slides)
 - Time Management

Oral Presentation: Know your audience

- Clearly identify the audience's depth of knowledge
 - Do not derive semiconductor physics to investment bankers
 - Do show fundamental understanding of engineering to whoever is giving the grades !
- Clearly identify the audience's interests
 - Investment Bankers want to make \$\$\$\$
 - Your professors want to make sure you understand engineering
 - Everyone likes to be entertained!

Know your audience

- Do research on your audience.
- What does the audience want to hear??
- Venture Capitalists?
 - How you're going to make them money
- Naval Research Managers?
 - How you're going to improve their ships' capability to communicate

Presentation: know your audience

- Conference presentation
 - Most likely will be aware of the general area of your paper
 - Can skip most background material
 - Focus on the key contributions of your paper
 - How does it differ from existing approaches?
 - Quantify any improvements in your method
 - Is it a revolutionary or evolutionary idea?
 - Identify holes in your paper, because someone in the audience is going to ask you about it
 - The paper reviews will usually identify these deficiencies

Presentation: know your audience

- Funding Proposals
 - Government agencies
 - Need to convince agency your ideas advance science/engineering
 - Venture Capital firms are reviewed by firm's partners
 - Judge on strength of team members, market appetite for the ideas, and quality of ideas
 - Interested in making money.
 - Need to convince VC that the idea will make money
 - Internal project proposals
 - Proposal needs to make a business case
 - Does new project/product align with current business?
 - Do the projected revenues justify the associated costs of project development?

Presentation: know your audience

- Teaching
 - Students need to know the details
 - Don't skip over the mechanics of a problem solution
 - Lots of examples
 - Each lecture should have a central focus point
 - Make sure that you allow and encourage questions
 - Interact with students - ask the students questions

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FOCUS

- What is the point? Why am I here?
 - oral presentations
- For long talk, can lose audience easy
 - Avoid lengthy equations
 - Unavoidable in most ECE lectures
 - A picture is worth a thousand words
 - NOT, a picture with a thousand words

Too Many Details for most talks



TMP03/TMP04

WAFER TEST LIMITS ($V_+ = +5\text{ V}$, $GND = 0\text{ V}$, $T_A = +25^\circ\text{C}$, unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Units
ACCURACY						
Temperature Error		$T_A = +25^\circ\text{C}^1$			3.0	$^\circ\text{C}$
Power Supply Rejection Ratio	PSRR	Over Rated Supply			1.2	$^\circ\text{C}/\text{V}$
OUTPUTS						
Output High Voltage, TMP04	V_{OH}	$I_{OH} = 800\ \mu\text{A}$	$V_+ - 0.4$			V
Output Low Voltage, TMP04	V_{OL}	$I_{OL} = 800\ \mu\text{A}$			0.4	V
Output Low Voltage, TMP03	V_{OL}	$I_{SENK} = 1.6\ \text{mA}$			0.2	V
POWER SUPPLY						
Supply Range	V_+	Unloaded	4.5		7	V
Supply Current	I_{SY}				1.3	mA

NOTES
 Electrical tests are performed at wafer probe to the limits shown. Due to variations in assembly methods and normal yield loss, yield after packaging is not guaranteed for standard product dice. Consult factory to negotiate specifications based on dice lot qualification through sample lot assembly and testing.
¹Maximum deviation from ratiometric output transfer function over specified temperature range.

ABSOLUTE MAXIMUM RATINGS*

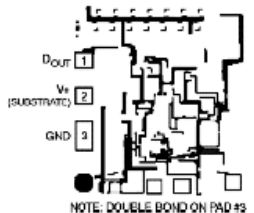
Maximum Supply Voltage	49 V
Maximum Output Current (TMP03 D_{OUT})	50 mA
Maximum Output Current (TMP04 D_{OUT})	10 mA
Maximum Open-Collector Output Voltage (TMP03)	+18 V
Operating Temperature Range	-55°C to $+150^\circ\text{C}$
Dice Junction Temperature	$+175^\circ\text{C}$
Storage Temperature Range	-65°C to $+160^\circ\text{C}$
Lead Temperature (Soldering, 60 sec)	$+300^\circ\text{C}$

*Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. This is a stress rating only and functional operation at or above this specification is not implied. Exposure to the above maximum rating conditions for extended periods may affect device reliability.
¹Digital inputs and outputs are protected, however, permanent damage may occur on unprotected units from high-energy electrostatic fields. Keep units in conductive foam or packaging at all times until ready to use. Use proper antistatic handling procedures.
²Remove power before inserting or removing units from their sockets.

