

272-R03

BCTHS MECHATRONICS TECHNOLOGY

NAME: _____

START DATE: ____/____/____

COMPLETION DATE: ____/____/____

TASK: R03 Super heterodyne receiver

PERFORMANCE OBJECTIVE: Given a heterodyne receiver, the student will identify each Circuit area and describe its function with 90% accuracy

ENABLING OBJECTIVE: Complete learning guide R01 and R02

TOOLS REQUIRED: Heterodyne receiver and radio communications tape

SAFETY FACTORS: *Complete Q01-Q02 and observe all school/classroom safety rules at all times*

ACADEMIC ANCHORS:

M11.A.1.1.2 Express numbers using scientific notation

M11.A.2.1.1 Solve problems operations with rational numbers using rates and percentages

R11.A.1.3.5 Demonstrate after reading understanding of non-fiction text

R11.A.2.1.2 Identify meaning of content specific words used in text

CAREER & WORK ANCHORS:

13.2.11.E Demonstrate essential workplace skills.

PERFORMANCE CHECKLIST:

STUDENT CHECK	TASK TO BE COMPLETED	TEACHER SIGN OFF
_____	1. Identify academic anchors and complete learning guide AA01	_____
_____	2. View Information Sheets	_____
_____	3. Read Information Sheets	_____
_____	4. Watch video on wireless communications	_____
_____	5. Complete Performance Sheets	_____

PERFORMANCE LEVEL:

MASTERY SATISFACTORY FAMILIARIZATION INSTRUCTED/CANNOT PERFORM

BUCKS COUNTY TECHNICAL SCHOOL – June 17, 2021

INSTRUCTOR'S SIGNATURE

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INFORMATION SHEET

Knowledge of the super-heterodyne receiver is important because every wireless electronic device incorporates this basic design. Television, AM/FM radio, pagers, cordless and cellular telephones, wireless internet, wireless networking, garage door openers, RF remote controls, two-way radio communications, and many other wireless devices use the heterodyne type receiver. The only basic difference between these units is the signals that they are receiving. They all operate using a RF carrier wave that carries information to the receiving unit. The receiving unit must then tune in the operating frequency and demodulate the information on the carrier wave. The information on the carrier wave is what makes the unit unique. It could be video, audio, music, digital, data, or other forms of communicable information.

PERFORMANCE SHEET

DEFINE THE FOLLOWING TERMS.

1. Modulation - _____

2. Tank circuit - _____

3. Detection - _____

4. Carrier wave - _____

5. Heterodyne - _____

6. Mode - _____

7. Oscillator - _____

8. Resonance - _____

9. Analog - _____

10. Digital - _____

Get a heterodyne type receiver from the Instructor and identify the major circuit areas.
Give a description of each area and its function.

GRADING RUBRIC

	Instructed/Cannot 0 points	Familiarization 1 point	Satisfactory 2 points	Mastery 3 points
Safety	Student rarely follows industry standard safety rules	Student needs to be frequently reminded to follow industry standard safety rules	Follows all industry standard safety rules, but required one reminder.	Student always follows all industry standard safety rules
Task	Student is unable to complete task	Student requires frequent assistance to complete task, and/or is familiar with some parts of the task	Student requires very little assistance to complete task, or has only completed task once or twice, but completed it satisfactorily with little to no assistance	Student can perform task with no assistance and has completed the task many times with no errors.

Mastery = 6 points

Satisfactory = 4-5 points

Familiarization = 2-3 points

Instructed cannot perform = <2 points