Package Type	θ_{JA}	θ_{JC}	Units
TO-92 (T9)	162 ¹	120	$^\circ\text{C}/\text{W}$
SO-8 (S)	158 ¹	43	$^\circ\text{C}/\text{W}$
TSSOP (RU)	240 ¹	43	$^\circ\text{C}/\text{W}$

NOTE
¹ θ_{JA} is specified for device in socket (worst case conditions).

DICE CHARACTERISTICS




Die Size 0.050 x 0.060 inch, 3,000 sq. mils
 (1.27 x 1.52 mm, 1.93 sq. mm)

For additional DICE ordering information, refer to databook.

ORDERING GUIDE			
Model	Accuracy at +25°C	Temperature Range	Package
TMP03FT9	± 3.0	XIND	TO-92
TMP03FS	± 3.0	XIND	SO-8
TMP03FRU	± 3.0	XIND	TSSOP-8
TMP03GBC	± 3.0	+25°C	Die
TMP04FT9	± 3.0	XIND	TO-92
TMP04FS	± 3.0	XIND	SO-8
TMP04FRU	± 3.0	XIND	TSSOP-8
TMP04GBC	± 3.0	+25°C	Die

CAUTION
 ESD (electrostatic discharge) sensitive device. Electrostatic charges as high as 4000 V readily accumulate on the human body and test equipment and can discharge without detection. Although the TMP03/TMP04 features proprietary ESD protection circuitry, permanent damage may occur on devices subjected to high energy electrostatic discharges. Therefore, proper ESD precautions are recommended to avoid performance degradation or loss of functionality.



Focus

- Remind audience of important points.
- Detailed Technical figure may be unavoidable in engineering presentations
- If detailed picture is absolutely necessary, emphasize important details visually

Conditions Important!
T=25C

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Supply Current	I _{SY}	Unloaded	4.5	7	1.3	V mA

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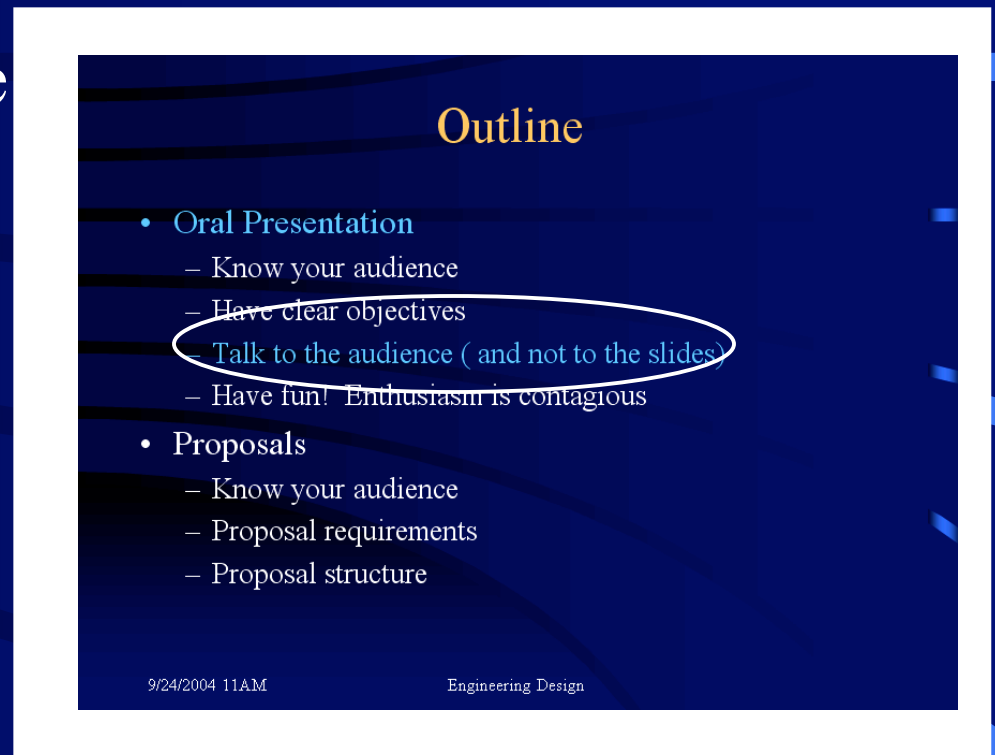
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TMP04GBC	±3.0	+25°C	Die

Organization: Provide outline of talk

- Oral Presentation
 - Know your audience
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 - Talk to the audience (and not to the slides)
 - Time Management

Organization

- Easy for audience to lose big picture
- Get lost in details
- Useful tip: redisplay the talk outline for each topic
- Highlight present topic
- Remind audience the organization of the talk



Outline

- Oral Presentation
 - Know your audience
 - Have clear objectives
 - Talk to the audience (and not to the slides)
 - Have fun! Enthusiasm is contagious
- Proposals
 - Know your audience
 - Proposal requirements
 - Proposal structure

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Organization: Basic Structure

- Start with Introduction
 - Motivations
 - Why is this interesting
- Provide outline of the talk
 - Can be redisplayed to show topic progression
- Background material as needed
- Your new ideas
 - New and better ways to doship2ship communications, make \$\$\$\$, lose weight, etc
- Defend your ideas
 - Examples are helpful
- Conclusion

Organization

- Powerpoint Rules
 - Keep it simple
 - Cut clutter
 - At the most two font families
 - No more than one or two charts or figures per slide
 - 666 rule
 - 6 words per bullet
 - 6 bullets per page
 - 6 word slides in a row
 - Be consistent

Organization

- Powerpoint Sins (J. Sommerville)
 - Slide Transitions and Sound Effects
 - Standard clipart
 - Presentation templates
 - Text-Heavy slides
 - Text and images are too small
 - Reading the slides
 - Faith in technology

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Talk to the audience

- Obtain and maintain interest
 - Make eye contact with people in different parts of the room
 - Use examples
 - “We will build an optical communication network using dense wavelength division multiplexing with polarization division multiplexing to transmit Terabit bandwidth telecommunication signals” BORING!
 - “Doesn’t it drive you nuts when it takes you 20 minutes to download the DOOM3 trial version?”
 - “We will build a network that will download it in 10 seconds using optical fiber!”

Presentation Style

- If you don't seem excited about the topic, nobody else will
- Don't mumble - be clear and enunciate
- Be active
- Encourage questions
 - Keeps the audience involved

Humor

- Be appropriate!
- Invited talks, lectures, okay to use some jokes.
- People are more awake if they're laughing
- Proposal talks, i.e. asking for money in a competitive bid, be more serious.
- Humor maybe misconstrued as not taking the task seriously

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Time Management

- First rule of presentations
 - KNOW HOW MUCH TIME YOU HAVE!!!
 - Nothing irritates an audience more than a presentation that runs long - especially if its boring
- Keep a watch or clock easily visible
- Know ahead of time which slides you can skip if you are running long
 - Skip implementation details
 - Show results - that's what impresses people
- Good rule of thumb - 1 to 2 minutes per slide

Time Management

- Best way to judge time is to practice ahead of time
- Do a run through by yourself
- Practice as if you were doing the actual presentation
 - You can catch places where you may not be expressing the material clearly enough
 - Use the notes feature to help you
- Practice enough times so that it is natural
 - You should be able to know what the next slide is so you can transition naturally

Conclusion

- Oral presentations;
 - know your audience,
 - organize and focus, and
 - talk to your audience, and
 - make sure you don't run long.